Attitudes and Beliefs of Parents, School Teachers and School Nurses towards School-Based Sexual and Reproductive Health Education Programs in Oman

A thesis submitted in total fulfilment of the requirements for the degree of Doctor of Philosophy

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Declaration

I certify that except where due acknowledgements have been made, this work is entirely that of the author; and this work has not been submitted previously, in whole or in part, to qualify for any other academic award. The entire content of the thesis is the outcome of work which was undertaken by the author since the official commencement date of the approved research program. Any editorial work, paid or unpaid, carried out by a third party is acknowledged. Furthermore, ethics procedures and guidelines have been followed.

Omar Alzaabi
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Publications


Abstract

Background
School-based sexual and reproductive health education (SRHE) programs play an important role in reducing adolescents’ sexual risk behaviour and promoting health and well-being. Comprehensive adolescent SRHE programs have proven to have positive effects on adolescent sexual behaviours. In countries where such programs have been adopted into the education curriculum, there has been a significant association with delayed first intercourse, consistent contraceptive use, and safe sexual practices. Moreover, SRHE is associated with the prevention of sexually transmitted infections (STIs) including human immunodeficiency virus (HIV), reduction in sexual abuse and unintended pregnancies. School-based SRHE programs have also been proven effective in improving parents’ competence, knowledge, and skills related to parent-adolescent sexual and reproductive health communication. There is limited evidence regarding the attitudes and beliefs of parents, school teachers, and school nurses toward the implementation of school-based SRHE programs in Islamic cultural settings, including Oman.

Research Aim
The aim of this study—underpinned by Social Cognitive Theory (SCT)—was to examine the attitudes and beliefs of parents, school teachers and school nurses regarding school-based SRHE programs in Oman.

Methods
A mixed-method, two-phase sequential explorative descriptive study comprising both quantitative and qualitative research methods design was undertaken. In Phase one, three key stakeholder groups: female school nurses, school teachers (male and female teachers who teach students grades 7-9) and parents (mothers and fathers of children studying in grades 7-9) were invited to participate in seven homogenous single-sex focus group discussions (FGDs). There were between 5-9 persons in each group drawn from two public secondary schools—located in the Saham district—from grades 5-10 (one boys’ school and one girls’ school) using a convenience sampling approach. Each FGD was guided by a pre-piloted set of semi-structured interview questions. Following on from the FGDs, six face-to-face in-depth individual interviews (IDIs) were conducted three months later with two parents, three school teachers and one senior female school nurse—who were participants in the FGDs—to confirm some of the key focus group interview findings. In Phase one, the data was analysed using a thematic analysis approach.

In Phase two, a convenience sample of 250 parents comprising an equal number of mothers and fathers of children aged 12 to 14 (grades 7 to 9) was drawn from the same two public secondary schools that were used in Phase one. Participants were invited through the school administration to complete a self-administered questionnaire in Arabic, which is the national language of Oman.
The response rate for the questionnaires was 95.6% (n = 125 mothers; n = 114 fathers). The analysis of quantitative data was performed using the Statistical Package for Social Sciences (SPSS) version 24.0.

Results
Phase one (qualitative results):
Four major themes emerged from the thematic analysis of parents’, school teachers’ and school nurses’ responses. Most parents, school teachers and school nurses interviewed in the FGDs and IDIs supported a comprehensive age-appropriate SRHE curriculum that addresses various SRHE topics including controversial issues such as child sexual abuse, contraception, premarital sex, teenage pregnancy, and homosexuality. They believed that the provision of school-based SRHE programs can help to improve adolescent sexual health knowledge and promote adolescent sexual and reproductive health and well-being. In addition, they recommended that SRHE programs should be aligned with Islamic beliefs and delivered by qualified educators. Many parents, school teachers and school nurses stated that Islam is not a barrier to providing SRHE programs. However, they stated that sexual discussion with adolescents outside such programs is taboo in Omani culture and therefore, communication regarding sexual topics is avoided. Finally, they reported that there is a current lack of scientific knowledge to conduct SRHE programs in Omani schools and therefore, there is a need for SRHE training.

Phase two (quantitative results):
The findings revealed that the majority of parents (72.8%) supported school-based SRHE programs providing they incorporated Islamic scriptural rules and regulations about premarital sexual abstinence. Almost all parents supported comprehensive age-appropriate SRHE programs being taught to students aged 10 to 15 including topics perceived as controversial in Omani culture. However, only 61% of parents endorsed including the topics of birth control and safer sex. Most parents considered themselves, school teachers and school nurses as important sources of SRHE. However, more than 90% of parents indicated that their adolescents had not received good SRHE at school. In addition, most parents reported that they do not discuss SRHE with their adolescents and lacked the knowledge to do so. Finally, 85% of parents wished to attend SRHE training.

Implications for School-Based SRHE Programs
The findings of this study provide implications for future efforts to change policy and foster implementing school-based SRHE programs for adolescents. The strong parental support for the introduction of school-based SRHE programs can assist school curriculum decision-makers, classroom teachers, school administrators, school healthcare-providers and researchers in Oman and other Muslim countries. Furthermore, the results of this study can help to support implementing SRHE programs globally within Muslim immigrant populations.

Use of these data could also help to improve adolescent academic achievements in Oman and other Middle East countries. Sexual and reproductive health education needs to be introduced in the
schools to coincide with critical periods of adolescent development. The long-term social and behavioural outcome is through adolescents having sexual and reproductive health knowledge delivered in a credible and supportive environment that will contribute to the reduction of risky sexual behaviours among adolescents and therefore reductions in the prevalence of STIs and adolescent pregnancy. Making school curriculum decision-makers aware about parental support for school-based SRHE programs coupled with evidence-based information about contents and cultural structures of these programs is an important strategy in successfully adopting and designing these programs to support adolescent well-being. In addition, this study suggests that schools and the media can work to develop more positive public views towards school-based education on safe sex and birth control. Lastly, this study also strongly recommends that school curriculum policy-makers should take into account the need to provide parents, school teachers and school nurses with SRHE training sessions in order to conduct successful SRHE programs for adolescents.

**Keywords:** parents; schools; school teachers; school nurses sexual and reproductive health education; attitudes; beliefs; Islam; Middle East
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List of Abbreviations

AIDS: Acquired Immune Deficiency Syndrome
ANOVA: Analysis of Variance
ARCSHS: Australian Research Centre in Sex, Health and Society
CDC: Centers for Disease Control and Prevention
CHEAN: College Human Ethics Advisory Network
FGDs: Focus Group Discussions
HBM: Health Belief Model
IBM: International Business Machines
IDIs: Individual Interviews
HIV: Human Immunodeficiency Virus
HPV: Human Papillomavirus
GSHS: Global School-Based Student Health Survey
KSA: Kingdom of Saudi Arabia
MENA: Middle East and North Africa
Oman CDSC: Oman Department of Communicable Disease Surveillance and Control
Oman MOE: Oman Ministry of Education
Oman MOH: Oman Ministry of Health
Oman NCSI: Oman National Center for Statistics and Information
RCT: Randomised Controlled Trial
SCT: Social Cognitive Theory
SD: Standard Deviation
SPSS: Statistical Package for the Social Sciences
SQU: Sultan Qaboos University
SRHE: Sexual and Reproductive Health Education
STIs: Sexually Transmitted Infections
UAE: United Arab Emirates
UK: The United Kingdom
UNESCO: United Nations Educational, Scientific and Cultural Organisation
UNFPA: United Nations Population Fund
UNICEF: United Nations Children’s Fund
USA: The United States of America
WHO: World Health Organisation
Chapter 1: Introduction

This chapter provides an introduction to this study, which was conducted to understand the attitudes, beliefs, facilitators and barriers of parents, school teachers, and school nurses towards implementing school-based SRHE programs in Oman. The findings of this study can help to improve adolescents’ sexual and reproductive health. This chapter begins with the definitions of key terms used in this study. This is followed by the research aims, objectives, questions, the significance of this study and an overview of the setting of the study. This chapter includes a brief introduction to the theoretical framework, methodology and data collection applied in this study. Lastly, an outline of the whole thesis is presented as a guide to the later chapters.

1.1 Sexual and Reproductive Health Education

Sexual and reproductive health education programs play an important role in reducing adolescents’ sexual risk behaviour and promoting health and well-being (Kirby, Coyle, Alton, Rolleri, & Robin, 2011; United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2018; WHO Europe, 2010). According to the World Health Organisation (2018a, 2006), reproductive health is defined as:

*a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capacity to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the right of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law and the right of access to appropriate*
health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant (p. 4).

The WHO definition of reproductive health is considered as a comprehensive definition that includes care for sexual health and encompasses biophysical, sociocultural and socioeconomic contexts. Therefore, according to the WHO (2018a, 2006), sexual health is seen as a sub section of reproductive health that is defined as:

Sexual health is a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled (p. 5).

Furthermore, according to UNESCO (2018) international technical guidance on sexuality education, comprehensive SRHE is defined as:

an age-appropriate, culturally relevant approach to teaching about sex and relationships by providing scientifically accurate, realistic, non-judgemental information. Sexuality education provides opportunities to explore one’s own values and attitudes and to build decision-making, communication and risk reduction skills about many aspects of sexuality. The term comprehensive emphasizes an approach to sexuality education that encompasses the full range of information, skills and values to enable young people to exercise their sexual and reproductive rights and to make decisions about their health and sexuality (p. 6).
From a life-span perspective, adolescents are vulnerable to receiving incorrect or misleading information regarding sexual and reproductive health from numerous sources, such as their friends, television, movies, magazines and the Internet (Mosavi, Babazadeh, Najmabadi, & Shariati, 2014). Thus, the importance of appropriate and adolescent specific SRHE is highlighted (Barr et al., 2014; Brown et al., 2007; Escobar-Chaves et al., 2005; Mosavi et al., 2014; UNESCO, 2018). Comprehensive adolescent school-based SRHE programs have proven to have positive effects on adolescent sexual behaviour. In countries where such programs have been adopted into the education curriculum, there has been a significant association with delayed first intercourse, consistent contraceptive use and safe sexual practices (WHO Europe, 2010). Moreover, SRHE is associated with the prevention of sexually transmitted infections (STIs) including human immunodeficiency virus (HIV), reduction in sexual abuse and unintended pregnancies (Chin et al., 2012; Kirby et al., 2011; Kirby, Laris, & Rolleri, 2007; Kingori, Ice, Hassan, Elmi, & Perko, 2018; Markham et al., 2012; Schalet et al., 2014; Shepherd et al., 2010; UNESCO, 2009, 2018; WHO Europe, 2010). School-based SRHE programs have also been proven effective in improving parents’ competence, knowledge, and skills related to parent-adolescent sexual and reproductive health communication (Grossman, Tracy, Charmaraman, Ceder, & Erkut, 2014). Despite attempts at educating the public of the risks, STI acquisition and pregnancy among young people aged 15 to 24 are ongoing concerns internationally (Centers for Disease Control and Prevention [CDC], 2017a; WHO, 2018b). Thus, SRHE programs can result in improved sexual health behaviour, minimised sexual risk taking and improve the quality of life for adolescents.

School-based SRHE programs have been established in many secondary schools internationally as an essential step to improving and maintaining the sexual health of young people (Australian Research Centre in Sex, Health and Society [ARCSHS], 2017; Bleakley, Hennessy, & Fishbein, 2006; Ingham & Hirst, 2010; Parker, Wellings, & Lazarus, 2009; UNESCO, 2018).
Nevertheless, school-based SRHE programs face various barriers to their implementation in many Western, African and Asian countries due to complex social cultural, factors at play (Avusabo-Asare, Bankole, & Kumi-Kyereme, 2008; Mbonile & Kayombo, 2008; Orgocka, 2004; Pokharel, Kulczycki, & Shakya, 2006; Sridawruang, Pfeil, & Crozier, 2010). For example, parental and community attitudes toward SRHE programs have been shown to be diverse. The cultural and social sensitivities of some parents have created barriers to their implementation (Varani-Norton, 2014; Barr et al., 2014; Howard-Barr, Moore, Weiss, & Jobli, 2011). Parental opposition and support to the delivery of school-based SRHE programs were identified by teachers, school nurses and school administrators in several countries including Australia (Duffy, Fotinatos, Smith, & Burke, 2013; Johnson, Sendall, & McCuaig, 2014), the United States of America (USA) (Eisenberg, Madsen, Oliphant, & Sieving, 2013; Barr et al., 2014), the United Kingdom (UK) (Hayter, Piercy, Massey, & Gregory, 2008; Turnbull, van Wersch, & van Schaik, 2008), Canada (Cohen, Byers, & Sears, 2012; McKay, Byers, Voyer, Humphreys, & Markham, 2014), Iran (Latifnejad-Roudsari, Javadnoori, Hasanpour, Hazavehei, & Taghipour, 2013) and Egypt (Farrag & Hayter, 2014). These factors are especially prevalent in Middle Eastern countries including Oman (DeJong, Jawad, Mortagy, & Shepard, 2005; Roudi-Fahimi & El Feki, 2011).

The sexual health needs of adolescents in the Middle East is poorly understood and provided for (Tabatabaie, 2015a). Significant barriers obstruct the implementation of school-based SRHE program including religious beliefs (DeJong et al., 2005; Farrag & Hayter, 2014; Jaffer, Afifi, Ajmi, & Alouhaishi, 2006; Merghati-Khoei, Abolghasemi, & Smith, 2014; Roudi-Fahimi & El Feki, 2011; Tabatabaie, 2015a). For example, across the Middle East, the Islamic faith is widely practised. The main source of beliefs for people of the Islamic faith are the Holy Quran and Sunna/Hadith (all advices and actions of Prophet Mohammed 1400 years prior when Muslim men and women engaged in discussions relating to sexual matters) (Almany, 2009; Islamic Sources,
In contemporary times, SRHE programs are considered as part of Western social mores and perceived as incompatible with Islamic values and norms (DeJong et al., 2005; Farrag & Hayter, 2014; Merghati-Khoei et al., 2014). Furthermore, some studies demonstrated that Islamic parents do not support the introduction of school-based SRHE even when they are aware of the sexual consequences that are associated with poor knowledge (Tabatabaie, 2015b). This is because of parental assumptions that adolescents do not engage in premarital sexual activities due to it being forbidden in the Islamic faith and the associated familial dishonour and shame (Tabatabaie, 2015b; Orgocka, 2004). Therefore, by supporting school-based SRHE is to acknowledge and condone premarital sexual activity (Tabatabaie, 2015b). In the Middle East, parents rarely talk to their children regarding sexual matters and schools are seen as not to provide sufficient sexual and reproductive health information (Alquaiz, Almuneef, & Minhas, 2012; Farrag & Hayter, 2014; Gańczak et al., 2007; Merghati-Khoei et al., 2014).

To date, the few studies from the Middle East, are mainly from Iran, indicating that certain cohorts of parents, school teachers, adolescents, and healthcare providers hold positive attitudes towards the potential for SRHE in secondary schools. Furthermore, some health organisations in Iran consider these programs part of their adolescent health agenda (DeJong et al., 2005; El-Feki, 2006). However, these studies used a small sample of parents, school teachers and school nurses, were localised to Iran and, were limited to examine only the attitudes and beliefs of female nurses and of mothers of school aged children. Thus, what is needed is further examination of the attitudes and beliefs of the full range of associated stakeholders, an in-depth investigation of the social and political fields of influence and culturally based methodologies. Exploring attitudes and beliefs of parents, school teachers, and school nurses regarding the barriers and facilitators to providing SRHE programs for adolescents in Middle Eastern countries, specifically Oman, is essential to
gaining first time baseline empirical data from all stakeholders of both genders in the development and provision of these programs. Such information is also vital in creating SRHE policy for the design, implementation, and sustainability of these programs in Muslim countries. In this literature review, the attitudes and beliefs of parents, school teachers, and school nurses regarding school-based SRHE programs in high, medium and low-income countries will be critically reviewed. The term “adolescents” in this document refers to individuals from 10 to 19 years of age (WHO, 2016).

1.2 Definition of Terms

Terms that are frequently used in this thesis are defined below. Other terms are defined as required throughout the thesis.

**Attitudes:** Feeling or reaction about something (Colman, 2015).

**Beliefs:** Faith or confidence in someone or something (Colman, 2015).

**A school-based sexual and reproductive health education (SRHE) program:** A program that provides complete, accurate, positive and developmentally appropriate information on sexuality, including abstinence, contraception, and STI prevention. It promotes the development of personal and interpersonal skills; and it includes parents as partners with school teachers (Kirby et al., 2011; Sexual Information and Education Council of the United States, 2018).

1.3 Aim of the Study

The aim of this study, underpinned by Social Cognitive Theory [SCT] (Bandura, 2001, 1997), was to examine the attitudes and beliefs of parents, school teachers, and school nurses regarding school-based SRHE programs in Oman. An explorative approach using a two-phase sequential mixed method design was used in order to develop a first-time baseline data regarding the barriers, facilitators and socio-cultural factors to the provision of these programs in Oman. It is intended that this study will help to inform policy and public health (education service) for the design and implementation of school-based SRHE programs in Oman and potentially other Muslim countries in the Middle East and North Africa (MENA) region. This will assist to improve
the sexual and reproductive health behaviours and quality of life of adolescents and support parents during adolescent development. This study is foundation for a report to the Oman MOE (the proximal key stakeholders were included). In the next phase, appropriate content of SRHE, would logically include a contribution by Omani adolescents.

1.4 Research Objectives

The overall objectives of this research study are:

1. Explore the attitudes and beliefs of male and female parents, male and female school teachers and female school nurses toward school-based SRHE programs in Oman.

2. Identify the facilitators and barriers to the provision of school-based SRHE programs in Oman.

3. Make recommendations to the Oman Department of Health and Department of Education for the design and implementation of school-based SRHE programs in Oman.

1.5 Research Questions

The research questions with respect to the Omani cultural context are:

1. What are Omani parents’ attitudes and beliefs regarding school-based SRHE programs in Oman?

2. What are the similarities and differences in the attitudes and beliefs regarding school-based SRHE programs between male and female parents in Oman?

3. What are the female school nurses’ attitudes and beliefs regarding school-based SRHE programs in Oman?

4. What are the school teachers’ (male and female) attitudes and beliefs regarding school-based SRHE programs in Oman?

5. What are the similarities and differences in the attitudes and beliefs regarding school-based SRHE programs between male and female school teachers in Oman?
6. What are the current facilitators and barriers to the provision of school-based SRHE programs in Oman?

7. What are the current Government policies to the provision of school-based SRHE programs in Oman?

1.6 Significance of the Study

School-based SRHE programs play an important role in reducing adolescents’ sexual risk behaviour and promoting health and well-being (Chin et al., 2012; Kirby et al., 2011; UNESCO, 2009, 2018; WHO Europe, 2010). Internationally, sexual activity among adolescents worldwide has been well documented (CDC, 2017a; Mitchell, 2014; WHO, 2018b). The assumption that Islamic adolescents in Middle Eastern countries are non-sexually active is incorrect and has contributed to the failure to meet the SRHE needs of young people (Farahani, Cleland, & Mehryar, 2011; Mohtasham et al., 2009; Vakilian, Mousavi, & Keramat, 2014). The modernisation of Middle East countries, the proliferation of social media use and higher education levels are associated with the increasing age of marriage and women’s participation in society, making adolescents more vulnerable to engage in premarital sex (Mosavi et al., 2014). In Oman, the mean age of marriage for women with a university education is 26 years compared with 17 years for those with no education or high school education (Roudi-Fahimi & El Feki, 2011). Moreover, adolescents’ exposure to mass media and advanced communication technology is a conduit of sexual information. In Oman (Jaffer et al., 2006; Oman Ministry of Health [MOH] & WHO, 2012), Iran (Mosavi et al., 2014), Kingdom of Saudi Arabia (KSA) (Alquaiz et al., 2012) and the United Arab Emirates (UAE) (UAE MOH & WHO, 2012), adolescents reported that they received most of their sexual and reproductive health information from their friends, social media and the Internet.

In Middle Eastern countries, in particular, Oman, school-based SRHE programs are culturally and socially sensitive programs that face various barriers to their implementation
In the last 40 years, Oman has undergone rapid development and modernisation, resulting in a large number of adolescents being exposed to social media and advanced communication technology (Oman National Center for Statistics and Information [NCSI], 2018). Whilst adolescents aged 10 to 19 account for approximately 50% of the total Omani population (Oman MOH & WHO, 2018; Oman NCSI, 2018), there are no comprehensive school-based SRHE programs or services. Most Omani adolescents report a lack of sexual and reproductive health knowledge including information about HIV, STIs and contraception. It has been found that most parents rarely talk to their children regarding sexual matters (Jaffer et al., 2006; Oman MOH & WHO, 2012). In Omani schools, the current SRHE curriculum is limited to covering the biological and anatomical aspects of the reproductive system (Oman Ministry of Education [MOE], 2018). Omani school nurses do not provide SRHE and their activities are limited to general health screening, vaccination, first aid, lectures related to the biology of HIV, smoking, unhealthy diet and physical inactivity (Oman MOH & WHO, 2018). Furthermore, viral hepatitis (strains A, B and C) is one of the most common communicable diseases in Oman and significant increases in HIV have been reported amongst young people aged 18 to 35 with around 100 new HIV cases reported annually since 2005 (Oman Department of Communicable Disease Surveillance and Control [Oman CDSC], 2018). This is considered a high rate for a small population, suggesting that Oman would benefit from immediate interventions focusing on high-risk sexual behaviours (Oman MOH & WHO, 2018, 2010).

Moreover, in the Middle East, studies regarding school-based SRHE programs, to date, have been mainly conducted in Iran (Merghati-Khoei et al., 2014; Mohammadi, Alikhani, Kalajabadi, & Bahonar, 2007; Latifnejad-Roudsari et al., 2013) using small sample sizes; a singular design; and, were limited to the attitudes and beliefs of mothers, female school teachers and female school nurses. What is needed is an extension of stakeholders’ fields of influence and
in-depth culturally-based methodologies. Exploring the attitudes and beliefs of parents, school teachers and healthcare providers regarding the necessity of providing SRHE programs for adolescents is essential to assessing the barriers and socio-cultural challenges to the provision of these programs. It is also vital to create a secondary school-based SRHE policy for the design and implementation of these programs in Muslim countries. Therefore, the aim of this study is to investigate the attitudes and beliefs of parents, school teachers, and school nurses towards school-based SRHE programs in Oman using a two-phase sequential mixed method design.

1.7 Theoretical Framework

The conceptual framework was based on SCT, an adaptation of the psychological model developed by Bandura (1977, 1997, 2001) with contemporary adaptations and utility well documented in school-based SRHE literature (Coyle et al., 2006; Dilorio, McCarty, & Denzmore, 2006).

1.8 Methodology and Data Collection

A mixed-method, two-phase sequential explorative descriptive comprising both quantitative and qualitative research methods design was applied in this study. In Phase one, three key stakeholder groups: parents (mothers and fathers of children studying in grades 7-9), school teachers (male and female teachers who teach students grades 7-9) and female school nurses were invited to participate in seven homogenous single-sex FGDs. There were between 5-9 persons in each group drawn from two public secondary schools—located in the district of Saham—from grades 5-10 (one boys’ school and one girls’ school) using the convenience sampling approach. Each FGD was guided by a pre-piloted set of semi-structured interview questions in Arabic language. Following on from the FGDs, six face-to-face in-depth IDIs were conducted three months later with two parents, three school teachers and one senior female school nurse—who were participants in the FGDs—to confirm some of the key focus group interview findings. In Phase one, the data was analysed using NVivo technology and a thematic analysis approach.
In Phase two, a convenience sample of 250 parents comprising of an equal number of mothers and fathers of children aged 12 to 14 (grades 7 to 9) was drawn from the same two public secondary schools that were used in Phase one (grades 5 to 10; one boys’ school and one girls’ school). Participants were invited through the school administration to complete a self-administered questionnaire in Arabic, the national language of Oman. Two of the fathers’ questionnaires were excluded due to incomplete completion. The response rate for the questionnaires was 95.6% (n = 125 mothers; n = 114 fathers). A statistical power analysis was performed to determine adequate sample size. In Phase two, the data was analysed using the Statistical Package for Social Sciences (SPSS) version 24.0.

1.9 Overview of Oman

Oman is an Islamic country (over 99% of the Omani population is Muslim) (Oman NCSI, 2018) located on the Arabian Peninsula in the Middle East - approximately 309,500 square kilometres in area, bordering KSA and the UAE in the west, the Republic of Yemen in the south, the Strait of Hormuz in the north and the Arabian Sea in the east. According to the 2018 census, the population is about 4.5 million, of which 2.5 million are Omanis and 2 million are non-Omani residents (Oman NCSI, 2018). Administratively, Oman is divided into 11 regions with 61 wilayats (districts) (Oman MOE, 2018; Oman MOH, 2008) (See Figure 1.1 Map of Oman below). Under the leadership of His Majesty Sultan Qaboos bin Said, Oman has a stable political, economic and social system with good relationships with neighbouring countries. Since 1970, with the introduction of a new leader, political and economic changes have resulted in rapid and significant positive changes in health, education and mortality rates over the past four decades (Oman MOE, 2018; Oman MOH & WHO, 2018, 2010).

In Oman, people in most regions—including the Saham district—share similar socioeconomic status being predominately middle class, with similar values, similar religious practises and share the same governmental facilities and services (Oman NCSI, 2018). Moreover,
Omani public schools have similar structures, facilities and services with school teachers qualified with an undergraduate degree in science (Oman MOE, 2018).


1.10 Education and Health System in Oman

Education became more available in all the public schools increasing from three public schools with 900 students in 1970 to 1,725 public schools with 748,308 students in 2017 [39% are classified as public secondary schools, grades 5 to 10] (Oman MOE, 2018; Oman NCSI, 2017). In Oman, adolescents aged 10–19 account for approximately 50% of the total Omani population (Oman MOH & WHO, 2010; Oman NCSI, 2018). In the last 35 years, Oman has undergone rapid
development and modernisation, resulting in a large number of adolescents being exposed to mass media and advanced communication technology (Oman NCSI, 2018). This, in turn, has made the potential for Omani adolescents to be more vulnerable to external influences. Therefore, Omani health and education organisations must recognise and plan policy and public health services that empower adolescents with sexual and reproductive health knowledge and provide them with a supportive environment.

The health system in Oman is government funded and covers both citizens and governmental or public sector expatriates. There are approximately 67 hospitals and 180 local health centres in Oman. The Ministry of Health (MOH) is the main healthcare provider and is responsible for ensuring the availability of health policies and plans and for monitoring their implementation (Oman MOH, 2008; Oman NCSI, 2018).

1.10.1 Sexual and Reproductive Health Education Curriculum in Omani Schools

To date, there are no comprehensive SRHE programs or services designed to meet the sexual and reproductive health needs that address the sexual health risks of adolescents in Oman (Oman MOH & WHO, 2018, 2015). Most of the current sexual health services focus on the needs of married couples (Jaffer & Afifi, 2005; Jaffer et al., 2006; Oman MOH, 2010). The current school curriculum covers only the biological and anatomical aspects of the reproductive system (Oman MOE, 2018; Oman MOH, 2010; Oman MOH & WHO, 2018). In 2006, the WHO commissioned guidelines that contended that a comprehensive school-based SRHE program must involve a lifelong process of acquiring knowledge and skills and developing attitudes, beliefs and values related to sexual health (WHO, 2006). Sexual and reproductive health education must encourage adolescents to develop positive decisions for sexual health and to deal with their identity, relationships and respect, intimacy, sexual development, reproductive health, interpersonal relationships, affection, body image and gender roles (UNESCO, 2018; WHO, 2018a, 2006). However, it has been widely acknowledged that, most school teachers in the Middle East lack the
sexual health knowledge and commination skills to provide students with sex education (Gańczak et al., 2007; Khadijeh, Khadijah, Zahra, & Hamideh, 2015; Oman MOH, 2010; Oman MOH & WHO, 2018).

1.11 School Nursing in Oman

In Oman, nursing school commenced in 2004, as part of the WHO’s health strategies for creating a healthy school environment. During the first five years (2004-2009), nursing school was established in only 19 schools. In 2011, the Oman MOH and Oman MOE established a five-year plan to employ a full-time school nurse in every public school (Oman MOH & WHO, 2013). Currently, in Oman, every public school has a full-time school nurse (Oman MOH & UNICEF, 2017). The School Health Department and the Oman MOH are accountable for providing school nurses with resources and planning. The Oman MOH also monitors and evaluates school nurses’ interventions and activities (Oman MOH & WHO, 2018, 2013). Omani school nurses hold a Diploma or Bachelor of Nursing with a background in paediatric or community nursing. The main objectives of school nursing programs were to: (1) create a safe, healthy and supportive school environment; (2) promote and empower the health and welfare of students; and (3) work in partnership with the local community and involve parents in health promotion (Oman MOH & WHO, 2018, 2013, 2010). Omani school nurses do not provide SRHE as their activities are limited to general health screening (eye, height, weight, blood pressure, and blood glucose check-up), vaccinations, first aid, lectures related to the biology of HIV, smoking, unhealthy diet and physical inactivity (Oman MOH & WHO, 2018, 2013, 2010).

Internationally, school nurses are key players in delivering school-based SRHE programs (Owen et al., 2010; UNESCO, 2018). However, in Middle Eastern and non-Middle Eastern countries, many school nurses face challenges and barriers in providing school-based SRHE programs, such as opposition from parents and school administrations and a lack of preparation, training, policy, and support (Farrag & Hayter, 2014; Piercy & Hayter, 2008; Richardson-Todd,
In Oman, there is no evidence regarding Omani school nurses’ attitudes and beliefs towards the provision of school-based SRHE programs. This study aims to address this gap and make suggestions for improving school nursing in Oman.

1.12 Summary and Thesis Structure

This structure provides an entrée into the total research project. This thesis is comprised of nine chapters. This chapter (Chapter 1) presents the background of the current research and provides insights into the remaining chapters in the thesis. The context of Oman—including education and health systems and school nursing—are presented, as well as the research questions and objectives. In addition, the significance of the study and a brief description on the methodology and the data collection process are outlined. Chapter 2 critically discusses the literature that is relevant to the research topic. A literature search strategy was adopted to critically identify and evaluate studies related to the attitudes, beliefs and barriers of parents, school teachers, and school nurses towards implementing school-based SRHE programs. Furthermore, this chapter provides a summary of the previous research and identifies the gaps in the literature for future research. It concludes with an explanation of the theoretical framework that underpins this study. Chapter 3 addresses the mixed-methodology of the current study design and provides justification for using a two-phase sequential explorative descriptive framework. It also provides a detailed description and rationale for the methods used to conduct this research, including the research setting, the sampling approach, justifications of participants’ inclusion and exclusion criteria, recruitment, data collection, instrumentations (development of interview guides and surveys), content validity and pilot study. The analysis plan, the rigour of Phase one and research ethics are also discussed. Chapter 4 presents the qualitative results from Phase one of this study, in which two FGDs were conducted with 15 parents. This chapter also presents the results of two IDIs with two parents who participated in the FGDs. These IDIs were used as an opportunity to cross-check and confirm the findings from the FGDs. This chapter presents the major themes and sub-themes that were
identified from the parents’ interviews. **Chapter 5** describes the results from Phase one of this study, in which four FGDs were conducted with 10 science school teachers and 10 Islamic school teachers. This chapter also describes the results of three IDIs with three school teachers who also participated in the FGDs. A major focus of the chapter is on the major themes and sub-themes that were identified from the school teachers’ interviews. **Chapter 6** presents the qualitative results from Phase one, which was conducted with five female school nurses. A major focus of the discussion is on the major themes and sub-themes that were identified from the nurses’ interviews. **Chapter 7** presents the results of Phase two, which involved a quantitative survey of 250 parents. It addresses—in detail—the demographic data of the study sample, the response rate, descriptive statistics and non-parametric tests as appropriate statistical tests. **Chapter 8** is the discussion chapter. It discusses, compares and contrasts the main findings of the two phases of the current study against the research questions. This chapter also discusses the findings from each phase in light of prior research. Further, this chapter critiques the theoretical framework applied in this study and then, it concludes by highlighting the limitations of the study. **Chapter 9** is the final chapter. It presents the study’s conclusions, strengths and recommendations for future research.
Chapter 2: Literature Review

2.1 Introduction

This chapter critically reviews the empirical literature that focuses on the SRHE programs within school settings. A literature search was conducted to critically identify and evaluate related studies that focused on the attitudes, beliefs, and barriers of parents, school nurses and school teachers towards implementing school-based SRHE programs. The majority of reviewed studies—including international and Middle Eastern studies—used a singular design (most were quantitative studies) and a small population sample of parents, school teachers, and school nurses. They were also limited in their scope because they only examined the attitudes and beliefs of female school teachers, female school nurses and mothers of school aged children. The international studies (non-Middle East) were conducted primarily in the USA, the UK, Canada, and Australia. The Middle Eastern studies were mainly localised to Iran. The studies included in the current literature are organised to consider the attitudes, beliefs, facilitators, and barriers towards implementing school-based SRHE programs. In addition, a process of study design, settings, key findings, and limitations are also reviewed.

2.2 Description of Literature Review Search Method/Search Strategy

A critical review of the literature on the attitudes, facilitators, and beliefs of parents, school teachers, and school nurses regarding school-based SRHE programs was conducted. Different reliable databases such as CINAHL, Medline, Web of Science and PubMed were used to search for research articles. The following keywords were used to retrieve relevant articles: “school”, “sex education”, “HIV”, “STIs”, “curriculum”, “parents”, “school nurses”, “teachers”, “adolescents”, “young people”, “reproductive health”, “Middle East”, “Islam”, “parents’ perception”, “parents’ attitudes”, “nurses’ perception” and “nurses’ attitudes”. The initial search
returned around 1,618 articles. Articles fulfilling the following criteria were selected: adult and adolescent population, English language and full text (1990–2018). Based on these criteria, the literature search yielded 574 articles. Furthermore, these articles were critically reviewed and studies that examined the attitudes and beliefs of only parents, school nurses, teachers and students towards sex education in school were selected. Around 143 relevant articles were used including 40 qualitative studies, 75 quantitative studies, 6 mixed-method design studies, 13 randomised controlled trials (RCTs) and 9 systematic review studies (See Figure 2.1).

Figure 2.1 Search Strategy

In this research, the integrated literature review revealed eight dominant themes: (1) effectiveness of school-based SRHE programs; (2) prevalence of STIs, HIV and teenage
pregnancy; (3) sexual and reproductive health knowledge, attitudes and behaviours of adolescents in the Middle East; (4) Islamic sexual and reproductive health beliefs and practices; (5) international (non-Middle East) attitudes and beliefs of parents towards school-based SRHE programs; (6) international (non-Middle East) attitudes and beliefs of school teachers towards school-based SRHE programs; (7) international (non-Middle East) attitudes and beliefs of school nurses towards school-based SRHE programs; and (8) attitudes and beliefs of parents, school teachers, and school nurses towards school-based SRHE programs in the Middle East.

2.3 Effectiveness of School-Based SRHE Programs

2.3.1 Aims and Content of School-Based SRHE Programs

The goal of a school-based SRHE program is to facilitate positive sexual and reproductive health among adolescents. The provision of accurate and age-appropriate information about sexual and reproductive health, to enable informed responsible decision-making and improve sexual communication between parents and adolescents is essential (Kirby et al., 2011; UNESCO, 2018; WHO, 2018a, 2006). The central aim of a SRHE program is to extend beyond HIV and STIs prevention, to develop healthy and safe sexual behaviours and to understand the sexual behaviours of others (Kirby et al., 2011; UNESCO, 2018). According to the WHO guidelines (2006, 2015), school-based SRHE programs are considered to be a life-long process of obtaining and developing positive attitudes, beliefs, and values regarding identity, relationships and intimacy. It covers biological, socio-cultural, psychological and spiritual dimensions of adolescent sexual health, including sexual development, puberty, the prevention of STIs, HIV and teenage pregnancy, effective contraceptive methods, interpersonal relationships, affection, intimacy, body image and gender roles and various sexual behaviours. These guidelines were similarly reported by UNESCO (2018), the Public Health Agency of Canada (2008), Sexual Information and Education Council of the United States (2018), the CDC (2018a) and the United Nations Population Fund (UNFPA)
For example, according to the UNFPA (2014) operational guidance for a comprehensive SRHE program is defined:

*as a right-based and gender-focused approach to sexuality education, whether in school or out of school. Comprehensive sexuality education is curriculum-based education that aims to equip children and young people with the knowledge, skills, attitudes, and values that will enable them to develop a positive view of their sexuality, in the context of their emotional and social development* (p. 7).

These guidelines take a comprehensive view of SRHE, going beyond the traditional focus on prevention of HIV, pregnancy and STIs by providing adolescents with accurate information about sexuality, health and human rights, preparing them to develop positive beliefs and attitudes regarding their sexual and reproductive health and self-esteem, respect for human rights and gender equality (UNFPA, 2014, UNESCO, 2018).

Sexual and reproductive health education is recommended to be introduced in schools to coincide with critical periods of adolescent development (Kirby et al., 2011; UNESCO, 2018 WHO, 2006). Adolescence is the time of acquiring of knowledge and skills and gaining an identity that is associated with many biological, cognitive and social changes. In this period, adolescents learn how to deal with their sexual feelings and to make sexual health related decisions as well as avoid sexual health risks (Kirby et al., 2011; Public Health Agency of Canada, 2008). Uncertainty about identity during an adolescents’ physical and sexual development can be associated with stress, anxiety and role confusion (CDC, 2013). Erickson’s theory highlights the role of the school in assessing adolescents with their sexual identity development (Brunner & Smeltzer, 2010). Furthermore, adolescents’ sexual behaviours are influenced by their interaction with friends and the culture that surrounds them as well as mass media, which could include positive, negative, ambiguous or confusing information (Gańczak et al., 2007). The documented mixed messages
adolescents receive from their peers, families and the Internet regarding sexual matters indicates that SRHE programs should be established in academic institutions such as schools to provide adolescents with accurate information and skills that can assist them with their sexual development (UNESCO, 2018).

2.3.2 The Role of School-Based SRHE Programs in Prompting Safe Sexual and Reproductive Health Behaviours among Adolescents

The academic success of adolescents is critically dependent on their health behaviours (CDC, 2013, 2017b; Vinciullo & Bradley, 2009). Sexual risk behaviours such as unprotected sex, teenage pregnancy, and STIs can affect adolescents' school attendance and achievement and is also associated with stress, anxiety, psychological problems and academic failure (CDC, 2017b; Spriggs & Tucker-Halpern, 2006; Vinciullo & Bradley, 2009; WHO, 2018b). For example, in the USA, teen pregnancies are associated with high school dropout rates among adolescent girls aged 15-19. Only 50% of these teen mothers complete high school, compared to 90% of girls who have not given birth during adolescence (CDC, 2017b). All the studies (n = 14 studies including eight systematic reviews and six RCTs that were reviewed contended that SRHE programs in secondary schools had a critical role in promoting safe sexual health behaviour and preventing STIs, HIV and unintended pregnancies among adolescents.

The school is considered an ideal setting for the dissemination and acquisition of information about HIV and STIs and the provision of education that help adolescents gain developmentally appropriate sexual health knowledge and skills (Kirby et al., 2011; Public Health Agency of Canada, 2008). Several studies have shown that school-based SRHE programs are effective in decreasing the high rate of HIV, STIs and teen pregnancy among adolescents and in promoting health and well-being. For example, in the USA, the teen birth rate per 1000 adolescent girl aged 15-19 has decreased significantly from 41 in 2009 to 22.3 in 2015 as a result of school-based SRHE programs (CDC, 2017b). Evidence proposes these decreases are due to more
adolescents abstaining from sexual activity and more adolescents who are sexually active using condoms and contraceptive methods than in previous years (Lindberg, Santelli, & Desai, 2016; Santelli, Lindberg, Finer, & Singh, 2007). Moreover, Kirby et al. (2007) conducted a systematic review of 83 studies to evaluate the effectiveness of school-based SRHE programs, which were implemented among adolescents under 25 from high income countries (the USA, Canada, Netherlands, Norway Spain and the UK) and medium and low-income countries (Belize, Brazil, Chile, Jamaica, Kenya, Mexico, Namibia, Nigeria, South Africa, Tanzania, Thailand and Zambia). The study showed that more than two thirds of these programs were effective in increasing knowledge of HIV and STIs, delaying the initiation of sex (sexual abstinence), decreasing the frequency of sex and the number of sexual partners, improving parent-adolescents’ sexual communication and increasing self-efficacy to refuse sex, to use condoms and to avoid risk. Moreover, the results showed that none of these programs hastened or increased sexual behaviours. These programs were effective for both male and female adolescents of different communities and cultures, including rural and urban areas. More importantly, around 90% of studies reported that school teachers and school nurses were used to conducting school-based SRHE programs, they were all provided with SRHE training and the programs involved parents in the program development. However, around 60 other studies were conducted in the USA and 18 studies were only conducted in medium and low-income countries. None of the studies examined the effectiveness of these programs in Middle Eastern countries. Further research is needed to examine the implementation and effectiveness of these programs among adolescents of different cultures. Similar findings to those of Kirby et al. (2007) were also supported in other systematic reviews (Chin et al., 2012; Kirby & Laris, 2009; Kirby & Lori, 2005; Shepherd et al., 2010; UNESCO, 2018) and other RCT studies (Kirby et al., 2011; Markham et al., 2012), indicating the critical role of school-based SRHE programs in improving adolescents’ sexual and reproductive health.
behaviours. Nevertheless, none of these reviews and RCT studies examined the effectiveness of these programs in Middle Eastern countries. In addition, several Western scholars from the fields of public health and paediatrics have reported that the absence of formalised SRHE among adolescents can negatively affect their healthy psychosexual development and lead to inappropriate sexual behaviours (Andrade et al., 2009; Asekun-Olarinmoye, Dairo, Abodurin, & Asekun-Olarinmoye, 2011; Atienzo, Walker, Campero, Lamadrid-Figueroa, & Gutierrez, 2009).

2.3.3 The Role of School-Based SRHE Programs in Preventing Child Sexual Abuse

Child sexual abuse is a global and serious public health issue (CDC, 2017c; WHO, 2017b). In 2017, 26% of children worldwide (8% boys and 18% of girls) reported that they had suffered from sexual abuse (WHO, 2017b). Evidence shows that school-based SRHE programs are significantly associated with the prevention of child sexual abuse (Chin et al., 2012; CDC, 2017c; Kirby et al., 2011; UNESCO, 2018, 2009; WHO, 2017b). According to the WHO guidelines (2017b), child sexual abuse can include sexual contact or exposure to sexual acts or materials. It is defined as:

“...the involvement of a child in sexual activity that he or she does not fully comprehend is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society” (p. 15).

Likewise, according to the CDC guidelines (2017c) of “Preventing Child Abuse and Neglect: A Technical Package for Policy, Norm, and Programmatic Activities”, child sexual abuse is defined as:

“Sexual abuse involves pressuring or forcing a child to engage in sexual acts. It includes behaviours such as fondling, penetration, and exposing a child to other sexual activities” (p. 1).
Children who are sexually abused may suffer immediate physical injuries as well as emotional and psychological problems, such as impaired socio-emotional skills, depression, anxiety and learning, attention, and memory difficulties (CDC, 2017c; WHO, 2017b). In addition, exposure to sexual abuse in childhood increases the risk of STIs, high-risk sexual behaviours, unintended pregnancies, harmful use of tobacco, drugs and alcohol, delayed brain development, reproductive health problems, lower educational attainment, and limited employment opportunities (CDC, 2017c; WHO, 2017b). Evidence—including systematic reviews and meta-analyses—strongly recommend that SRHE about personal safety should be covered in school curriculums in order to prevent child sexual abuse and encourage children to report if they are sexually abused (CDC, 2017c; Walsh, Zwi, Woolfenden, & Shlonsky, 2018; WHO, 2017b).

2.3.4 Parent-Adolescent Sexual Communication

The sexuality of adolescents is strongly dependent on their relationship with their parents. Evidence from American studies clearly show that parental sexual communication with adolescents plays a significant role in reducing adolescents’ sexual risk-taking (Clawson & Reese-Weber, 2003; Grossman, Frye, Charmaraman, & Erkut, 2013; Grossman et al., 2014; Haglund & Fehring, 2010; Schuster et al., 2008). For example, in the USA, Grossman et al. (2013) conducted a mixed-methods study to assess the role of parent-adolescent communication in delaying sexual initiation among 706 students from grade 6-7 using both survey and IDIs. The study showed that adolescents who communicated with their parents regarding sexual matters developed healthy sexual attitudes and behaviours and were less likely to have vaginal intercourse. In Australia, studies also report similar findings. Studies show that Australian adolescents who have good sexual communication with their parents are less likely to engage in risky sexual behaviour than adolescents who do not have such sexual communication (Marie Stopes International, 2008; Moore & Rosenthal, 2006).
2.3.4.1 The Barriers of Parent-Adolescent Sexual Communication

Although, evidence indicates that adolescents trust that their parents will be more likely to give them accurate and good advice (Bankole, Biddlecom, Singh, Guiella, & Zulu, 2007), several studies have reported that parents lack the knowledge, skills, comfort and confidence regarding sexual health and relationships, reproduction, contraception, teenage pregnancy, HIV and STIs to conduct conversations with their adolescent children on such concerns (Guilamo-Ramos, Jaccard, Dittus, & Collins, 2008; Pluhar, Dilorio, & McCarty, 2008; Wamoyi, Fenwick, Urassa, Zaba, & Stones, 2010; Wilson & Koo, 2010). The authors of these studies strongly recommended that school-based SRHE programs should be established to prepare and improve parent-adolescent sexual communication. For example, in Thailand, a qualitative study (Sridawruang et al., 2010) using FGDs was conducted among 30 parents to explore their attitudes and barriers towards sexual communications with their adolescents. The findings indicated that most Thai parents had not communicated or provided any SRHE to their adolescents. Five themes emerged from the study’s thematic analysis: 1) “restrictions imposed by traditional Thai culture”; 2) “sex education is not a parental duty”; 3) “parental limitations” (lack of sexual health skills and knowledge); 4) “the generation gap”; and 5) “better not bring it up” (children were still too young/not yet ready to educate them about sex). The findings of this study clearly reveal that barriers such as culture, society, values, personal beliefs and lack of SRHE training play an important role in restricting parent-adolescents sexual discussion. The study recommended that sex education policies should be changed to empower parents by providing them with SRHE training in order for them to take part in educating and communicating with their adolescents regarding sexual issues.

In Tanzania, Wamoyi et al. (2010) conducted ethnographic research to explore parent-adolescent sexual communication. Data collection included eight weeks of participant observation, 17 FGDs, and 46 in-depth IDIs. An analysis of the data showed that parent-adolescent sexual
communication was mainly on a same sex basis (mother-daughter and father-son) and took the form of warnings, threats and physical punishment. Additionally, parents reported that their sexual communication with their adolescents was only initiated by parents when noticing something they believed to be bad and that they would not want their adolescents to engage in. Moreover, parents stated that their sexual communication with their adolescents was restricted because of cultural, personal beliefs, shyness and lack of appropriate sexual health knowledge and skills. For example, most parents indicated that in their culture, sexual discussion was secretive and taboo. Some parents—especially mothers—reported that they had never seen or used condoms and some parents held the view that communicating with their adolescents about condom use may encourage sexual activity. Nevertheless, most parents supported implementing school-based SRHE programs and indicated the need for SRHE training in order to improve their sexual communication with their adolescents. Likewise, in Ireland, Hyde et al. (2013) found similar results to the study of Wamoyi et al. (2010) and Sridawruang et al. (2010) regarding the barriers of parent-adolescent sexual communication. Their qualitative study was conducted among 43 parents and showed that only a minority of parents discussed sexual issues, such as contraception and condom use with their adolescents. Many parents believed that their child was not sexually active and had expressed concern that discussing contraception and condom with adolescents might encourage sexual activity.

In Uganda, Muhwezi et al. (2015) conducted a qualitative study to examine parents’ perceptions towards SRHE and barriers associated with parent-adolescent sexual communication. This study was part of a larger project titled: “Promoting sexual and reproductive health among adolescents in Southern and Eastern Africa (PREPARE)”. Eleven FGDs and ten IDIs were conducted among parents from two urban and two rural secondary schools. The results indicated that parents recognised the value of parent-adolescent sexual communication in improving
adolescents’ sexual health behaviours. However, they found that many participating parents had not discussed sexual issues with their adolescents due to a lack of age-appropriate sexual health knowledge and taboo. They considered friends, the Internet, and the media as the main sources of sexual information for adolescents. The study also indicated that parents were comfortable discussing sexual matters with off-spring of the same gender. These findings were consistent with previous studies conducted in Uganda (Bastien, Kajula, & Muhwezi, 2011; Kibombo, Neema, Moore, & Humera, 2008), Tanzania (Namisi et al., 2009) and South Africa (Phetla et al., 2008).

2.3.4.2 The Role of School-Based SRHE Programs in Improving Parents-Adolescent Sexual Communication

With respect to parents, school-based SRHE programs have been shown to be effective in improving their communication, competence, knowledge, and skills related to sexual and reproductive health matters. In the USA, Klein et al. (2005) examined the effectiveness of school-based SRHE programs in improving parent-adolescent sexual communication including their confidence, competence, and comfort. More than 300 parents attended four to five SRHE workshops and completed written pre and post workshop surveys with a follow-up telephone survey. The findings revealed that SRHE workshops increased parents’ comfort towards sexual discussion with their adolescents. Most parents (70%) had reported that the SRHE workshop assisted them to initiate sexual conversations with their adolescents on a variety of sexual topics such as STIs, HIV, teenage pregnancies, contraception, and sexual relationship. This result was consistent with a current study conducted in the USA by Grossman et al. (2014) and in the UK by Turnbull et al. (2008).
2.4 Prevalence of STIs, HIV and Teenage Pregnancy

2.4.1 STIs

Sexually transmitted infections (STIs) are one of the most common health problems facing adolescents internationally. Every year, more than 300 million new cases of STIs occur worldwide among young people aged 15–24, causing serious complications such as infertility, pelvic inflammatory disease, ectopic pregnancy, prostatitis and urethritis (CDC, 2017a; WHO, 2013, 2005). In 2008, the number of estimated cases of STIs in Africa, America, Europe, and the Mediterranean were 93 million, 126 million, 47 million and 26 million, respectively (WHO, 2012). In addition, more than 290 million women have human papillomavirus (HPV) infection (WHO, 2013). Human papillomavirus is a common STI and is the greatest risk factor for the development of cervical cancer. Globally, over 70% of all cervical cancers are caused by HPV types 16 and 18 (Schiffman, Castle, Jeronim, Rodrigue, & Wacholde, 2007). In fact, cervical cancer is the second most common cancer in women worldwide and is the most common cause of death in medium and low-income countries. Every year around 500,000 women are diagnosed with cervical cancer and 300,000 deaths are attributed to the disease globally (Ferlay et al., 2010). Furthermore, HPV types 6 and 11 are responsible for over 90% of genital warts cases (Ball et al., 2011). It can even cause other diseases, such as anal, penile, vulvar and oropharyngeal cancer (Dunne & Markowitz, 2006) and it is transmitted through unprotected sexual contact and skin to skin contact. However, most people infected with STIs are asymptomatic and remain undiagnosed, which increases the risk of spreading the infection to others (Ramet, van Esso, & Meszner, 2011; WHO, 2004).

In the Middle East and North Africa, most cases of STIs are reported among adolescents (The World Bank, 2010). In Oman, a nationally representative health survey conducted in 2000 among non-pregnant women aged 15–49 showed that around 30% of the participants had an STI, with younger women two times more likely than older women to have an STI (Mabry, Riyami, & Morsi, 2007). These results are consistent with those of studies conducted in Egypt, Morocco,
Kuwait, and Iran, which indicate that most cases of STI occur among young people under 25 (The World Bank, 2010). In Oman, Viral hepatitis (types A, B, and C) is considered one of the most common communicable diseases (Oman CDSC, 2018; Oman MOH & WHO, 2010). Around 1500 cases of viral hepatitis were reported annually from 2001 to 2012 (Oman CDSC, 2012).

2.4.2 HIV

In 2013, there were 35 million people living with HIV worldwide. In the same year, 2.1 million people became infected with HIV and around 1.5 million people died from AIDS-related causes (UNAIDS, 2014). Human immunodeficiency virus is becoming a serious concern in the MENA region. In 2013, around 300,000 people were living with HIV in the MENA region. More than half of the HIV infections occurred among young people aged 15–24 (UNAIDS, 2014). In the same year, there were around 30,000 new HIV infections and 15,000 deaths from AIDS-related causes in the MENA region. The number of new HIV infections has increased by 52% and AIDS-related deaths have increased by 66% between 2005 and 2013 in the MENA region (UNAIDS, 2014). Now the burden is that the HIV disease has changed from being an acute condition to a to chronic one with low coverage rates of antiretroviral treatments (11%) in the region (UNAIDS, 2013).

In Oman, the number of reported HIV/AIDS cases has increased significantly since the first case was reported in 1984. Since 2005, around 100 new HIV cases have been reported annually, a high rate for a small population. This suggests that Oman will move towards a concentrated HIV epidemic situation soon if interventions focusing on high-risk behaviours are not put into place quickly (Oman AIDS Organisation, 2018; Oman CDSC, 2018, 2012; Oman MOH & WHO, 2010). In 2011, there were 1,250 people living with HIV in Oman. More than 70% of those living with HIV were males and over 50% were between 20–35. Heterosexual and homosexual transmissions are the most common (over 70%) modes of transmission of HIV/AIDS in Oman. The other modes of transmission, such as mother-to-child, blood transfusion and
injecting drug users, are rare (Oman AIDS Organisation, 2018; Oman CDSC 2018, 2012; Oman MOH, 2010). Similar findings were reported in an 18-year HIV surveillance study in the Kingdom of Saudi Arabia (KSA). Around 6046 HIV cases were identified, of which 1285 (21.3%) cases were Saudi citizens. The study found that 75% of HIV infections occurred in young people aged 20–40; 70% of the cases were male; and around 50% were transmitted through heterosexual and homosexual modes (Madani, Al Mazrou, Al-Jeffri, & Al Huzaim, 2004). Likewise, in Iran, most HIV cases are transmitted through sexual relationships (Mohtasham et al., 2009). The first case of HIV was reported in 1987, followed by a rapid increase in the number of cases. In 2014, there were 74,000 people living with HIV in Iran and 50% of HIV cases occurred among young adolescents aged 15-24 (UNAID, 2014). The aforementioned studies regarding the prevalence of HIV and STIs in the Middle East, including Oman, indicate the necessity of designing and implementing school-based SRHE programs for adolescents in this region in order provide them with appropriate sexual health information and reduce the risk of acquiring and transmitting HIV and other STIs.

2.4.3 Teenage Pregnancy

Internationally, many adolescent girls experience teenage pregnancy as a consequence of unprotected sex due to lack of school-based SRHE programs (CDC, 2017b; WHO, 2018b). Every year, around 16 million adolescent girls aged 15-19 give birth and around three million of them undergo unsafe abortions worldwide. Over 95% of teenage pregnancy occurs in medium and low-income countries (WHO, 2018b). Complications of teenage pregnancy are considered the second leading cause of death among adolescents’ girls aged 15-19 globally (WHO, 2018b). Moreover, teenage pregnancy causes emotional, economic, social and psychological problems for adolescent girls and their families because births are often unintended and unwanted (CDC, 2017b; WHO, 2018b). Many adolescent girls who become pregnant have to drop out of school and have less opportunity to find a job (CDC, 2017a).
2.4.3.1 Prevalence of Teenage Pregnancy in the USA, UK, Canada, and Australia

The USA teen pregnancy rate is substantially higher than in other western industrialised nations (Sedgh, Finer, Bankole, Eilers, & Singh, 2015). In 2015, approximately 229,715 babies were born in the USA to adolescent girls aged 15–19, for a birth rate of 22.3 per 1,000 adolescent girls in this age group (CDC, 2017b). Studies conducted in the USA showed that around 70% of high school adolescents had engaged in sexual intercourse by grade 12 (Lindau, Tetteh, Kasza, & Gilliam, 2008). Furthermore, another USA study conducted among 1000 adolescents from grades 10 to 11 showed that 75% of male adolescents and 55% of female adolescents had engaged in sexual intercourse and only 30 adolescents had used contraceptive methods, such as condoms (Hacker, Amare, Strunk, & Horst, 2000). These findings were consistent with another American study (Halpern-Felsher, Cornell, Kropp, & Tschann, 2005).

In the UK, the teen birth rate per 1,000 adolescent girls aged 15-19 has decreased significantly from 25 in 2009 to 14.5 in 2015 as result of implementing school-based SRHE programs (McKay & Barrett, 2010; Office for National Statistics, 2015). Likewise, in Canada and Australia, the provision of school-based SRHE programs and the availability of contraceptive methods at school were associated with significant reductions of teenage pregnancies (Better Health Channel, 2015). In Canada, the teen birth rate per 1,000 adolescent girls aged 15-19 has decreased significantly from 26 in 1996 to 14 in 2009 (McKay & Barrett, 2010; Statistics Canada, 2009). In Australia, the teen birth rate per 1,000 adolescent girls aged 15-19 has also decreased in the last 20 years from 55 in 1971 to 14 in 2013 (Better Health Channel, 2015).

2.4.3.2 Prevalence of Teenage Pregnancy in the Middle East

In the Middle East, adolescent girls aged 15-19, regardless of their marital status account for approximately 60% of all unintended pregnancies (Roudi-Fahimi & El Feki, 2011). According to the United Nations Statistics Division (2009), the teen birth rate per 1000 adolescent girls aged 15-19 is still high in Middle Eastern countries especially in Egypt and Morocco. In 2009, the
teenage birth rate per 1000 adolescent girls was 32 in Egypt, 28 in Morocco, 20 in Pakistan, 16 in Qatar, 14 in Kuwait and 6 in Tunisia (United Nations Statistics Division, 2009). In many Middle Eastern countries, including Oman, UAE, Yemen and Egypt, early marriage before the age of 18 is common and socially acceptable with most married girls becoming pregnant within the first year of marriage (Population Reference Bureau, 2009). For example, in Oman, around 30% of married women have their first pregnancy before the age of 18 (WHO, 2007). Furthermore, a study was conducted to examine the prevalence of teenage pregnancy among Omani married girls aged 14-19. The study indicated that teenage pregnancy is common and associated with anaemia, bleeding, preterm baby and low birth weight. The study recommended a need for school-based SRHE programs to educate adolescents about contraception in order to decrease the number of teenage pregnancies. However, the results of this study are limited to one hospital and further studies are needed (Haddabi et al., 2014).

In Middle Eastern countries, pregnancies that occur outside of conventional marriages are considered illegal and socially unacceptable (Roudi-Fahimi & El Feki, 2011; WHO, 2011). Hence, in the Middle East, adolescent girls who are unmarried and sexually active are at higher risk for unintended teenage pregnancies and intended abortions (Roudi-Fahimi & El Feki, 2011; WHO, 2011). Data on these pregnancies are often scarce and not recorded in Middle Eastern countries, including Oman, because many adolescent girls are afraid to seek sexual and reproductive health services (Roudi-Fahimi & El Feki, 2011; WHO, 2011). In the MENA region, over 60% of adolescent girls live in countries (Oman, Egypt, Iran, Iraq, Lebanon, Libya, Palestinian, Qatar, Syria, Saudi Arabia, United Arab Emirates, and Yemen), where abortion is prohibited except to save the mother’s life; 23% of adolescent girls live in countries (Algeria, Bahrain, Jordan, Kuwait, and Morocco), where abortion is accepted only to preserve woman’s physical and mental health; and only 17% of adolescent girls live in countries (Tunisia and Turkey), where abortion is legal
(Roudi-Fahimi & El Feki, 2011). However, in countries where access to legal abortion is limited, adolescent girls are more likely to have unsafe abortions that often lead to injury or death (Roudi-Fahimi & El Feki, 2011; WHO, 2011).

2.5 Sexual and Reproductive Health Knowledge, Attitudes and Behaviours of Adolescents in the Middle East

In Middle Eastern countries, most adolescents lack knowledge on HIV/AIDS, STIs and other sexual health matters. The International Conference on Population and Development held in Cairo in 1994 and the Fourth International Conference on Women in Beijing in 1995 confirmed the rights of adolescents to receive SRHE (Senderowitz, 2000).

2.5.1 Lack of SRHE among Adolescents in Oman

In Oman, Jaffer et al. (2006) conducted the first nationally representative secondary school–based survey (titled: “Knowledge, attitudes and practices of secondary-school pupils in Oman: Reproductive health”) to examine the sexual and reproductive health knowledge, attitudes and behaviour of Omani adolescents. The study was considered the largest adolescent sexual and reproductive health survey conducted by Oman MOH in collaboration with the WHO and the United Nations Children’s Fund (UNICEF). The schools were randomly selected from all regions of Oman. In Oman, around 90% of the adolescent population is enrolled in school (Oman NCSI, 2018). Thus, this study was considered as an important representative survey and provided a baseline data for decision makers to design policies and programs to improve adolescent sexual and reproductive health (Jaffer et al., 2006). The study used a multi-stage stratified random sample of 1,670 boys and 1,675 girls from schools of all regions in Oman. The students were asked about puberty, HIV/AIDS, STIs, marriage, and contraception using self-administered questionnaires. Although 90% of the participants were above 16 years old, only 50% of the adolescents were able to identify some noticeable physiological changes accompanying puberty among their own sex and over 70% were unaware of the puberty changes of the opposite sex. Moreover, the study
showed that 65% of adolescents obtained their sexual and reproductive health information mainly from their friends and the Internet.

With respect to the ideal age for marriage, Jaffer et al. (2006) found that the boys’ mean ideal age for marriage was 19; for the girls, the mean ideal age for marriage was 21. The average number of children preferred by both genders was five; around 45% of the boys were interested in having more than six children (Jaffer et al., 2006). Similar findings were reported in the 1995 Oman Family Health Survey (Sulaiman, Riyami, Farid, & Ebrahim, 2001) and in a 2000 nationally representative health survey (Al-Riyami, Afifi, Al-Kharusi, & Morsi, 2002; Mabry et al., 2007). In addition, regarding the use of contraceptive methods, Jaffer et al. (2006) found that most boys and girls (67% and 71%, respectively) were willing to use modern contraceptive methods in the future. However, 85% of adolescents lacked the knowledge regarding contraception and the fertility period. Similar results were also reported in another Omani study conducted by Al Riyami, Afifi and Mabrey (2004).

Additionally, in the study by Jaffer et al. (2006), the findings also showed that the majority of adolescents had poor knowledge of HIV/AIDS and STIs and identified incorrect methods of STI transmission, such as hand shaking and kissing. These results were consistent with those of a nationally representative survey, which was conducted in 2008 among students from 32 universities. The study showed that only 3.9% of the students, with a mean age of 20, correctly answered questions related to HIV/AIDS and STIs (Oman MOH, 2010). Although the study of Jaffer et al. (2006) was considered an important adolescent sexual and reproductive health survey, it had some limitations. First, the survey questions were superficial and mainly focused on investigating the knowledge of adolescents on puberty, HIV/AIDS, STIs, and contraceptive methods. It did not cover the WHO guidelines of assessing adolescents’ sexual risk behaviours, such as a history of premarital sex and safe sex practice (condom use) (Ingham & Stone, 2002).
addition, the findings of this study cannot be generalised to all adolescents in Oman as they were only limited to the attitudes and beliefs of secondary school students aged 16 years and above. Finally, the survey is over 10 years old and therefore the results are dated. There are some current changes in the adolescents’ sexual and reproductive behaviours that were not included in this study. Despite these limitations, the study provided insights and indications to improve the sexual and reproductive health knowledge of Omani adolescents. The authors of this study strongly recommended that preparatory actions should be undertaken by exploring the attitudes and beliefs of parents, school teachers, and school nurses towards school-based SRHE programs.

In 2003, the WHO developed a survey titled “Global School-Based Student Health Survey” (GSHS) and recommended that this survey be used by researchers for the purpose of developing priorities and policies, establishing programs and advocating for resources to improve adolescents’ health. The survey examined risky behaviours and protective factors including behaviours related to dietary, hygiene, physical activity, violence, HIV and STIs (WHO, 2017a). In Oman, a survey (titled: the 2005 Oman Global School-Based Student Health Survey”) was conducted among a nationally representative sample of 3,000 students aged 13–15 (from grade 7-10) using a WHO GSHS in collaboration with the WHO, UNAIDS, UNESCO, UNICEF, and the CDC. The results showed that participants had poor knowledge of HIV and STIs and only half of them were taught about HIV and STIs in school (Oman MOH & WHO, 2005). Interestingly similar results were reported in the 2010 Oman GSHS (Oman MOH & WHO, 2012) and the 2015 Oman GSHS (Oman MOH & WHO, 2015). Although, the WHO GSHS includes many questions related to adolescents’ risky sexual behaviours, the 2015, 2010 and 2005 Oman GSHS included only five questions related to adolescents’ sexual behaviours and these focused mainly on knowledge of HIV and STIs. They covered more questions related to adolescents’ dietary and physical activity. Nevertheless, the 2015, 2010 and 2005 Oman GSHS provided a base of a surveillance system for
risk behaviours and protective factors among adolescents in school. The 2015, 2010 and 2005 Oman GSHS reported some of the recommendations to improve adolescent health as follows:

- The GHSH should be conducted every 5 years.
- School health education programs should be evaluated and modified.
- Further study regarding the attitudes and beliefs of parents, school teachers, and school nurses towards the introduction of school-based SRHE programs should be conducted (Oman MOH & WHO, 2012).

The aforementioned Omani studies clearly indicate a strong need to establish a national committee involving health and education organisations to improve adolescents’ sexual and reproductive health knowledge and quality of life through school-based SRHE programs. However, according to the Oman health information system report, school-based SRHE studies in Oman only surveyed adolescents (Oman MOH, 2008). The international studies conducted in the USA (Barr et al., 2014; Bleakley et al., 2006; Borawski et al., 2015), Canada (McKay et al., 2014), the UK (Turnbull et al., 2008), Australia (Department of Health, Western Australia, 2008; Milton, 2003) stressed the importance of including parents, school nurses and school teachers particularly in a belief-based country such as Oman in order to effectively develop and implement school-based SRHE programs. This highlights the importance of further research to understand the attitudes and beliefs of parents, school teachers’ and school nurses’ towards school-based SRHE programs in Oman to provide an initial baseline data for developing and implementing these programs and thereby improving sexual and reproductive health of adolescents (Jaffer et al., 2006; Oman MOH, 2008; Oman MOH & WHO, 2012).
2.5.2 Lack of SRHE among Adolescents in the United Arab Emirates and the Kingdom of Saudi Arabia

In the UAE, a country with a similar culture, religion, and values as Oman, Gańczak et al. (2007) conducted the first cross-sectional survey to assess the sexual and reproductive health knowledge and attitudes of adolescents and the need for SRHE. A random sample of 119 male and 149 female adolescents with a mean age of 18 was assessed using a WHO self-administered questionnaire. Their results were consistent with those of Jaffer et al. (2006). The results showed that both genders had poor knowledge regarding HIV and STIs. Nearly all the participants (96%) agreed that SRHE should be provided for adolescents, with schools and health professionals as the preferred sources. Over 57% of the participants said that the school curriculum provided insufficient SRHE and 90% of the participants obtained their sexual information from friends, the media and the Internet. This study provides strong evidence for the need to implement school-based SRHE programs and address the adolescent sexual health needs in the UAE. However, the results of this study cannot be generalised to all adolescents in the UAE because the study used a small sample size and included only first-year undergraduate students from one national university in the UAE.

In the KSA, Alquaiz et al. (2012) conducted the first cross-sectional survey to examine the sexual and reproductive health knowledge and attitudes of female adolescents. The study recruited a random sample of 417 female adolescents aged 11–21 from four private and public schools. It included both secondary and high school students and used a self-administered questionnaire. The results were akin to those of Jaffer et al. (2006). Alquaiz et al. (2012) found that around 40% of the students were unaware of anatomical and physiological puberty changes before they reached puberty. More than 70% of the students lacked knowledge about HIV and STIs. The study showed that the students were more comfortable discussing sexual matters with their friends (42%) and house-maids (18%) than with their parents (15%). Over 50% of the students considered the school
an ideal place to provide them with accurate SRHE. However, only 18% of the students indicated that the school curriculum provided them with SRHE. Around 65% of the students claimed that their teachers were incompetent and had negative attitudes towards sexual health questions. Alquaiz et al. (2012) argue that the use of friends and house-maids—as sources of sexual knowledge—is unreliable because most house-maids are from low socioeconomic backgrounds, have low educational attainment and come from different cultures whose values do not match the religious values of Muslims. This study also clearly indicated the need to incorporate a culturally sensitive school-based SRHE program and provide SRHE training for school teachers and parents. A notable limitation is that this study used a small sample size and included only female adolescents. Therefore, the findings cannot be generalised to the general adolescent population.

2.5.3 Lack of SRHE among Adolescents in Iran and other Middle Eastern Countries

In Iran, a total of eight adolescent sexual and reproductive health studies (two qualitative and six quantitative studies) were found in the integrated literature review. A qualitative descriptive study was recently conducted in Iran by Mosavi et al. (2014) to assess the sexual and reproductive health knowledge and attitudes of 247 female school adolescents aged 14–18. Participants were invited from schools of four large cities with different socioeconomic and cultural backgrounds. The majority of adolescent girls indicated that they did not have adequate sexual health information, had poor sexual health communication with their parents and obtained most of their information on sexual and reproductive health matters from their friends and the Internet, which provided them with insufficient and incorrect information. Moreover, both male and female adolescents stated that cultural and social changes, such as modernisation, increasing women’s participation in society and easy access to the media and the Internet made them vulnerable to premarital sex. The adolescents surveyed strongly preferred to receive school-based SRHE programs consistent with their culture and religious values (Mosavi et al., 2014). The authors of this study recommended that further qualitative research in other Muslim countries
covering a large sample of both male and female adolescents should be conducted to support their findings. Furthermore, the lack of knowledge regarding HIV and STIs was evident in many Iranian quantitative studies, which were conducted on a large sample on both male and female adolescents (Tavoosi, Zaferani, Enzevaei, Tajik, & Ahmadinezhad, 2004; Yazdi et al., 2006). For example, Yazdi et al. (2006) reported that around 81% of both male and female adolescents aged 14–18 agreed that HIV could be prevented through vaccination and over 44% believed that HIV could be cured if it is diagnosed early.

Similar findings regarding the lack of sexual and reproductive health knowledge among adolescents were also reported in the following Middle Eastern quantitative studies using a large sample of both male and female adolescents: the Jordanian youth survey 2009, which was conducted on a nationally representative sample of 1,046 men and 1,096 women aged 15–24 (Johns Hopkins University, 2001); the Egyptian nationally representative survey 1997, which was conducted among 9,000 adolescents aged 10–19 (Ibrahim et al., 1999); the nationally representative survey 2009, which was also conducted in Egypt among 15,000 young people aged 10 to 29 (Population Council Egypt, 2010); the UAE GSHS 2010 (UAE MOH & WHO, 2010); the Lebanon GSHS 2010 (Lebanon MOH & WHO, 2010); the Jordan GSHS 2007 (Jordan MOH & WHO, 2007); and the Moroccan GSHS 2010 (Morocco MOH & WHO, 2010). Similar findings were also reported in other Middle Eastern countries such as Yemen (Al-Serouri, Anaam, Al-Iryani, Al Deram, & Ramaroson, 2010) and Pakistan (Ali, All, Waheed, & Memon, 2006; Raheel, White, Kadir, & Fatmi, 2007).
2.6 Islamic Sexual and Reproductive Health Beliefs and Practices

2.6.1 Definition of Islam

Islam is a monotheistic religion established by the Prophet Mohammad (Last messenger chosen by Allah [the God, creator of the universe] to guide humanity) more than 1400 years ago (Almany, 2009; Islamic Source, 2011). Islam is considered the second largest religion in the world after Christianity (Pew Research Center, 2012). The main sources of beliefs for people of the Islamic faith are the Holy Quran (word of Allah, given as guidance for humanity) and Sunna/Hadith (all advices and actions of Prophet Mohammed 1400 years prior when Muslim men and women engaged in discussions relating to sexual matters) (Almany, 2009; Islamic Sources, 2011; Tabatabaie, 2015a). They describe the way in which Allah should be worshipped (Almany, 2009; Williams, 2008). In the Holy Quran, both Islam and Muslim have the same meaning. They mean submission to the will of God and obedience to his law (Almany, 2009; Quran, 2018).

2.6.2 Islamic Views of SRHE

Islam highlights the importance of acquiring and pursuing knowledge including sexual and reproductive health knowledge (Quran, 2018, p. 39; Tabatabaie, 2015a) of issues such as premarital sex, the rules of sexual relationships between married couples (Quran, 2018, p. 2), homosexuality (Quran, 2018, p. 7), menstruation, abortion, reproduction, fetal development, breastfeeding and masturbation (Quran, 2018, p. 23). Furthermore, during the period of Prophet Mohammed, both Muslim men and women were never hesitant or shy to ask about Islamic views towards their sexual matters (Almany, 2009; Tabatabaie, 2015a; Merghati-Khoei, Whelan, & Cohen, 2008). This clearly indicates that discussion on sexual matters was not taboo but is fully acknowledged and respected in the Islamic religion.

In Islam, sex outside marriage is prohibited and considered a punishable sin (Quran, 2018, p. 17). Instead, the sexual relationship between married couples is considered as an act of worship. Islam respects the sexual relationship between married couples and encourages every wife and
husband to meet the sexual needs of each other (Quran, 2018, p. 30). Furthermore, homosexuality and intended abortion (except in case of medical emergency when the mothers’ life is at risk) are strictly prohibited (Quran, 2018, p. 7). The use of contraceptive methods for birth control is allowed in Islam (Almany, 2009).

2.6.3 Premarital Sex among Muslim Adolescents

Internationally, it is well-documented that adolescents become sexually active before high school (Mitchell, 2014; CDC, 2017a; WHO, 2018b). However, the culture and religion of Muslims prohibit sexual contact prior to marriage (Orgocka, 2004; Smerecnik, Schaalma, Gerjo, Meijer, & Poelman, 2010; Tabatabaie, 2015b). Nevertheless, the assumption that Muslim adolescents in Middle Eastern countries are non-sexually active is incorrect and has resulted in the failure to meet the SRHE needs of young people (Farahani et al., 2011; Mohtasham et al., 2009; Vakilian et al., 2014). For example, in Iran, Mohammodi et al. (2006) examined the sexual and reproductive health knowledge, attitudes and engagement in the premarital sexual activity of a random sample of 1,385 unmarried male adolescents aged 15–18. The study used a WHO self-administered questionnaire developed by Cleland, Ingham, and Stone (2002) titled “Asking Young People about Sexual and Reproductive Behaviours”. The results showed that around 40% of male participants had engaged in premarital sexual activity. The majority of participants had poor knowledge of HIV, STIs, physiology, and anatomy of the reproductive system and contraceptive methods including condom use. Likewise, a high prevalence of premarital sexual activity was also reported in recent Iranian quantitative studies of unmarried male and female adolescents (Farahani et al., 2011; Mohtasham et al., 2009; Vakilian et al., 2014). Moreover, in Lebanon, a cross-sectional, comparative study was conducted among 1,400 unmarried students of public and private universities using self-administered questionnaires. The study showed that around 73% of male
and 30% of female students reported having premarital sexual relations (Barbour & Salameh, 2009).

Some studies conducted on Islamic parents claim that they do not support the introduction of school-based SRHE, even though they are aware of the sexual consequences that are associated with poor knowledge (Tabatabaie, 2015b). This may be due to parental assumptions that adolescents do not engage in premarital sexual activities due to it being forbidden in the Islamic faith and the associated familial dishonour and shame (Tabatabaie, 2015b; Orgocka, 2004). Therefore, by supporting school-based SRHE programs is to acknowledge and condone premarital sexual activity (Tabatabaie, 2015b). Nevertheless, the modernisation of Middle Eastern countries, the proliferation of social media use and higher education levels are associated with an increasing age of marriage and women’s participation in society, making adolescents more vulnerable to engage in premarital sex (Mosavi et al. 2014). In Middle Eastern countries, educated women get married at a later age than non-educated women. For example, in Oman, UAE and the KSA, the mean age of marriage for women with university education is 26 years compared to 17 years for those with no education or high school education (Population Reference Bureau, 2009; Roudi-Fahimi & El Feki, 2011).

2.6.4 SRHE as a Socio-Cultural Taboo

In Middle Eastern countries, including Oman, a culture of silence and taboo towards the discussion of sexual matters is common (Gańczak et al., 2007; Jaffer et al., 2006). This attitude influences the sexual communication of parents, school teachers, and school nurses with adolescents (Orgocka, 2004; Merghati-Khoei et al., 2014). In Islamic settings, the provision of school-based SRHE programs is a complex and contentious issue. In Iran and Egypt, studies indicate that some parents and religious leaders hold the attitudes that SRHE is part of Western culture that can conflict with Islamic beliefs (DeJong et al., 2005; Farrag & Hayter, 2014;
Merghati-Khoei et al., 2014). Nevertheless, due to the social development and changes in many Middle Eastern countries including Oman, the movement towards the improvement of adolescent sexual and reproductive health is becoming a major concern among healthcare providers and school educators (Oman MOH & WHO, 2010, 2018). Hence, this study has a significant role in improving sexual and reproductive health among adolescents (Farrag & Hayter, 2014; Oman MOH & WHO, 2010, 2018).

2.7 International (non-Middle East) Attitudes and Beliefs of Parents towards School-Based SRHE Programs

Parents play an important role in designing and implementing school-based SRHE programs. According to Kirby’s guidelines on implementing school-based SRHE programs, securing parental support is important for the success of these programs (Kirby et al., 2011). Internationally, evidence indicates that most parents support school-based SRHE programs in order to improve adolescents’ sexual and reproductive health knowledge and quality of life (Barr et al., 2014; McKay et al., 2014). However, the cultural and social sensitivities of some parents have created barriers to their implementation (Barr et al., 2014; Howard-Barr et al., 2011; Turnbull et al., 2008; Varani-Norton, 2014). The fear of parental opposition to the delivery of school-based SRHE programs was identified by school teachers, school nurses and school administrators as one of the major barriers in several countries—including Australia (Duffy et al., 2013; Johnson et al., 2014; Milton, 2003), USA (Eisenberg et al., 2013; Barr et al., 2014; Matza, 2012), the UK (Hayter et al., 2008; Turnbull et al., 2008) and Canada (Cohen et al., 2012; McKay et al., 2014). Therefore, exploring parental attitudes and support towards school-based SRHE programs is essential to assist school curriculum decision-makers, classroom teachers and school healthcare-providers to change policy and foster the development and implementation of these programs (Barr et al., 2014; Department of Health, Western Australia, 2008; McKay et al., 2014). Evaluations of school-based SRHE programs of 50 primary and secondary school in Victoria, Australia indicated that parents’
attitudes and involvement in the curriculum development were a critical element for the success of these programs (Dyson, 2008). This indication was also reported in other evaluations of school-based SRHE programs in Australia (Dyson, 2006; Mitchell et al., 2014).

The following section reviews studies that represent parental attitudes, beliefs, facilitators, and barriers towards the introduction of school-based SRHE programs in different international communities.

2.7.1 The Attitudes, Beliefs, Facilitators, and Barriers of Parents towards the Introduction of School-Based SRHE Programs in Canada

In Canada, Weaver, Byers, Sears, Cohen and Randall (2002) examined the attitudes and beliefs of 4200 parents towards school-based SRHE programs using a self-administered questionnaire. The study showed that 94% of parents agreed that SRHE should be provided in schools and about 97% of parents agreed that SRHE should start in primary or secondary school. Moreover, the study indicated that although parents wanted to discuss sexual and reproductive health issues with their adolescents, a majority of them stated that they lacked sexual and reproductive health knowledge and skills regarding the following topics: personal safety, abstinence, puberty, sexual relationships, reproduction, STIs, sexual coercion and assault, contraceptive methods, safer sex practices, correct names for genitals and sexual pleasure and enjoyment. Most parents stated that these sexual topics were important to be included in the SRHE curriculum. Moreover, the majority of parents (85%) reported that they wanted to receive workshops on SRHE and strategies of sexual communication from schools in order to provide their adolescents with SRHE at home. However, in this study, the majority of parents were well educated with college or university level and around 90% of them were female (mothers). Therefore, it is not clear how well these findings reflect the attitudes and beliefs of fathers towards school-based SRHE programs.
Recently, in Canada, McKay et al. (2014) conducted a similar quantitative study among 1002 parents of primary and secondary public Canadian schools, using a self-administered questionnaire. The survey was completed almost by an equal number of fathers and mothers. Their findings were akin to those of Weaver et al. (2002). The study showed that 87% of parents supported school-based SRHE and around 84% of parents preferred that SRHE should start in secondary school. In addition, the study indicated that parents were comfortable with nurses, doctors and school teachers as sources of SRHE for their adolescents. However, they were not comfortable with SRHE from friends, the media and the Internet. In the study, there were no significant differences in the attitudes of mothers and fathers towards school-based SRHE programs. However, the study did not examine the sexual health knowledge and comfort of parents regarding SRHE topics and did not provide a definition for school-based SRHE programs in the survey, which may have influenced parents’ responses to the survey’s questions. Furthermore, the majority of the participants were well educated. The study recommended that further qualitative research using FGDs should be implemented to explore the attitudes and beliefs of parents with different cultural backgrounds. Nevertheless, these findings are consistent with other Canadian quantitative studies (Advisory Committee on Family Planning, 2008; Byers, Sears, & Weaver, 2008; Langille, Langille, Beazley, & Doncaster, 1996; McKay, Pietrusiak, & Holowaty, 1998).

2.7.2 The Attitudes, Beliefs, Facilitators, and Barriers of Parents towards the Introduction of School-Based SRHE Programs in Australia

In Australia, a qualitative study was conducted by the Department of Health in Western Australia (2008) to develop public health interventions to ensure that adolescents were well informed about SRHE. The study intended to explore the attitudes and barriers of parents towards implementing school-based SRHE programs and develop resources to support parents with the provision of SRHE for their adolescents at home. The study was conducted among 31 parents of adolescents attending primary and secondary schools using four FGDs. The study showed that the
majority of parents supported school-based SRHE programs and wanted to be informed about the contents of the SRHE curriculum. Parents also recommended that school teachers should be trained before delivering SRHE to their adolescents. In addition, parents reported a lack of sexual health knowledge, comfort, and self-confidence for delivering SRHE to their adolescents. They also indicated the need for SRHE training from school. Similar findings were also reported in other Australian studies (MacBeth, 2008). However, both studies used a small sample size and over 90% of participants were female (mothers). The authors of both studies recommend that further research should be conducted using a large number of fathers and mothers from different cultures.

2.7.3 The Attitudes, Beliefs, Facilitators, and Barriers of Parents towards the Introduction of School-Based SRHE Programs in the UK and USA

A systematic review was conducted by Turnbull et al. (2008) to examine the attitudes and beliefs of British and American parents towards school-based SRHE programs. The study showed that both British and American parents supported school-based SRHE programs. The study indicated that although British and American parents would like to discuss sexual health topics with their adolescents, they felt embarrassed and uncomfortable and lacked the sexual health knowledge and skills of sexual communication to conduct SRHE. Furthermore, the study revealed that parents wanted to receive SRHE workshops. These findings were also documented in other UK studies (Denman, 1998).

There are 13 published studies from the USA that have investigated parents’ attitudes, beliefs, facilitators and barriers towards school-based SRHE programs (See Table 2.1 below). These studies were conducted among parents of students from primary, middle and high schools (grades K-12). Nine of these studies were conducted using a telephone survey (Barr et al., 2014; Constantine, Jerman, & Huang, 2007; Eisenberg, Bernat, Bearinger, & Resnick, 2008; Ito et al., 2006; Howard-Barr et al., 2011; Howard-Barr & Moore, 2007; Kaiser Family Foundation, 2000; Lagus, Bernat, Bearinger, Resnick, & Eisenberg, 2011; Tortolero, Johnson, Peskin, & Markham,
2011) and four studies were conducted using a mailed survey (Bleakley et al., 2006; Dake, Price, Baksovich, & Wielinski, 2014; Jordan, Price, & Fitzgerald, 2000; Yarber, Milhausen, Crosby & Torabi, 2005). In these studies, the majority of parents (80-95%) supported school-based SRHE programs, such as an abstinence-plus program (emphasizes the benefit of abstinence with education about contraceptive methods) and a comprehensive sexuality education program (an age-appropriate SRHE program that covers various SRHE topics). However, in these studies, an abstinence-only education program (teach about abstinence from all sexual behaviours and does not include information about contraceptive methods) received the lowest levels of support. Studies showed that most parents preferred that SRHE should be started in primary or secondary schools. Although most parents in these studies supported many SRHE topics to be covered in school curriculums, some of SRHE topics were perceived as controversial topics such as contraception, condom use, masturbation, homosexuality, sexual orientation, and gender identity (see Table 2.1 below for more details).

From the above-mentioned American studies, Barr et al.’s (2014) study provides strong evidence regarding American parents’ attitudes and beliefs toward school-based SRHE programs. The study was conducted among 1715 parents using a phone-call survey. The survey was developed and validated by the Florida Department of Health and Florida Department of Education. The results showed that 80% of parents supported comprehensive sexual education programs or abstinence-plus programs and only 20% of parents supported abstinence-only programs. Approximately 90% of parents were in favour of including most SRHE topics in secondary schools (grades 6-8) such as sexual communication, anatomy, and physiology of reproductive systems, HIV, STIs, and abstinence. Furthermore, parents were in favour of including topics, such as contraception, condom use and sexual orientation in high schools from grade 9-12 (86%, 83%, 72% respectively). Barr et al. (2014) also found that mothers were more supportive
than fathers of including topics such as contraception and condom use in secondary schools. Finally, Barr et al. (2014) found that parents with a higher level of education preferred comprehensive school-based SRHE programs that covered many SRHE topics. Barr et al.’s (2014) study cannot be generalised to the general population as it had some limitations. For example, more than 60% of participating parents were not included in this study as they had no phones. Nevertheless, the results of this study are consistent with previous American studies (Bleakley et al., 2006; Constantine et al., 2007; Eisenberg et al., 2008; Howard-Barr et al., 2011; Howard-Barr & Moore, 2007; Ito et al., 2006; Kaiser Family Foundation, 2000; Lagus et al., 2011; Tortolero et al., 2011; Yarber et al., 2005).
Table 2.1 Studies of Parental Attitudes, Beliefs, Facilitators, and Barriers towards the Implementation of School-Based SRHE Program in the USA.

<table>
<thead>
<tr>
<th>Author, Location, Participants</th>
<th>Method, Main Results</th>
</tr>
</thead>
</table>
| 1) Barr et al. (2014), Florida, 1715 parents (60% female) of children grades K-12 | - Telephone Survey: developed based on national instruments and its content validity and readability were assessed by experts from the Florida Department of Health and Florida Department of Education.  
- 95% of parents supported school-based SRHE programs.  
- 80% of parents supported comprehensive sexuality education programs and abstinence-plus programs to be provided for their children and adolescents.  
- Only 20% of parents supported abstinence-only to be provided for their adolescents.  
- Approximately 90% of parents were in favor to include many SRHE topics in secondary schools (grades 6-8) such as communication, anatomy, HIV, and abstinence.  
- Parents were in favor to include the SRHE topics of birth control, condoms use and sexual orientation in high school (86%, 83%, 72% respectively).  
- Mothers were more likely than fathers to support teaching various SRHE topics.  
- Results showed that all 18 SRHE topics were supported by the majority of participants. The less supported SRHE topics were homosexuality, sexual orientation, and masturbation. |
| 2) Dake et al. (2014), Ohio, 2400 parents of children grades K-5 | - Mailed survey  
- The majority of parents (90%) supported school-based SRHE programs.  
- More than 55% of parents preferred that the topics of abstinence and refusal skills should be conducted in grades 6-8 and the topics of birth control and condom use should be conducted in high school. |
| 3) Howard-Barr et al. (2011), Florida, 1,092 parents (70% female, full time residents of Florida, 18 years of age and older) | - Telephone Survey: adapted from a national survey, the 2004 Kaiser Family Foundation.  
- The vast majority (91%) of parents supported sexuality education.  
- Parents showed overwhelming support (85%) to replace an abstinence-only curriculum with abstinence-plus.  
- Held supportive views about condoms and contraception. 63% of parents indicated that the use of condoms and other contraceptive methods will not encourage sexual activity among adolescents. Only 32.3% said yes.  
- Results showed that all 18 SRHE topics were supported by the majority of participants. The less supported SRHE topics were homosexuality, sexual orientation, and masturbation. |
| 4) Lagus et al. (2011), Minnesota, 1605 parents of children under 18 | - Telephone Survey  
- Majority of parents (88%) supported school-based SRHE.  
- Parents believed that their adolescents should receive most of their SRHE from parents (98%) and school teachers (60%).  
- Most parents believed that their adolescents received most of their sexual information from peers (80%), and media or internet (60%). |
| 5) Tortolero et al. (2011), Texas, 1201 parents of children under 18 | - Telephone Survey  
- More than 93% of parents supported school-based SRHE.  
- More than 80% of parents reported that SRHE should be started in primary or secondary schools.  
- 70% of parents reported that SRHE should include topics about condom and contraception.  
- Sharing the responsibility of delivering SRHE with parents (85%) and health professional (65%). |
| 6) Eisenberg et al. (2008), Minnesota, 1605 parents of children grades K-12 | - Telephone Survey  
- 90% of parents supported school-based SRHE (abstinence-plus programs).  
- The majority of parents reported that school-based SRHE should be started in secondary school. |
| 7) Constantine et al. (2007), California, 1284 parents of children grades K-12 | - Telephone Survey  
- 90% of parents supported comprehensive sexuality education. |
- Younger parents were more supportive of school-based SRHE than older parents.

8) Howard-Barr & Moore (2007), Florida, 641 parents (56% female, full-time residents of Florida, A representative sample across the state of Florida)
- Telephone Survey: adapted from a national survey, the 2004 Kaiser Family Foundation.
- The majority of parents supported the abstinence-plus program.

9) Ito et al. (2006), North Carolina, 1306 parents of children grades K-12
- Telephone Survey
- 91% of parents supported comprehensive sexuality education.
- 93% of parents reported that school-based SRHE programs should be started in primary or secondary school.
- Sharing the responsibility of delivering SRHE with parents (96%) and healthcare professional (95%).

10) Bleakley et al. (2006), National, nationally representative sample of all adults aged 18 to 83 years living in the United States including parents. (N = 1096)
- Online Internet survey: developed based on national studies
- 82% of parents supported school-based SRHE programs (abstinence-plus programs).
- Abstinence-only education programs received the lowest levels of support (36%).

11) Yarber et al. (2005), Midwestern state (Indiana), A random sample of 517 Indiana residents (60% female, include any person 18 or older including parents)
- Telephone survey
- A majority of participants (83%) agreed that SRHE should be provided in school.
- Instructions about condom use for HIV and STIs prevention should be provided in public high schools
- 94% of participants stated that only medically accurate information about condoms should be given and 71% stated that classroom instructions should include condoms so students can see and touch them.
- 48% of participants agreed that condoms should be made available to teenagers in public high schools without parental permission.
- 71% of participants agreed that parents should be involved in delivering SRHE.
- Less than 30% of participants believed that teaching about condoms can motive sexual activity.

12) Jordan et al. (2000), Ohio, 597 parents of children grade s7-12
- Mailed Survey
- Almost all parents supported comprehensive age-appropriate SRHE being taught in primary school.

- Telephone Survey
- 90% of parents supported school-based SRHE programs (abstinence-plus program)
- 60% of parents believed that SRHE will not encourage sexual activity.
2.7.4 The Attitudes, Beliefs, Facilitators, and Barriers of Parents towards the Introduction of School-Based SRHE Programs in India

In India, Nair et al. (2012) conducted a survey among a random sample of 800 parents to investigate their attitudes and beliefs regarding a school-based SRHE program. More than 90% of parents strongly supported school-based SRHE in order to improve the sexual health of their adolescents. About 85% of parents reported that their adolescents had not asked them about sexual matters. However, around 90% of parents reported that they were not comfortable discussing sexual matters with their adolescents and about 65% of parents reported that they had never discussed the topic of puberty, physiological and anatomical changes with their adolescents. For example, very few parents had discussed the following SRHE topics: menstruation (9%); growth of hair in armpits (12%); changes in voice (9%); growth of pubic hair (10%); growth of breasts for girls (9%); teenage pregnancy (2%); STIs and HIV (2%); masturbation (1%); and abortion (1%). More than 50% of parents wanted the topics of genital hygiene, puberty, physiological and anatomical changes, reproductive systems, menstruation, HIV/STIs to be covered in the SRHE curriculum. However, about 80% of parents did not support the topics of teenage pregnancy, abortion, contraception, safe sex, masturbation, homosexuality, and sexual dating. Moreover, almost all parents recommended that school-based SRHE should be conducted through qualified school teachers and school nurses. In addition, parents lacked sexual health knowledge and stated the need for a SRHE training program. These findings are consistent with a recent study conducted among 1140 Indian adults—including parents—showing widespread support for the provision of comprehensive sex education to youth in India. This study was conducted among people of different religions including Muslims, using a well-standardised anonymous online survey used in international settings (titled: “Survey on Parent Attitudes towards Sexual Health Education”). However, most participants in the study were relatively well-educated (O’Sullivan, Byers, & Mitra, 2018).
2.7.5 Summary

The abovementioned international (non-Middle East) studies clearly showed parental support towards school-based SRHE programs. However, studies also recommended that parents should be provided with SRHE training in order to provide SRHE for their adolescents. The studies also clearly indicated strong parental support for the introduction of school-based SRHE to assist school curriculum decision-makers, classroom teachers and school healthcare-providers to change policy and foster implementing SRHE in the school curriculum, thus, reducing risky sexual behaviours among adolescents. Thus, this current study will assist in providing first time baseline empirical data and to support implementing these programs in Oman. Further qualitative studies investigating the attitudes and beliefs of parents towards implementing a comprehensive school-based SRHE should be conducted.

2.8 International (non-Middle East) Attitudes and Beliefs of School Teachers towards School-Based SRHE Programs

School teachers play an important role in designing and implementing school-based SRHE programs (Kirby et al., 2011; UNESCO, 2018). Exploring the attitudes and beliefs of school teachers regarding adolescent school-based SRHE programs is essential in assessing any barriers and socio-cultural challenges to the provision of these programs (Duffy et al., 2013; Eisenberg et al., 2013; Kirby et al., 2011; UNESCO, 2018). It is also vital in creating a secondary school-based SRHE policy for the design and implementation of these programs (Kirby et al., 2011). Internationally, evidence has indicated that most school teachers support school-based SRHE programs in order to improve adolescent sexual and reproductive health (Duffy et al., 2013; Eisenberg et al., 2013).

2.8.1 The Role of School Teachers in Delivering School-Based SRHE Programs

Schools are often seen as a cost-effective setting to reach a large number of adolescents with SRHE and meet their sexual health needs (Kirby et al., 2011; UNESCO, 2018). Thus, it is
essential that age-appropriate SRHE is delivered to adolescents through qualified and appropriate educators such as school science teachers (Allen, 2009; Ashcraft, 2008; Parker et al., 2009; UNESCO, 2018). In fact, evidence indicates that adolescents receive most of their sexual and reproductive health information from their friends, social media and internet (Mosavi et al., 2014; Sridawruang et al., 2010). Thus, many international organisations, such as the WHO (2008) and UNESCO (2018, 2009), strongly advocate for the introduction of school-based SRHE programs. A sexual and reproductive health education program delivered through school teachers is considered an important part of a school’s curriculum and its efficacy is widely acknowledged in the literature (Australian Department of Education and Early Childhood Development, 2008; Goldman, 2010; Jeffries, Dodge, Bandiera, & Reece, 2010; Kontula, 2010; Ollis, 2010; Powell, 2007). Such programs are associated with an improvement in students’ academic performance (CDC, 2013). These programs aim to improve adolescents’ sexual behaviours by providing age-appropriate SRHE including information about puberty, HIV, STIs, contraception and teenage pregnancy (Kirby et al., 2011; Goldman, 2010).

Regardless of the effectiveness of school-based SRHE programs in improving adolescents’ sexual behaviours, there is still much argument regarding who should deliver these programs (Allen, 2009; Cohen et al., 2012; Westwood & Mullan, 2007; UNESCO, 2018). However, school science teachers are preferred by parents and adolescents to conduct school-based SRHE and are considered a more trustworthy source of SRHE for adolescents than friends, the Internet and the media (Lagus et al., 2011; McKay et al., 2014). School science teachers can use their knowledge and skills in science and teaching strategies to conduct sexual health information to the students using credible and appealing methods. Moreover, they have the ability to build a trusting relationship with their students and tailor discussions to meet adolescents’ cognitive, social, emotional and physical development (Shepherd et al., 2010).
2.8.2 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs

There are a complex set of barriers that influence the capacity of school teachers to deliver a successful school-based SRHE curriculum (Eisenberg et al., 2013). Hence, it is very important that intervention efforts towards implementing school-based SRHE programs are based on understanding school teachers’ facilitators and barriers towards the provision of these programs. The current research conducted in Australia (Duffy et al., 2013), the USA (Eisenberg et al., 2013), the UK (Westwood & Mullan, 2007) and Canada (Cohen et al., 2012) indicate some of these barriers. These include teachers’ teaching background, formal qualifications, confidence, experience, professional development, resources, training and availability of adequate time to conduct SRHE. Furthermore, in the USA, Wilson, and Wiley (2009) identified some additional barriers such as teachers’ values and religious beliefs towards SRHE, as well as support available from the greater school community and parents. School teachers were found to be concerned regarding the responses of students, parents and school administrators towards the introduction of school-based SRHE programs (Wilson & Wiley, 2009). Likewise, Johnson et al. (2014) found that restrictive school policies and fear of parental opposition were major barriers that prevent Australian teachers from delivering school-based SRHE programs. According to the WHO (2008), a positive relationship between parents and school environments—including teachers, school counsellors, and school nurses—can enhance the success of school-based SRHE programs. Moreover, Kirby (2007, 2002) found that teachers’ positive attitudes and beliefs towards the importance and worth of school-based SRHE programs are central to the effective implementation of these programs, which can be improved by training.

Nevertheless, studies conducted in Canada (Ninomiya, 2010), the USA (Lindau et al., 2008) and Australia (Milton, 2003) indicate that many school teachers were being asked to be involved in the role of teaching SRHE without adequate preparation and training. Several studies
conducted among school science teachers from different countries such as Australia (Goldman, 2010, 2011), USA (Eisenberg et al., 2013; Kirby & Laris, 2009), the UK (Parker et al., 2009; Westwood & Mullan, 2007) and Canada (Cohen et al., 2012; Ninomiya, 2010) strongly recommended that school teachers who deliver SRHE be provided with training and resources to enhance implementing school-based SRHE programs. Evidence indicates that well-prepared teachers are the key to effective SRHE (Clayton, Brener, Barrios, Jayne, & Everett Jones, 2018; Kirby, 2007; UNESCO, 2018). School teachers should be able to assess students’ relevant needs, design activities that meet these needs, deliver content consistent with community values, create a safe learning environment and foster student comfort in discussing sensitive sexual-related topics (Kirby, 2007; Wilson & Wiley, 2009). School teachers with positive attributes towards school-based SRHE such as compassion, approachability, trustworthiness, open-mindedness, good listening skills, being non-judgemental, empathy and confidence, are more likely to deliver effective SRHE within school environments (Ollis, 2010; Sinkinson, 2009; Tietjen-Smith, Balkin, & Kimbrough, 2008).

Studies clearly show that comprehensive professional development can produce a remarkable outcome in improving the role of school teachers in delivering SRHE. Comprehensive professional development can assist school teachers to improve their sexual health skills and knowledge as well as their confidence, attitudes, and beliefs towards the provision of school-based SRHE programs (Clayton et al., 2018; Goldman, 2010; Cohen et al., 2012; Ollis, 2010; UNESCO, 2018). Researchers in the field of SRHE argue that involvement of school teachers in delivering school-based SRHE programs without any support, training, policies, and guidelines that have solid foundations, will inhibit the success of these programs (Allen, 2009; Lindau et al., 2008; Connell & Elliot, 2009; UNESCO, 2018). For example, they argue that without training and polices, the school teachers will avoid teaching controversial topics such as contraception, condom
use, and homosexuality despite their beliefs that it is very important that school-based SRHE programs should be comprehensive and cover a variety of sexual health topics (Allen, 2009; UNESCO, 2018). Accordingly, this current study plays an important role in assessing any barriers and socio-cultural challenges towards the provision of these programs by school teachers in Oman. The following studies explore the attitudes, beliefs, facilitators, and barriers of school teachers towards the introduction of school-based SRHE programs in international (non-Middle Eastern) communities:

2.8.2.1 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in the UK

In the UK, Westwood and Mullan (2007) investigated the knowledge, attitudes, facilitators, and barriers of school teachers who delivered SRHE programs. The study aimed to explore whether school teachers were adequately prepared to conduct the current government school-based SRHE programs. A valid self-administered questionnaire was distributed among 155 school teachers (94 female, 61 male) of 19 secondary schools including rural schools and urban schools from a large region in the UK. The results indicated that science school teachers were the main contributors to the provision of SRHE programs. The majority of school teachers (85%) reported that school-based SRHE was useful for adolescents and should be taught by a combination of school teachers and healthcare professionals. Moreover, most school teachers (70%) stated that they had not received adequate SRHE training and strongly recommended that SRHE teachers receive continuous professional development. Furthermore, about 70% of school teachers indicated that they did not have adequate sexual health knowledge to teach SRHE topics such as STIs, contraception, teenage pregnancy, abstinences, HIV/AIDS, cervical cancer and testicular and breast examinations. Moreover, the study revealed that school teachers preferred that SRHE curriculum should be conducted using different methods such as lectures, quizzes, books, booklets, and TV education programs. This has been the only UK study that has examined the attitudes and
beliefs of school teachers towards the introduction of SRHE programs. However, the results of this study are consistent with other studies conducted in Canada (Cohen et al., 2012), USA (Eisenberg et al., 2013) and Australia (Duffy et al., 2013).

2.8.2.2 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in Canada

In Canada, Cohen et al. (2012) conducted a survey among 294 school teachers from 30 primary and secondary schools to examine their attitudes, willingness, and barriers towards teaching school-based SRHE programs. Their results were consistent with those of Westwood and Mullans (2007). Almost all school teachers (95%) rated SRHE programs as very important to be taught in Canadian schools and indicated that school-based SRHE programs should commence in primary school grades 1-4 (50%) or secondary school grades 4-5 (30%). Moreover, most school teachers (70%) reported that they lacked sexual health knowledge, SRHE training, and comfort to teach SRHE topics. Due to the lack of SRHE training, the majority of school teachers also reported that they were uncomfortable and unwilling to teach sensitive SRHE topics such as sexual pleasure and orgasm, masturbation, contraception, condom use, and sexual orientation. Furthermore, Cohen et al. (2012) found other barriers, which influenced the school teachers’ willingness to conduct school-based SRHE programs such as: available resources, time allocated to a SRHE curriculum, level of support from school administration, community attitudes toward SRHE, anticipated negative reactions from parents and students and teaching SRHE topics that conflict with personal beliefs. More importantly, school teachers identified anticipated negative reactions from parents as an important barrier, which influenced their willingness to conduct school-based SRHE programs and the availability of SRHE training as an important facilitator to boost their willingness to teach SRHE programs.

Cohen et al. (2012) also found that gender influenced Canadian school teachers’ willingness to conduct SRHE topics. For example, their results showed that female Canadian
teachers were more comfortable to teach about topics traditionally viewed as ‘female topics’ such as menstruation, whereas male Canadian teachers were more comfortable to teach about topics traditionally viewed as ‘male topics’ such as nocturnal emissions. These results are consistent with other studies conducted in Canada (Bickerton & DeRoche, 2005; Lokane-Diluzio, Cobb, Harrison, & Nelson, 2007; McCall et al., 1999; Moore & Rienzo, 2000; Ninomiya, 2010), Australia (Milton, 2003; Walker & Milton, 2006) and Portugal (Veiga, Teixeira, Martins & Melico-Silvestre, 2006), which indicate that a lack of SRHE training, a lack of sexual health knowledge, parental opposition and gender can influence the school teachers’ willingness to conduct SRHE topics. The findings of the above-mentioned Canadian studies clearly show that school teachers should be provided with SRHE training as part of their degree, in-service training and ongoing support in order to enhance their sexual health knowledge and comfort with respect to teaching more sensitive SRHE topics, provide effective school-based SRHE programs that meet the evolving needs and experiences of youth. Nonetheless, the findings of these Canadian studies have some limitations, such as the use of a small sample size and more than 70% of participants were female school teachers. Further qualitative and quantitative research investigating the attitudes, beliefs, facilitators, and barriers of school teachers towards the introduction of school-based SRHE programs in other countries with different religious backgrounds is required.

### 2.8.2.3 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in the USA

In the USA, although school teachers support implementing comprehensive school-based SRHE programs, many school teachers report that they do not deliver SRHE to students (Dodge et al., 2008; Eisenberg et al., 2013). In the USA, most schools do not have clear polices regarding the teaching of SRHE; SRHE is often conducted later in the school years (mainly in high schools), there is little uniformity in what content is taught as SRHE and it is often included as part of another course (Dodge et al., 2008). Recently, in the USA, Eisenberg et al. (2013) conducted a
state-wide study to examine teachers’ attitudes and barriers towards teaching school-based SRHE programs. The study was conducted among 368 school teachers of public primary and secondary schools as part of a CDC program. The study indicated that most school teachers (60%) did not teach SRHE topics such as contraceptive methods, condom use, sexual orientation, homosexuality, masturbation, and sexual decision-making. More than half of school teachers identified the following as barriers, which prevented them from delivering SRHE to the students: concerned about reactions of parents, students, or administrators, lack of time, lack of SRHE training, lack of financial resources and restrictive school policies. However, the results were limited to the views of female school teachers. Further studies exploring male teachers’ attitudes towards school-based SRHE programs are required.

Additionally, in the USA, Lindau et al. (2008) conducted a national study to examine the attitudes and beliefs of 335 school teachers towards implementing school-based SRHE programs. Participants were invited from 201 public secondary and high schools from 112 districts in the USA. The study showed that the SRHE topics of HIV/AIDS (97%), STIs (96%), reproduction (85%) and abstinence-until-marriage (89%) were the most frequent SRHE topics taught by school teachers. However, the SRHE topics of contraception and condom use (30%), homosexuality and sexual orientation (32%), abortion (38%) and decision-making (25%) were the less frequent SRHE topics taught by school teachers. A majority of school teachers (90%) reported that the lack of SRHE training and teaching materials and resources were the main barriers for not teaching SRHE. In addition, school teachers stated some other barriers such as personal values (77%), school or district policy (85%), community cultural and religious views (53%) and a fear of parental opposition (51%). Although a SRHE training was considered by school teachers as an important facilitator for delivering comprehensive school-based SRHE programs, most school teachers reported that they had not received SRHE training and that they lacked the sexual health
knowledge to conduct SRHE programs. The national study by Lindau et al. (2008), used a probability sampling design and included approximately an equal number of male (47%) and female (53%) school teachers. Thus, it provided powerful findings regarding the attitudes, beliefs, barriers, and facilitators of school teachers towards the introduction of school-based SRHE programs in the USA. The findings of both Lindau et al.’s (2008) study and Eisenberg et al.’s (2013) study are consistent with recent and previous USA studies indicating that American school teachers who had received SRHE training (such as contraception, HIV, STIs and teenage pregnancy) were more confident and able to teach a broad range of sensitive SRHE topics (Ahmed et al., 2006; Clayton et al., 2018; Jeffries et al., 2010; Kaiser Family Foundation, 2000; Yarber, Torabi, & Haffner, 1997; Wilson & Wiley, 2009).

2.8.2.4 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in Australia

In Australia, SRHE programs are introduced in high schools. Implementing school-based SRHE programs has been recommended by several Australian academic institutions and governmental organisations, such as The Talking Sexual Health National Framework and the Catching on Early developed by Australian Research Centre in Sex, Health, and Society (ARCSHS). They aim to support school teachers with appropriate SRHE training, resources, and knowledge in order to empower the planning and implementation of school-based SRHE programs and to improve the sexual and reproductive health of Australian adolescents (ARCSHS, 2017). In Victoria, Australia, Duffy et al. (2013) examined the attitudes and beliefs of school teachers towards teaching SRHE in the school curriculum. A self-administered questionnaire developed by the Ballarat Community Health Promotion Officers and Sexuality Education Unit of Department of Education and Early Childhood Development was distributed among 29 Australian school teachers teaching grades 5-6 from 14 rural and urban schools. The results showed that more than 95% of school teachers rated the following SRHE topics as highly relevant to be taught in
school-based SRHE curriculum: puberty, reproductive systems, menstruation, condom use, nocturnal emissions, reproduction, healthy and unhealthy relationships, safe sexual behaviours and sexual decision-making. However, the results showed that the majority of school teachers reported a low level of confidence and comfort to conduct these SRHE topics. In addition, school teachers stated that they did not have enough time to conduct SRHE as they were overwhelmed in their other teaching responsibilities in an already crowded curriculum. Moreover, almost all school teachers (90%) reported the need for professional development such as SRHE training sessions and workshops and access to free teaching resources, such as educational software package, websites, books, pamphlets, and CDs in order to successfully conduct school-based SRHE programs (Duffy et al., 2013). The study conducted by Duffy et al. (2013) used a small sample size and around 80% of the participants were female school teachers. Nevertheless, the findings of this study are consistent with aforementioned studies conducted in the UK, Canada, and the USA and with other Australian studies (Allen, 2008, 2009; Goldman, 2011, 2010; Johnson et al., 2014; Milton, 2003; Walker & Milton, 2006). The researchers of these studies strongly recommended that further studies, exploring the attitudes and beliefs of school teachers towards the introduction of school-based SRHE programs should be conducted.

2.8.2.5 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in Netherlands and Scotland

In the Netherlands, a school-based SRHE program titled “Long live love” (LLL) is implemented in most secondary schools. This program is delivered by biology school teachers and plays an important role in improving the sexual health of adolescents in the Netherlands. It aims to provide adolescents aged 13-15 with SRHE about safe sexual practice, condom use, contraception, STIs, HIV and teenage pregnancy (Paulussen et al., 1995; Schaalma et al., 1996). Recently, Schutte et al. (2014) conducted a survey to investigate school teachers’ facilitators and barriers towards implementation of the LLL programs. The study was conducted among 130
school teachers of 110 secondary schools from different regions in the Netherlands. The results showed that about 60% of school teachers had not received SRHE training and around 40% had only received general SRHE training. Moreover, the study indicated that implementation of school-based SRHE programs was influenced by some factors, such as school teachers’ personal beliefs, confidence and sexual health knowledge of biology school teachers, SRHE training, governmental support, school policy, and the parental association. Thus, Schutte et al. (2014) claimed that understanding school teachers’ attitudes and beliefs towards school-based SRHE programs can help to optimise the adoption, implementation, and continuation of these programs.

These facilitators and barriers were also reported in previous Dutch studies conducted among a large sample of secondary school teachers (700-960 teachers) who delivered LLL programs (Paulussen et al., 1995; Paulussen, Kok, & Schaalma, 1994; Wiefferink et al., 2005).

Furthermore, in Scotland, Buston, Wight, Hart and Scott (2002) examined the attitudes and beliefs of school teachers towards the introduction of school-based SRHE programs titled: “Safe, Happy and Responsible programs”. Their study showed that implementation of school-based SRHE programs was influenced by SRHE training, social and parental support, school policy, support from school administration, teachers’ experience and time allocated to the SRHE curriculum. The study showed that school teachers who had participated in SRHE workshops were able to conduct SRHE better. Nevertheless, Both Dutch and Scottish studies were limited to the views of female school teachers. Hence, further studies, exploring the attitudes of male school teachers towards the introduction of school-based SRHE programs are required.

2.8.2.6 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in Brazil and Thailand

In Brazil, SRHE training was also identified as an important facilitator to conduct school-based SRHE programs. Da-Silva, Guerra and Sperling (2013) explored the attitudes and barriers of school teachers towards the introduction of school-based SRHE programs, which were
recommended by the National Curriculum of the Brazilian Ministry of Education. Their results are in concord with above-mentioned studies conducted in the UK, USA, Canada, and Australia. The study showed that the majority of Brazilian school teachers had not taught most of the SRHE topics due to the lack of SRHE training. The school teachers had delivered only the topic of the reproductive systems and had neglected the topics of sexual orientation, homosexuality, sexual relationships, masturbation, contraceptive methods, and condom use. The study suggested that SRHE training must be provided for teachers in the schools.

Likewise, in Thailand, Thammaraksa, Powwattana, Lagampan and Thaingtham (2014) investigated the attitudes of 90 secondary school teachers towards the introduction of school-based SRHE programs. The findings revealed that SRHE training boosted the level of confidence and sexual health knowledge of school teachers, enabling them to conduct school-based SRHE programs. Again, in this study, more than 75% of participants were female school teachers.

2.8.2.7 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in African Countries

In Ethiopia, Fentahun, Assefa, Alemseged and Ambaw (2012) conducted a mixed method study using a self-administered questionnaire and in-depth interviews to examine the attitudes, beliefs, barriers and facilitators of 94 school teachers towards the introduction of school-based SRHE programs. Most school teachers (90%) stated that SRHE is very important to improve adolescent sexual health and should be started in primary school. School teachers also stated that SRHE topics should be appropriate for students’ age and developmental level. Additionally, school teachers reported a lack of sexual health knowledge and the need for a SRHE training. Similarly, in Tanzania, Plummer et al. (2007) found that school teachers supported the introduction of school-based SRHE programs and wanted to receive a SRHE training.

Furthermore, in Nigeria, Asekun-Olarinmoye, Fawole, Dairo and Amusan (2007) investigated the knowledge, attitudes and barriers of 305 secondary school teachers towards the
introduction of school-based SRHE. The findings showed that most school teachers (88%) supported implementing school-based SRHE curriculum and around 55% of school teachers indicated that parents and schools should share the responsibility of SRHE. The findings also revealed that most of the school teachers (70%) had poor sexual health knowledge. More importantly, 45% of the school teachers did not agree to include contraceptive methods and condom use in the SRHE curriculum. School teachers reported the need for workshops and in-service training regarding SRHE. Likewise, in South Africa, school teachers reported that they did not have adequate sexual health knowledge and suggested the need for SRHE training and adjustment in school policy in order to conduct school-based SRHE programs (Smith & Harrison, 2013). These results are consistent with other studies conducted in African countries (Helleve et al., 2009).

2.8.2.8 The Attitudes, Beliefs, Facilitators, and Barriers of School Teachers towards the Introduction of School-Based SRHE Programs in India

In India, a study was conducted to examine the attitudes of school teachers towards school-based SRHE programs (Pandey, 2015). The findings showed that both male and female school teachers supported the introduction of school-based SRHE. School teachers also reported that their school curriculum did not cover SRHE topics such as condom use, contraceptive methods, teen pregnancy, sexual orientation, menstruation, and sexual violence. They stated that fear of parental opposition, lack of SRHE training and polices and restrictions from school administration were the reasons for not covering SRHE in the school curriculum. However, Indian school teachers stated that discussion of sexual matters was not taboo in their culture and with SRHE training, public education about the importance of school-based SRHE and supported SRHE policy from school administrations; the school-based SRHE programs could be successfully implemented in India (Pandey, 2015).
Moreover, in India, Nair et al. (2012) conducted a survey among a random sample of 115 school teachers to investigate their attitudes and beliefs regarding school-based SRHE programs. In the study, the majority of school teachers strongly agreed that school-based SRHE should be implemented in schools. About 60% of school teachers reported that their students did not ask them about their sexual concerns and 35% of school teachers stated that they had seen their students reading or watching pornographic books or websites. More than 65% of school teachers indicated that they were not comfortable discussing sexual matters with their students and about 40% of school teachers reported that they had never discussed SRHE with students. The study clearly showed that school teachers had difficulty in teaching SRHE. For example, the following SRHE topics were discussed as follows: onset of menstruation in girls (27%), growth of hair in armpit (13%), voice change in boys (29%), growth of pubic hair (9%), development of breasts in girls (14%), teenage pregnancy (14%), STIs (11%), masturbation (7%), abortion (9%) and contraception (4%). Similar to the above-mentioned studies, in this particular study, most of the school teachers reported a lack of sexual health knowledge and the need for SRHE training.

2.8.3 Summary

The literature review of school teachers’ attitudes and beliefs towards school-based SRHE programs globally demonstrated that school teachers support implementing these programs. However, the evidence indicated that there were several barriers that prevented school teachers from conducting these programs successfully, such as lack of sexual health knowledge, lack of SRHE training, comfort, confidence, and school policy. Moreover, the evidence showed that school teachers were concerned about responses from parents and school administrators despite the evidence, that internationally, most parents support the introduction of school-based SRHE programs (Barr et al., 2014; Department of Health, Western Australia, 2008; McKay et al., 2014). Therefore, studies strongly recommended to provide school teachers with SRHE training and
correct the misunderstanding regarding parental support towards the introduction of SRHE. Studies reflected that making school curriculum decision-makers aware of parental support for school-based SRHE programs is an important strategy in successfully adopting and designing these programs to support adolescent well-being. In conclusion, before implementing school-based SRHE programs, it is very important to investigate the attitudes and barriers of school teachers towards these programs. This will help to provide more guidance and support to school administrators, school healthcare-providers and teachers when designing a SRHE curriculum. Thus, the findings of this current study will play a significant role in guiding and supporting the implementation of school-based SRHE programs in Oman.

2.9 International (non-Middle East) Attitudes and Beliefs of School Nurses towards School-Based SRHE Programs
2.9.1 The Role of School Nurses in Delivering School-Based SRHE programs

High rates of STIs and teenage pregnancy among adolescents aged 15-19 has been well documented (CDC, 2017a; WHO, 2018b). For example, CDC estimates that adolescents aged 15-24 account for half of all new STIs in the USA (CDC, 2018b). Hence, this age group should obtain accurate and up to date school-based SRHE programs (CDC, 2017b). Several countries such as Australia, Canada, USA, and UK have implemented school-based SRHE programs and involved school nurses in delivering these programs to reduce the high rate of STIs and teenage pregnancy among adolescents aged 15-19 (ARCSHS, 2017; CDC, 2017b; UK Department of Health, 2015; WHO, 2006). School nurses play a significant role in providing school-based SRHE programs which result in a positive effect on sexual and reproductive health and well-being of adolescents (Borawski et al., 2015; UNESCO, 2018; WHO, 2006).

School nurses are recognised by numerous authors to engage effectively with adolescents; to provide them with accurate health information; and to maintain adolescents’ privacy and
confidentiality (Akpabio, Asuzu, Fajemilehin, & Ofi, 2009; Barnes, Courtney, Pratt, & Walsh, 2004; Borawski et al., 2015; Westwood & Mullan, 2006; UNESCO, 2018). The authors of these studies suggested that involving school nurses in delivering school-based SRHE programs would greatly enhance these programs and reduce risky sexual health behaviours among adolescents. This could be related to the fact that internationally, nursing programs graduate competent professionals who are able to provide holistic care for individuals of all ages across healthcare and community-based settings. Nurses are trained to discuss sensitive topics with individuals regarding their health and well-being including HIV/AIDS and contraceptive methods and teach them to perform technical skills ranging from self-injection of medications to colostomy care (American Association of Colleges of Nursing, 2018; Brunner & Smeltzer, 2010; Mc-Fadyen, 2004).

2.9.2 Attitudes, Beliefs, Facilitators, and Barriers of School Nurses towards the Introduction of School-Based SRHE Programs

Internationally, the provision of school-based SRHE programs is still a controversial issue and causes a great degree of social debate (Barr et al., 2014; Howard-Barr et al., 2011; Varani-Norton, 2014). There is strong evidence that school nurses experience barriers and challenges in providing school-based SRHE due to sensitivity of the SRHE topics; opposition from parents and school administrations; and lack of policy, preparation and SRHE training (Barnes et al., 2004; Cleaver & Rich, 2005; Hayter et al., 2008; Mc-Fadyen, 2004; Piercy & Hayter, 2008; Richardson-Todd, 2006; Westwood & Mullan, 2009, 2006). Nevertheless, there is extensive literature worldwide that school-based SRHE programs are strongly accepted by parents and school teachers who preferred school nurses to conduct these programs (Bleakley et al., 2006; Ito et al., 2006; McKay et al., 2014; Turnbull et al., 2008). As a result, SRHE is considered to be an essential part of education and widely introduced in school curriculum (McKay et al., 2014) with strong evidence that school nurses play a critical role in its delivery (Borawski et al., 2015; Owen et al., 2010; WHO, 2006). However, there appear to be few studies that examine whether school nurses
are the most appropriate health care professionals or indeed have adequate sexual health knowledge to conduct school-based SRHE programs. This study contributes information on the attitudes of school nurses towards these programs. The following studies discuss the attitudes, beliefs, facilitators, barriers of school nurses towards the introduction of school-based SRHE programs in international (non-Middle East) countries:

2.9.2.1 The Attitudes, Beliefs, Facilitators, and Barriers of School Nurses towards the Introduction of School-Based SRHE Programs in the UK

In the UK, the Department of Health strongly recommends that school nurses should be key contributors to the provision of school-based SRHE for adolescents as they can access to school-age population and their duty mainly focus on improving the well-being of adolescents and school-based projects (UK Department of Health, 2015). According to the UK School Nurse Practice Development Resource Pack, school nurses should provide adolescents with necessary information about safer sex practices; relationship; contraceptive methods and how to access them; STIs; HIV; and how to obtain appropriate screening and treatments regarding STIs (UK Department of Health, 2015). According to the UK Department of Health (2015), this information can play a vital role in reducing teenage pregnancies and STIs among adolescents.

A large mixed method study was conducted by Westwood and Mullan (2006) in the UK to investigate sexual and reproductive health knowledge of school nurses and to assess their attitudes, barriers, confidences, and comfort towards the introduction of secondary school-based SRHE programs. The study was conducted using both a self-administered questionnaire and FGDs. All school nurses employed by Primary Care Trust in a large central region of the UK were invited to participate in the study. Quantitative results indicated that the majority of school nurses had insufficient sexual health knowledge and lacked the comfort and confidence to successfully teach SRHE topics such as STIs and contraception. For example, more than 50% of school nurses provided wrong answers about questions of STIs. Similarly, in the FGDs, most school nurses
reported that they felt unprepared and did not have enough information to teach about STIs, contraception and condom use. Additionally, most school nurses interviewed stated that they had not received adequate SRHE training and resources and they felt stressed and uncomfortable to conduct SRHE at school due to fear from parental opposition and students’ responses (some students are smart and ask difficult questions). Moreover, some school nurses interviewed indicated that they did not have sufficient time to teach SRHE curriculum and they were restricted by school policy.

Both qualitative and quantitative data suggested that school nurses preferred that SRHE should start in primary school. School nurses interviewed reported that starting SRHE in secondary school is too late and should be started in primary school. School nurses interviewed argued that primary school students receive a lot of incorrect sexual information and some girls begin menses at an early age and thus, they should receive early SRHE. However, some of the school nurses interviewed were worried about early SRHE in motivating sexual activity. They stated that primary school students are too young to handle the sexual information they receive and may want to practise what they know. In addition, results showed that school nurse wanted that SRHE should be taught by a multi-disciplinary team including school nurses, doctors, school teachers, and youth social workers. However, school nurses recommended that they should receive SRHE training and workshops before conducting school-based SRHE programs. They suggested that administrative and financial assistance (funding) is required to address professional development of school nurses as SRHE educators and to provide them with SRHE resources such as books, CD, free access learning website and workshops (Westwood & Mullan, 2006). Although this study used a strong research method and provided useful data, it cannot be generalised as it used a small sample size. Only 16 school nurses completed the survey and 12 participated in FGDs.
Westwood and Mullan (2009) conducted a representative survey to investigate the attitudes and beliefs of 155 school teachers and 1959 students’ grades 8-10 from every secondary school within the UK including rural and urban schools, regarding SRHE role of school nurses. The results are consistent with their previous study (Westwood & Mullan, 2006). The study showed that school nurses do not contribute effectively to SRHE for secondary school students. The study strongly highlighted that school nurses should be provided with adequate SRHE training and counselling skills in order to conduct effectively school-based SRHE programs.

In the UK, Hayter et al. (2008) also conducted a qualitative study to investigate the attitudes and barriers of 16 female school nurses who participated in delivering school-based SRHE programs to students aged 11 to 12. Their results are consistent with those of Westwood and Mullan (2009, 2006). The results showed that school nurses were very restricted by school policy and school administrations. For example, many school nurses reported that schools used different methods to control the contents of SRHE sessions. They indicated that some controversial topics were rejected by school administrations, such as nocturnal emissions, condom use, masturbation, homosexuality, and sexual orientation. Many school nurses indicated that they were stopped by school administration when they provided information that conflicted with teachers’ personal beliefs. Additionally, most school nurses reported the lack of sexual health knowledge and the need for SRHE training.

Piercy and Hayter (2008) reported additional findings from the study by Hayter et al. (2008). The results showed that the involvement of school nurses in SRHE largely consisted of one or two lessons mainly about puberty. Furthermore, many school nurses reported that students asked questions not related to puberty, but to specific aspects of sexual behaviour and sexual activity, such as masturbation, nocturnal emissions, contraception, and condom use. However, school nurses indicated that these questions were very difficult and they felt that they lacked the
confidence and knowledge to answer these questions. Additionally, some school nurses felt that they were unable to provide acceptable and age-appropriate information. They were anxious that by answering students’ questions, they might expose some children to detailed information for which they were not yet ready. Piercy and Hayter (2008) suggested that it is very important to assess the sexual health knowledge and skills of school nurses undertaking the role of SRHE provider and provide them with ongoing professional support and training. Additionally, the results of the above-mentioned studies are consistent with another study conducted in the UK among 30 female school nurses from across three Primary Care Trusts, using semi-structured interviews (Cleaver & Rich, 2005). In the study, many school nurses reported that some school teachers and managers did not like to incorporate SRHE in the school curriculum and thus, SRHE was often neglected and slotted in at the end of the school year (Cleaver & Rich, 2005). Nevertheless, the findings of these studies are limited to the views of female school nurses and further research investigating the attitudes and barriers of male and female school nurses towards the introduction of school-based SRHE programs should be conducted in the UK.

In Scotland, there is only one study that investigated the attitudes of school nurses towards the introduction of school-based programs (Mc-Fadyen, 2004). The study was organised by the Scottish Executive Department of Health to improve the role of school nurses as sexual educators and to reduce the rate of STIs and teenage pregnancy among adolescents. Mc-Fadyen (2004) investigated the attitudes and beliefs of 167 female school nurses towards teaching school-based SRHE, using a validated survey. The results showed that about 70% of school nurses delivered school-based SRHE compared to 30% who did not deliver. Nevertheless, the study indicated that more than 40% of school nurses did not teach any of the following SRHE topics: male and female reproductive system (4%); reproduction (55%); contraception (58%); teenage pregnancy (59%); abortion (37%); sexual orientation (22%); homosexuality (15%); and STIs (60%). Furthermore,
the majority of school nurses (70%) stated that they had never received any SRHE training and that they did not have sufficient sexual health knowledge and confidence to teach school-based SRHE programs. In addition, school nurses reported that the lack of parental support and school policy obstructed them from delivering SRHE. For example, many school nurses reported that they were requested not to cover some sexual health topics, such as homosexuality and contraception by school administrations. Mc-Fadyen (2004) argued that conducting SRHE without any SRHE training is breaching the UK Code of Professional conduct. He suggested that due to a lack of evidence regarding the role of school nurses as SRHE providers, further studies should be conducted.

2.9.2.2 The Attitudes, Beliefs, Facilitators, and Barriers of School Nurses towards the Introduction of School-Based SRHE Programs in the USA

In the USA, there is a lack of studies regarding the attitudes and beliefs of school nurses towards school-based SRHE programs. In 2012, the first survey was conducted to examine the knowledge, attitudes, beliefs, and barriers of Californian school nurses towards school-based SRHE programs. About 110 school nurses serving students from grades 1-12 of public schools were invited to participate in the study through the Executive Board of the California School Nurses Organization. About 70% of school nurses agreed that school-based SRHE programs should be taught by school nurses. Furthermore, most school nurses (61%) indicated that social pressure from school managers, coordinators and parents often prevented them from teaching school-based SRHE programs (Matza, 2012). About 45% of school nurses reported that they had not provided SRHE and 40% of school nurses had provided only 1 to 10 hours of SRHE per semester. Similar to the above-mentioned studies conducted in the UK, this study also showed that American school nurses do not have adequate sexual and reproductive health knowledge and therefore need SRHE training. For example, 60% of school nurses provided incorrect answers regarding emergency contraceptive methods and STIs (Matza, 2012).
The study was considered the first of its kind to explore the attitudes and beliefs of school nurses towards the introduction of SRHE in American schools. It addressed the gaps in the literature regarding the role of school nurses as SRHE educators and provided baseline data to support implementing school-based SRHE programs in the USA (Matza, 2012). Nevertheless, further studies exploring school nurses’ attitudes and beliefs towards school-based SRHE programs should be conducted.

2.9.3 Summary

In conclusion, evidence clearly indicates that school nurses experience barriers and challenges in providing school-based SRHE programs, such as opposition from parents and school administrations and lack of school policy, preparation and SRHE training. The literature shows that there is a gap in the knowledge regarding the attitudes and beliefs of school nurses towards the provision of school-based SRHE programs. There is also a lack of knowledge to determine that they are the most appropriate healthcare professional to competently conduct these programs. Most of the abovementioned studies lacked rigor, used a small sample size, were descriptive, have not been replicated and were mainly conducted in the UK (Cleaver & Rich, 2005; Hayter et al., 2008; Johnston, 2009; Mc-Fadyen, 2004; Piercy & Hayter, 2008; Westwood & Mullan, 2006) (See Table 2.2). This current study will be the first of its kind by examining the attitudes and beliefs of school nurses toward school-based SRHE programs in Oman.
Table 2.2 Studies of School Nurses’ Attitudes, Beliefs, Facilitators, and Barriers towards the Introduction of School-Based SRHE Programs.

<table>
<thead>
<tr>
<th>Author, Location</th>
<th>Participants</th>
<th>Method</th>
<th>Main Results</th>
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</thead>
</table>
| Matza (2012), USA | 110 California school nurses serving students grades 1-12 | National study, Mailed Survey, Adapted from previously validated instrument developed by Westwood and Mullan (2006) | • 70% agreed that school-based SRHE programs should be taught by school nurses.  
• Social pressure from school managers, coordinators, parents affected their ability to teach SRHE  
• 45% of school nurses had not provided SRHE  
• Lack of sexual and reproductive health knowledge and the need for a SRHE training |
| Westwood & Mullan (2009), UK | 155 teachers and 1959 students grades 8-10 from every secondary school within the UK including rural and urban schools | Mailed Survey | • School nurses do not contribute effectively to SRHE.  
• Most school teachers and students showed negative attitudes towards the role of school nurses as SRHE. |
| Johnston (2009), UK | 13 nursing students (third year) | Two FGDs | • SRHE programs are very important for adolescents and should be part of their role  
• Unprepared for this role due to lack of sexual health knowledge and skills  
• Need for a SRHE training |
| Hayter et al. (2008) | 16 school nurses who delivered school-based SRHE programs to the students aged 11 to 12 years | Three FGDs | • School nurses were very restricted by school administration and school policy.  
• Lack of sexual health knowledge and skills |
| Piercy & Hayter (2008), UK | 24 school nurses | Mailed survey and FGDs | • Lack of knowledge, confidences, and comfort/ felt unprepared  
• Had not received adequate SRHE training and resources to teach SRHE  
• Restricted by school policy, parents and school administration  
• SRHE should be started in primary school.  
• SRHE should be taught by a multi-disciplinary team including school nurses, doctors, teachers |
| Westwood & Mullan (2006), UK | 30 female school nurses from across three Primary Care Trusts | Semi-structured interviews | • Restriction from School policy and school administrations |
| Cleaver & Rich (2005), UK | 167 female school nurses | Mailed Survey | • 70% of school nurses delivered SRHE to students  
• Had not covered many SRHE topics  
• 70% had never received any SRHE training, lack of sexual health knowledge, skills, and confidence  
• Lack of support from parents and school managers |
2.10 Attitudes and Beliefs of Parents, School Teachers, and School Nurses towards School-Based SRHE Programs in the Middle East

Exploring the attitudes and beliefs of parents, school teachers, and school nurses regarding the necessity of providing SRHE programs for adolescents is essential to assess the barriers and socio-cultural challenges to the development, implementation, and sustainability of SRHE programs in a Middle Eastern context. Such contextual knowledge that draws on attitudes and belief systems is a crucial factor for creating policies regarding the design and implementation of these programs in Muslim countries. These factors are recognised by numerous authors in Middle Eastern countries including Oman (Jaffer et al., 2006; Oman MOH, 2008; Oman MOH & WHO, 2018, 2015, 2012), Egypt (Farrag & Hayter, 2014) and Iran (Merghati-Khoei et al., 2014; Mosavi et al., 2014).

2.10.1 The Attitudes, Beliefs, Facilitators, and Barriers of Parents, School Teachers and School Nurses towards the Introduction of School-Based SRHE Programs in Iran

In Iran, Latifnejad-Roudsari et al. (2013) conducted a qualitative study to explore the socio-cultural factors associated with the provision of SRHE programs for female adolescents, using FGDs and in-depth IDIs. The participants were high school female adolescents aged 14–18. Mothers, school teachers, and school nurses from two large cities with different cultural and religious contexts were included in the study. The results showed that cultural taboos surrounding sexuality influenced the main socio-cultural factors associated with the provision of SRHE programs for adolescent girls in Iran. These emerging themes were as follows: (1) denial of adolescents’ engaging in premarital sex; (2) social concern regarding the negative impacts of SRHE programs (belief that SRHE programs can lead to sexual misbehaviour and early sexual initiation); (3) stigma, embarrassment and taboos associated with SRHE, resulting in parents avoiding discussions of sexual issues with their children; (4) hesitancy to discuss sexual and reproductive health matters in public due to the assumption that SRHE can interfere with modesty
and chastity; (4) lack of support and policy related to SRHE; (5) fear of parents’ objection; (6) intergenerational gap as a consequence of the media and advanced communication technology, which makes the current generation adhere more to other cultures; and (7) fear of imitating non-Islamic patterns of education. Interestingly, these socio-cultural factors were also reported in other countries with different cultures, such as Ghana (Avusabo-Asare et al., 2008), Tanzania (Mbonile & Kayombo, 2008) and Nepal (Pokharel et al., 2006).

Additionally, in Iran, Merghati-Khoei et al. (2014) conducted a qualitative study to investigate parents’ knowledge and management of their children’s sexuality. They undertook FGDs among 26 parents from 154 primary schools. The results showed that parents lacked the required knowledge and skills and were not prepared or competent to deal with their children’s sexuality. The majority of parents ignored the biomedical sexual and reproductive development of their children, believed that children are innocent and not ready to know about sexual and reproductive health matters and assumed that early SRHE can motivate children to misbehave sexually. These issues were considered the main causes of the lack of SRHE policy within the family and the absence of sexual communication between parents and their children (Merghati-Khoei et al., 2014).

The findings of the aforementioned studies have also been similarly reported in another four qualitative studies conducted in Iran between 2007 and 2014 (Merghati-Khoei & Richters, 2008; Mohammadi et al., 2007; Mosavi et al., 2014; Ramezankhani, Akbari, Pazargadi, & Shapouri-Moghaddam, 2014). These findings clearly emphasise the need to increase parents’ knowledge of adolescent sexual and reproductive health through training and to develop comprehensive and culturally sensitive SRHE programs for adolescents and parents in schools. However, all these studies used small sample sizes and were limited mainly to the attitudes of mothers, female school teachers and female school nurses.
Furthermore, in Iran, Khadijeh et al. (2015) conducted a cross sectional study to investigate the attitudes and beliefs of secondary and high school teachers towards the introduction of school-based SRHE programs, using a validated survey. Almost all school teachers (90%) identified SRHE as one of the fundamental rights of adolescents, which can help to prevent STIs and HIV and reduce adolescents’ sexual risk behaviour. Moreover, most school teachers reported that school-based SRHE should include sexual matters regarding puberty, physical development, menstruation, reproductive system, STIs, HIV, premarital abstinence, contraception, and safe sex practise. More than 50% of school teachers also reported that school-based SRHE programs should be conducted by biology school teachers, parents and health care professional (doctors or school nurses). Additionally, half of the school teachers reported that sexual health education should start in primary school. The study also suggested that school teachers preferred different teaching methods to deliver school-based SRHE programs, such as lectures, videos, educational pamphlets, CD and textbooks. School teachers recommended that school decision-makers should consider SRHE as a top priority, which needs to be covered in the school curriculum. However, this study used a small sample size and was limited to views of female school teachers.

There is a lack of studies regarding the attitudes, beliefs, facilitators, and barriers of school teachers towards school-based SRHE programs in the Middle East. Hence, further studies investigating this issue in Islamic countries are required. This current study plays an important role in addressing this research gap in the Middle East. It provides first-time baseline data regarding the attitudes and beliefs of school teachers towards the provision of school-based SRHE programs in Oman.
2.10.2 The Attitudes, Beliefs, Facilitators, and Barriers of School Nurses towards the Introduction of School-Based SRHE Programs in Egypt

In Egypt, using in-depth interviews, Farrag and Hayter (2014) explored the attitudes and beliefs of 13 Egyptian school nurses regarding the introduction of school-based SRHE programs. The analysis of nurses’ attitudes and beliefs reflected four themes: (1) personal issues, particularly nurses’ own beliefs that early SRHE could be a problem; (2) cultural and political dimensions, namely the lack of governmental support and the view of SRHE as belonging to Western culture, which can affect Islamic norms and values; (3) parental issues, particularly the nurses’ belief that parents will not accept SRHE and the nurses’ fear of being blamed by parents; and (4) nurses’ lack of knowledge and skills regarding SRHE. More importantly, the findings of this study also highlighted the issue of gender in providing school-based SRHE programs for the opposite sex. Female school nurses indicated that they were more comfortable to provide SRHE for girls than boys due to limited interactions with the opposite sex. They believed that in Islamic countries, women are often expected to be demure and sexually naive. However, the gender issue towards the provision of school-based SRHE programs for boys worldwide is a common issue among female school nurses that has shown to be improved by training (Croghan & Johnson, 2003; Ingham & Hirst, 2010). However, the findings of this study cannot be generalised as it also used a small sample and was limited to the attitudes of female school nurses sharing similar socioeconomic and cultural backgrounds. The recommendations of this study were similar to those of Iranian studies that highlighted the need for SRHE training courses for parents and healthcare providers. Moreover, this study highlighted the importance of involving and securing parental and community support for implementing school-based SRHE programs and suggested that further studies in other Islamic countries would boost the findings of this study.

In 2005, a study conducted in Arab countries including Oman, Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Qatar, KSA, Sudan, Syria, Tunisia, UAE,
Iran, Yemen and the West Bank and Gaza, in collaboration with UNICEF and UNAIDS, the main sexual and reproductive health challenges facing adolescents aged 10–24 were examined (DeJong et al., 2005). The study used both published and unpublished literature and interviews with 51 key adults working in international agencies in the region. It showed that taboos surrounding the discussion of sexuality were the main challenge. It also found that there were no national governmental SRHE programs meeting the needs of adolescents. Most of the adolescents suffered from a lack of access to reproductive health information, whether from parents, teachers or healthcare providers. Sexual and reproductive health topics were rarely included in the school curriculum and were omitted by school teachers. In addition, the study showed that there were unprotected forms of marriage in these countries, with limited data regarding unintended pregnancy, abortion and STIs (DeJong et al., 2005). However, the results of the study are limited to the attitudes of a small sample working in international agencies and cannot be generalised to the knowledge and attitudes of parents, school teachers, and school nurses.

2.10.3 Summary

In Middle Eastern countries, most parents, school teachers, and school nurses support implementing comprehensive school-based SRHE programs to improve adolescents’ sexual health and suggested the need for SRHE training courses before conducting these programs. Nevertheless, the literature review on the Middle East indicated that most of the studies were conducted in Iran. All these studies used small sample sizes and were mostly limited to the attitudes of mothers, female school teachers and female nurses. Similar research involving both genders in other Muslim countries is needed to confirm the consistency of these results. Therefore, this current study was conducted to explore the attitudes, beliefs, facilitators, and barriers of fathers, mothers, male and female school teachers and school nurses towards school-based SRHE programs in Oman. This study contributes information on understanding implementing these
programs in Middle Eastern countries and provides implications for future efforts to change policy and implement these programs for adolescents.

2.11 Gaps in the Literature

The literature review identified, compared and contrasted published work on SRHE within school settings. There is limited evidence regarding the attitudes and beliefs of parents, school nurses and school teachers towards implementing school-based SRHE programs in Islamic cultural settings, including Oman. The majority of publications were conducted mainly in the USA, UK, Australia, and Canada. More importantly, the sparsely available literature used singular design research methods and had small sample sizes. The current evidence is limited to the attitudes and beliefs of mothers, female school teachers and female nurses. This indicates that a research gap exists and highlights the need for the application of a mixed-methodology approach in future research. These gaps in the literature were highlighted by several authors from Middle Eastern countries, such as Oman (Oman MOH & WHO, 2018, 2015, 2012), Iran (Merghati-Khoei et al., 2014; Mosavi et al., 2014), KSA (Alquaiz et al., 2012), UAE (Gańczak et al., 2007) and Egypt (Farrag & Hayter, 2014) and non-Middle Eastern countries such as Canada (McKay et al., 2014; Weaver et al., 2002), the USA (Lagus et al., 2011; Barr et al., 2014; Howard-Barr et al., 2011), the UK (Turnbull et al., 2008; UK Department of Health, 2015) and Australia (Department of Health, Western Australia, 2010). Another gap noted in the literature review was the general lack of application of theories. This is a disadvantage, as theoretical frameworks can be used to explain the observed research phenomena (Patton, 2015). Most of the studies did not explicitly report the theoretical frameworks used in the research. These knowledge gaps provided the impetus for undertaking this study.

This current study, underpinned by the SCT (Bandura, 1977, 1997, 2001), utilised a mixed-methodology approach and included mothers, fathers, male school teachers, female school teachers, and female school nurses. The use of multiple types of research participants was useful
in developing a rich, in-depth understanding of a collection of factors related to implementing SRHE programs.

The following section will critically review the theoretical frameworks that have been used for implementing school-based SRHE programs. These models include SCT, the Health Belief Model (HBM) and the Theory of Planned Behaviour (TPB). It ends with the examination of SCT as a theoretical framework.
2.12 Theoretical Framework

A Theoretical framework is defined as a system of concepts, assumptions, beliefs, and theories that can be used to guide and support the building of research (Huberman & Miles, 2002; Sharon & Matthew, 2012). The intention of a theoretical framework for adolescent SRHE is to theoretically establish the aims of the educational approach and the nature of teaching and learning within a cultural and social context and also to provide guidance for understanding the factors that influence implementing adolescent SRHE programs (Bandura, 2001; Kirby et al., 2011). Of the SRHE programs reviewed in the integrative literature, some had used one or more of the following theoretical frameworks. Most of the studies conducted on school-based SRHE programs used one of three conceptual frameworks: (1) SCT (Coyle et al., 2006; Kao & Manczak, 2013; Kirby et al., 2011; Thammaraksa et al., 2014); (2) HBM (Mohtasham et al., 2009; Mosavi et al., 2014); and (3) TPB (Bosompra, 2001; Matza, 2012) as the basis for the development of their programs.

The theoretical framework for this study was based on SCT, an adaptation of the psychological model developed by Albert Bandura (2001, 1977, 1986) with its utility well documented in the school-based SRHE literature (Coyle et al., 2006; Kirby et al., 2011; Dilorio et al., 2006; Thammaraksa et al., 2014). Albert Bandura’s studies on human behaviour and its influences resulted in the development of SCT (Bandura, 2001). From 1977 to 2001, Bandura’s theory was modified and expanded by adding a new factor each time. Each new factor contributes to the understanding and implementing healthy behaviours. It was initially called “Observational Learning Theory” (Bandura, 1977, p. 2) and then later called “social learning theory” (Bandura, 1986, p. 4). Finally, in 1997, Bandura added a third factor (personal [cognitive] factor) in his theory and used the title: “Social Cognitive Theory” to describe his framework (Bandura, 1997, p. 1).

Albert Bandura’s SCT puts emphasis on the social origins of behaviour as well as the cognitive processes that influence the behaviour and functioning of humans. It states that learning
occurs in a social context and is acquired through observation. This theory provides a framework for understanding, predicting and changing human behaviour. It explains that human behaviours occur as the result of the interaction of three concepts: personal, behavioural and environmental factors (See Figure 2.2 below).

![Social Cognitive Theory](image)


Personal [cognitive] factors cover the factors that occur within the individual and influence his or her response to implementing a behaviour such as knowledge, understanding, attitudes, and beliefs. Whereas, behavioural factors are referred to the factors that are related to the responses an individual receives after they implement a behaviour such as skills, practice, confidence, and self-efficacy. According to Bandura (2001, 1997), in order to take on a behaviour (such as the implementation of school-based SRHE programs), it is necessary that an individual believes he or she is capable of performing it well. In other words, they must have confidence in themselves. This is what Bandura refers to as self-efficacy. He defines self-efficacy as a person’s belief that he or she can successfully carry “courses of action required to deal with prospective situations
containing many ambiguous, unpredictable and often stressful elements” (Bandura & Schunk, 1981, p. 587). Bandura (2001, 1997) stated that past experiences of success and failure can influence an individual’s self-efficacy and confidence to implement behaviour. The environmental factors include factors that are physically external to an individual and influence his or her ability to successfully complete a behaviour such as culture, religion, social norms, family, peers, school, social media, governmental support, policies, community access and influence of others (Bandura, 2001, 1997). Bandura suggested that other peoples’ opinions and support can enhance or decrease implementing an activity. He indicated that people are likely to implement an activity if other people encourage them to do so. On the contrary, people are less likely to participate in an event in which other people believe it conflicts with their social norms, culture or religion (Bandura, 2001, 1997).

Social Cognitive Theory has examined the following questions regarding SRHE: (1) What are the factors that influence human sexual behaviour; (2) Does the environment have any influence on human sexual behaviour; and (3) What are the methods that can use to enhance the introduction of school-based SRHE programs? (Bandura, 2001; Kirby et al., 2011). Thus, Albert Bandura’s SCT (2001) has helped to understand and answer the research questions of this study such as (See Table 2.3 below):

1. What are Omani parents’ attitudes and beliefs regarding school-based SRHE programs in Oman?

2. What are the current facilitators and barriers to the provision of school-based SRHE programs in Oman?

Social Cognitive Theory has been widely used in sexual education as well as many other areas of health education and public health, including tobacco use prevention and substance abuse prevention. Given the emphasis on the individual and the environment—the latter of which has
become a major point of focus in recent years for health promotion activities (Kirby et al., 2011; Rhodes et al., 2012)—SCT has been used by some SRHE studies to assess the knowledge, beliefs and attitudes of parents, adolescents, school teachers and school nurses towards implementing school-based SRHE programs (Coyle et al., 2006; Dilorio et al., 2006; Eisen, Zellman, & McAlister, 1990; Kao & Manczak, 2013; Kinsler, Sneed, Morisky, & Ang, 2004; Koniak-Griffith & Stein, 2006; Thammaraksa et al., 2014). Social Cognitive Theory includes three factors, which are not covered in other theoretical frameworks and considers many levels of the social ecological model in addressing behaviour change of individuals (See Table 2.3 below). Implementing school-based SRHE programs is influenced by personal knowledge, skills, attitudes, beliefs and environmental influences (Kirby et al., 2011). All of these factors are addressed in SCT. For example, environmental factors of SCT include [Islamic] religion, culture, school policy, government support, and family norms. All these play an important role in influencing implementing school-based SRHE programs. Moreover, the personal and behavioural factors of SCT include the elements of localised knowledge, skills, beliefs and attitudes of participants towards the implementation of school-based SRHE programs (Dilorio et al., 2006). Social Cognitive Theory has been shown to assist researchers in the USA (Coyle et al., 2006; Dilorio et al., 2006; Kirby et al., 2011) and the UK (Wight & Abraham, 2000) to understand personal, behavioural and environmental facilitators and barriers that influence implementing school-based SRHE programs and suggest recommendations for school decision-makers to change the policies and overcome barriers (Bandura, 2001).

Other theoretical frameworks that have been used in SRHE studies, such as the TPB developed by Ajzen and Fishbein (1980); and the HBM developed by Hochbaum (1960) do not address the breadth of concepts like SCT. Therefore, understanding public health problems using these theoretical frameworks may be difficult especially in developing focused public health
programs, such as school-based SRHE programs. For example, the TPB is often criticised as being too rational, explains behaviours based on attitudinal and normative factors, does not address the knowledge or skill factor and is not adaptable to the Middle East and does not consider religion (Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Bosompra, 2001; Montano & Kasprzyk, 2008; Muñoz-Silva, Sánchez-García, Nunes, & Martins, 2007). Similarly, the HBM does not address personal beliefs and environmental factors (cultural factors) that influence the provision of school-based SRHE programs. Therefore, SCT is justified as a comprehensive and suitable theoretical framework to underpin the research questions of this study and examine the attitudes and beliefs of parents, school teachers, and school nurses towards the implementation school-based SRHE programs.
Table 2.3 The Factors of Social Cognitive Theory (Bandura, 2001)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Components of the factors</th>
<th>All three factors assisted to understand and examine the attitudes and beliefs of parents, school teachers and school nurse towards school-based SRHE programs such as:</th>
</tr>
</thead>
</table>
| Personal     | o Knowledge  
              o Understanding  
              o Attitudes   
              o beliefs    | • Support towards school-based SRHE programs (belief that these programs are useful programs to improve adolescents’ sexual health)  
• The topics that should include in SRHE Curriculum.  
• Appropriate age to start school-based SRHE programs  
• Appropriate person to conduct school-based SRHE programs  
• Methods to conduct school-based SRHE programs  
• Sexual and reproductive health knowledge |
| Behavioural  | o Skills  
              o Practice  
              o Self-efficacy  
              o Confidences   | • Needs for SRHE training courses  
• Confidence and comfort to conduct school-based SRHE programs |
| Environment  | o Culture  
              o Religion  
              o Social norms  
              o Family  
              o Peers  
              o Social media  
              o Governmental support  
              o Policies  
              o Community access  
              o Influence of others   | • Barriers and facilitators: the influence of culture, religion, family norms, friends, social media, governmental support, and policies in developing and implementing school-based SRHE programs. |
2.13 Summary

School-based SRHE programs play an important role in reducing adolescents’ sexual risk behaviour and promoting health and well-being. However, evidence indicates that in the Middle East, most adolescents do not have sufficient sexual and reproductive health knowledge including information about puberty, contraception, condom use, HIV, STIs, and other sexual health matters. This critical review of the literature on the attitudes and beliefs parents, school teachers, and school nurses regarding school-based SRHE programs—in the international context including Australia, Canada, the USA and the UK and in the Middle Eastern regions including Oman, Iran, UAE, KSA and Egypt—indicate that most parents, school teachers, and school nurses support implementing these programs to improve adolescent sexual health. Evidence also shows that parents, school teachers, and school nurses lacked the sexual health knowledge, did not provide the adolescents with sufficient sexual and reproductive health information and should receive SRHE training. Nevertheless, both international and Middle Eastern studies used a singular design and small sample sizes and were limited to the attitudes and beliefs of mothers, female school teachers and female school nurses. Furthermore, most of the Middle Eastern studies were conducted mainly in Iran. Further studies using a mixed-method design, two-phase explorative and descriptive design and involving both genders and all adult stakeholders involved in the development and implementation of school-based SRHE programs in other Islamic countries are required to confirm the consistency of these results. Hence this study was conducted.

This study’s methodologies including research design, study setting, participants’ recruitment, data analysis, the study’s rigors, and ethical consideration will be discussed in the following chapter.
Chapter 3: Methodology

3.1 Introduction

The research methodology is a system that describes the rules and procedures on which research is established and against which claims of knowledge are evaluated (Ojo, 2003; Schneider, Whitehead, LoBiondo-Wood, & Haber, 2013). This chapter presents the research methodology adopted for this current study in order to accomplish the research objectives. The study applied an explorative descriptive two-phase study design, using FGDs, IDIs, and a survey. Basic to understanding the research methodology, this chapter commences with a brief description of the terms ‘ontology’ and ‘epistemology’. Second, the research design and rationale are introduced, followed by a description of the study setting, sampling approach and the inclusion and exclusion of certain criteria in each phase. The approach to data collection interviews/instruments, procedure and data collection methods, data analysis, pilot study, and ethical considerations are also discussed.

3.2 An Overview: Ontology and Epistemology in Research

This section describes the terms ‘ontology’ and ‘epistemology’. These terms are fundamental concepts in general research and underpin all scientific studies. The two terms influence the researcher’s selection of research methodology (Bullock, Stallybrass, & Trombley, 1999).

Ontology refers to conceptions of existence and reality (Bullock et al., 1999; Ritchie & Lewis, 2003). Most social research is underpinned by the ontology of either a subjectivist or positivist conception of social reality. These are two opposing conceptions of social reality. In positivist research, the research design is based on an objective and logical analysis. Briefly, in positivist research, objective methodologies are applied to generate knowledge of a common,
universal world and the researcher is positioned outside of that reality (Hammond & Wellington, 2013; Ritchie & Lewis, 2003). In contrast, subjectivist research typically utilises a qualitative methodology and the researcher is positioned within a world that has multiple meanings and understandings (Hammond & Wellington, 2013). The core of qualitative research is to make the ‘world visible’ (Denzin & Lincoln, 2011, p. 3). In subjectivist research, it is also recognised that researchers are influenced by their gender and culture (Denzin & Lincoln, 2011). Hence, ontology is the basic driver of all research designs (Hammond & Wellington, 2013).

Epistemology is also considered an important concept that informs research. It refers to the researcher’s perspective of nature and acquisition of knowledge, which is socially, culturally, historically and linguistically produced (Bullock et al., 1999; Finlay & Ballinger, 2006). Basically, epistemology is inseparable from its ontology. That is, to obtain knowledge (epistemology), there is a basic need to know our conception of existence and reality (ontology) (Hammond & Wellington, 2013). Reasonably, the development of a research project is based on the epistemology and ontology adopted by the researcher. The ontology and epistemology establish the paradigm that researchers adopt in their research (Bullock et al., 1999; Hammond & Wellington, 2013). This study intended to use a mixed method approach whereby it began with qualitative [subjective] research to determine the subjective reality of key participants [parents, school teachers and school nurses] in school-based SRHE programs. Then based on that reality, it completed quantitative [objective] research to determine what parents of school age children in Oman think about school-based SRHE programs.

3.3 Research Design

A research design provides a framework for data collection and analysis to produce evidence to answer the research questions (Creswell, 2014, 2009; Schneider et al., 2013). A mixed-method design, two-phase sequential explorative and descriptive design employing identified key stakeholder FGDs and face-to-face in-depth IDIs (Phase one) and a parental self-administered
questionnaire (Phase two) was applied in this study. A mixed-method design provides a pathway to combine both quantitative and qualitative research in a single study (Creswell, 2014, 2009, 2007, 2005). In a mixed-method design, both quantitative and qualitative research supplement each other to provide complementary data that allows the researcher to make a complete analysis of the research problem (Creswell, 2014, 2005; Teddlie & Tashakkori, 2003). Moreover, a mixed methods design can help to increase the generalisability of the results and limit the influence of bias of each method by allowing the use of a wide range of data collection tools to address the research problem rather than being limited to one method (Creswell, 2014, 2005; Risjord, Moloney, & Dunbar, 2001). Furthermore, a mixed-method design provides the researcher with the opportunity to use triangulation and support the rigour of the study (Creswell, 2008; Huberman & Miles, 2002). Triangulation through mixed-methods facilitates validation of data from multiple sources, through cross-verification (Creswell, 2014).

A mixed-method design applied in this current study enabled the triangulation of quantitative and qualitative data to obtain a more comprehensive understanding of the research phenomena. The application of FGDs and IDIs in Phase one (qualitative) and a self-administered questionnaire in Phase two (quantitative) also enabled the researcher to examine the theoretical framework in-depth and to answer the research questions.

There are a number of studies that have used a mixed method design (a self-administered questionnaire and FGDs) to examine the attitudes and beliefs of parents, school teachers, school nurses and adolescents towards the introduction of school-based SRHE programs in the USA (Grossman et al., 2013; Orgocka, 2004; Pluhar & Kuriloff, 2004), Australia (Milton, 2003; Western Australia Department of Health, 2008), Thailand (Sridawruang et al., 2010; Vuttanont, Greenhaigh, Griffin, & Boynton, 2006), Fiji (Varani-Norton, 2014) and Nigeria (Oshi & Nakalema, 2005).
3.3.1 Phase One

For Phase one, a qualitative approach using FGDs and IDIs was employed to understand the whole phenomenon by exploring the participants’ views within a social and cultural environment and providing a detailed description of their experiences (Denzin & Lincoln, 2005; Krauss, 2005; Lincoln & Guba, 2000). Focus group discussions were the key data collection method used with parents, school teachers, and school nurses. Following on from the FGDs, face-to-face in-depth IDIs were conducted with the same participants of the FGDs. Face-to-face in-depth IDIs allowed the researcher to cross-check data from the FGDs and obtain further information. Both FGDs and IDIs allow for in-depth discussions and probing on any issues that help to understand the research problem more deeply (Huberman & Miles, 2002; Kamberelis & Dimitriadis, 2011). Focus group discussions encourage the participants to become more involved in the interaction and to elaborate on the topic (Huberman & Miles, 2002; Stewart, Shamdasani, & Rook, 2007). Moreover, it provides a high level of face validity, because participants’ concepts can be identified, confirmed and reinforced during the discussion process (Creswell, 2014). Furthermore, the FGDs allow participants to react and build upon the responses of other group members (Lambert & Loiselle, 2007; Stewart et al., 2007) and helps in developing health policies (Creswell, 2014). Hence, FGDs can facilitate the disclosure of more in-depth information than in IDIs (Lambert & Loiselle, 2007). Nonetheless, a potential limitation of FGDs is that the participants may feel inhibited to share their opinions if they do not feel part of the dominant culture within the group (Lambert & Loiselle, 2007).

Exploring the implementation of school-based SRHE programs is a sensitive and complex issue that cannot easily be examined and understood (nature of the research problem) by using only a self-administered questionnaire (Farrag & Hayter, 2014; McKay et al., 2014; Byers et al., 2008; Sridawruang et al., 2010). Thus, the combination of FGDs and IDIs was relevant in this
study to examine the attitudes and beliefs of parents, school nurses and school towards implementing SRHE programs.

3.3.2 Phase Two

In Phase two, a quantitative approach using a self-administered questionnaire was employed. Quantitative research helps to generate knowledge through direct measurements by testing the relationships between variables (Creswell & Plano Clark, 2007). A self-administered questionnaire enables information about a phenomenon, such as knowledge and the attitudes of participants to be examined (Creswell, 2008). Furthermore, a self-administered questionnaire can collect a large number of participant responses over a short period of time and is usually representative of the target population (Creswell, 2014). The data obtained from self-administered questionnaires and FGDs can assist the researcher to examine the utility of the theoretical framework (SCT) and its cultural appropriateness more fully in term of participants’ attitudes and beliefs, as well as social and cultural barriers (Creswell, 2014, 2005; Huberman & Miles, 2002). Therefore, a mixed-method design, two-phase explorative and descriptive design using FGDs, IDIs and a self-administered questionnaire constituted an appropriate approach to investigating the attitudes and beliefs of Omani parents, school teachers, and school nurses regarding secondary school-based SRHE programs.

3.4 Research Aim

The aim of this study—underpinned by the SCT (Bandura, 1977, 1997, 2001)—was to examine the attitudes and beliefs of parents, school teachers, and school nurses regarding school-based SRHE programs in Oman. An explorative approach using a two-phase sequential mixed method design was used to develop first-time baseline data regarding the barriers, facilitators, socio-cultural factors and challenges to the provision of these programs in Oman. It is intended that this study will help to inform policy and public health (education service) for the design and implementation of school-based SRHE programs in Oman and potentially other Muslim countries.
in the MENA region. This can result in improving sexual and reproductive health behaviours and the quality of life for adolescents and to support parents in understanding adolescent development.

3.5 Research Objectives and Questions

The overall objectives of this research study are:

1. Explore the attitudes and beliefs of male and female parents, male and female school teachers and female school nurses toward school-based SRHE programs in Oman.
2. Identify the facilitators and barriers to the provision of school-based SRHE programs in Oman.
3. Make recommendations to the Oman Department of Health and the Department of Education for the design and implementation of school-based SRHE programs in Oman.

The research questions in respect to the Omani cultural context are:

1. What are Omani parents’ attitudes and beliefs regarding school-based SRHE programs in Oman?
2. What are the similarities and differences in the attitudes and beliefs regarding school-based SRHE programs between male and female parents in Oman?
3. What are the school teachers’ (male and female) attitudes and beliefs regarding school-based SRHE programs in Oman?
4. What are the similarities and differences in the attitudes and beliefs regarding school-based SRHE programs between male and female school teachers in Oman?
5. What are the female school nurses’ attitudes and beliefs regarding school-based SRHE programs in Oman?
6. What are the current facilitators and barriers to the provision of school-based SRHE programs in Oman?
7. What are the current government’s policies to the provision of school-based SRHE programs in Oman?

3.6 Research Setting

Schools constitute an ideal setting to examine the attitudes and beliefs of parents, school teachers, and school nurses towards the introduction of school-based SRHE programs (Andrade et al., 2009; ARCSHS, 2017; Borawski et al., 2015; Kirby et al., 2009). In Oman, there are three types of public schools: primary school grades 1-4, secondary school grades 5-10 and high school grades 11-12. Furthermore, public schools in Oman are segregated by gender. All three types of public schools are divided into two types: (1) boys’ schools including only male school teachers’ and (2) girls’ schools including only female school teachers (Oman MOE, 2018). This current study was conducted in two Omani public secondary schools grades 5-10 (one boys’ school and one girls’ school) in a large district (Wilayat) named Saham. Saham, which is located in the North Al-Batinah region (See Figure 1.1 Map of Oman). This current study also de-identified to maintain privacy and confidentiality. Saham has both urban and rural areas with a large population and a high concentration of public schools and local health centres compared to other districts. However, it is representative of other vilayets in Oman (Oman MOE, 2018; Oman NCSI, 2018). In Oman, people share similar socioeconomic status and culture and public schools have similar structures, facilities, and services with science school teachers qualified with an undergraduate degree in science and Islamic teachers qualified with an undergraduate degree in Islamic studies (Oman MOE, 2018; Oman NCSI, 2018). Thus, the schools of district Saham can be considered as representative of schools in other regions in Oman.

The district of Saham has around 31 public schools in which 15 schools are classified as public secondary schools including eight boys’ schools and seven girls’ schools. Public secondary schools include boys and girls aged 10-15. In each school, there is one female school nurse, approximately 8 to 14 science school teachers, 8 to 10 Islamic school teachers and an average of
350 to 400 students in grades 7-9 (9-12 classrooms of grades 7-9 with 28-30 students in each classroom) (Oman MOE, 2018). This indicates that the average target population of parents including fathers and mothers is 500 in each school (See Table 3.1 below). The school Health Department and the Oman MOH are responsible for assigning school nurses to each school and supplying them with resources (Oman MOH & WHO, 2018).

Table 3.1 Public Secondary Schools Grades 5-10 in District Saham

<table>
<thead>
<tr>
<th>Number of the boys’ schools</th>
<th>Number of girls’ schools</th>
<th>Range of science teachers per school</th>
<th>Range of Islamic teachers per school</th>
<th>Number of female school nurses per school</th>
<th>Range of classrooms grades 7-9 in each school</th>
<th>Range of students per classroom: grades 7-9 per school</th>
<th>Range of students grades 7-9 per school</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>7</td>
<td>8-14</td>
<td>8-10</td>
<td>1</td>
<td>9-12</td>
<td>28-30</td>
<td>350-400</td>
</tr>
</tbody>
</table>

3.7 Sampling Approach

This section covers the sampling approaches and the criteria that were used to determine the inclusion and exclusion of participants for Phases one and two.

3.7.1 Phase One

In Phase one, two key participant groups (parents and school teachers) were invited to participate in the study. The participants came from two public secondary schools (one boys’ school and one girls’ school, grades 5-10) located in the Saham district. Two schools from a total of eight boys’ schools and seven girls’ schools were selected using the convenience sampling approach. These two schools were considered as representative of the rest. Moreover, female school nurses were invited to participate in the study from all 15 public secondary schools (grades 5-10) including eight boys’ schools and seven girls’ schools as there is only one female school nurse in each school.

In Phase one, all three cohorts: parents (mothers and fathers), school teachers (male and female) and female school nurses were recruited using the convenience sampling approach over a period of 15 weeks. Convenience sampling is in accordance with SRHE qualitative studies (Farrag
& Hayter, 2014; Kirby et al., 2007; Merghati-Khoei et al., 2014; Mosavi et al., 2014; Roudsari et al., 2013; Westwood & Mullan, 2006). It allows the researcher to include the most interested and most available people for participation in a study. It is considered an easy and economical way to access participants in a short period of time (Schneider et al., 2013).

3.7.1.1 Parents

Parents, including 15 fathers and 15 mothers (n = 30) from two public secondary schools (one boys’ school and one girls’ school) were invited to participate in the FGDs and IDIs. Fathers were invited from the boys’ school and mothers were invited from girls’ school. Parents’ inclusion criteria were:

- Male and female parents who have one or more children studying in grades 7-9.
- Citizens of Oman.
- Literate in the Arabic language.

3.7.1.2 School Teachers

Science and Islamic teachers (n = 43 teachers) including male and female participants from the same two public secondary schools, were invited to participants in the FGDs and IDIs. Male science and Islamic teachers were invited from the boys’ school while female science and Islamic teachers were invited from the girls’ school. Teachers’ inclusion criteria were:

- Both male and female Islamic and sciences school teachers who teach students grades 7-9.
- At least two years of teaching experience.
- Citizens of Oman.

3.7.1.3 Female School Nurses

The total population of 15 female school nurses from the 15 public secondary schools in the district of Saham—including both boys’ and girls’ schools—were invited to participate in the FGDs and IDIs. Female school nurses’ inclusion criteria were:
• Female school nurses working in public secondary schools.
• At least two years of working experiences.
• Citizens of Oman.

3.7.2 Phase Two

Parents (mothers and fathers) from same two public secondary schools that were used in Phase one, were invited to complete a self-administered questionnaire through the schools’ administration by an invitation letter (See Appendix E). A convenience sampling approach was used to recruit 250 parents comprising an equal number of mothers and fathers who met the eligibility criteria (125 Omani mothers and 125 Omani fathers of children studying in grades 7-9). A total of 241 questionnaires were returned. Two of the fathers’ questionnaires were excluded due to partial completion. The response rate for the questionnaires was 95.6% (n = 125 mothers; n = 114 fathers).

This convenience sampling procedure is in accordance with previous SRHE quantitative studies (Barr et al., 2014; McKay et al., 2014). The convenience sample allows for a large number of parents to be surveyed in a limited amount of time (Schneider et al., 2013). The final sample size is very important in producing valid and significant results (Creswell, 2014). A statistical power analysis was performed for sample size estimation. The effect size in this current study was 0.3, which is considered medium (Cohen, 1988). With an alpha = 0.05 and power = 0.95, the projected sample size was N = 147 (Creative Research Systems, 2007; Fink, 2003). The calculation showed that a sample size of 150 was required.

In the Middle East, the majority of quantitative SRHE studies were conducted in Oman (Jaffer et al., 2006; Mabry et al., 2007; Oman MOH & WHO, 2015, 2012), KSA (Alquaiz et al., 2012), UAE (Gańczak et al., 2007) and Iran (Khadijeh et al., 2015; Mohammodi et al., 2006). These studies reported a response rate of 90% with an attrition rate of 10%. However, to allow for
drop-out, the sample size was increased by 10% (Creswell & Plano Clark, 2007; Fink, 2003; Fink, 2009). Parents’ inclusion criteria were:

- Parents (mothers and fathers) who have one or more children studying in grades 7-9.
- Citizens of Oman.
- Literate in the Arabic language.

3.8 Justifications of Participants’ Inclusion and Exclusion Criteria

The inclusion or exclusion of the three key participants—parents, school teachers, and school nurses—plays an important role in developing and implementing effective school-based SRHE programs for adolescents (UNESCO, 2018). Strong evidence from the USA (Barr et al., 2014; Bleakley et al., 2006; Eisenberg et al., 2013; Borawski et al., 2015), Canada (Cohen et al., 2012; McKay et al., 2014; Weaver et al., 2002), UK (UK Department of Health, 2015; Turnbull et al., 2008; Westwood & Mullan, 2006, 2007), Australia (ARCSHS, 2017; Department of Health, Western Australia, 2008; Dyson, 2008; Duffy et al., 2013) and Ireland (Hyde et al., 2013) recommend that the attitudes and beliefs of these three key participants should be explored in order to implement successful school-based SRHE programs and improve adolescent sexual health. Furthermore, the inclusion of these three key groups of participants was also strongly recommended by school-based SRHE studies conducted in Middle Eastern countries, such as Oman (Jaffer et al., 2006; Oman MOH, 2010, 2008; Oman MOH & WHO, 2015, 2012), Iran (Merghati-Khoei et al., 2014; Mohammodi et al., 2006; Mohtasham et al., 2009; Mosavi et al., 2014), Egypt (Farrag & Hayter, 2014), KSA (Alquaiz et al., 2012) and the UAE (Gańczak et al., 2007). Additionally, the literature review showed that most SRHE studies—conducted in high schools from a diverse range of countries—investigated the attitudes and beliefs of parents, school teachers and school nurses of students studying in grades 7-9 (students aged 12-14) (Alquaiz et
Evidence indicates that the age group of the school children should be 12 to 15, which is a critical period of adolescent sexual development. In this age group, students experience puberty, masturbation, nocturnal emissions, menstruation, explore their sexual identity, increase their individual anatomy and self-esteem, potentially initiate sexual activity and are exposed to external influences. Hence, this age group is most in need of appropriate, responsive and targeted SRHE (UNESCO, 2018, 2009; UNFPA, 2014, 2009). Thus, parents, school teachers and school nurses who have experience with this age group were recruited to provide in-depth information about their attitudes and beliefs towards the introduction of school-based SRHE programs (Mckay et al., 2014).

In addition, in Oman, two years of experience for both school teachers and school nurses are required to ensure that both school teachers and school nurses are experienced and well-oriented to work, school polices, protocol and subjects. The inclusion and exclusion criteria of both Phase one and Phase two were utilised in several previous SRHE studies conducted in Middle Eastern countries such as Iran (Latifnejad-Roudsari et al., 2013) and Egypt (Farrag & Hayter, 2014) and non-Middle Eastern countries such as USA (Kirby et al., 2007, 2005) and Canada (Byers & Sears, 2012; McKay et al., 2014). Furthermore, the reason for inviting fathers from a boys’ school and mothers from a girls’ school was because Oman is an Islamic country (Oman NCSI, 2018) and usually Muslim women have limited interaction with men and would feel uncomfortable and embarrassed if required to attend a boys’ school (Farrag & Hayter, 2014; Mosavi et al., 2014; Tabatabaie, 2015a). Due to these reasons, in Oman, public schools are segregated by gender: boys’ schools with only male teachers and girls’ schools with only female teachers (Oman MOE, 2018). Normally, boys’ schools invite fathers only to discuss any issues related to male students or schools (each boys’ school has a fathers’ committee). In contrast, girls’ schools invite only mothers to discuss female students’ issues (each girls school has a mothers’ committee) (Oman MOE, 2018).
Given this was the first study of its kind in Oman and the traditional conservative nature of Omani society toward sexuality discourses, and the complexities and challenges of sourcing ethics from Oman MOE; schools; and parents it was considered inappropriate to include adolescents in this first study. The introduction and literature review chapters clearly showed that in Oman and other Middle East countries, the sexual discussion is considered taboo. Therefore, there is no sexual and reproductive health education in Oman and most parents, school teachers and school nurses avoid engaging in a sexual discussion with adolescents. However, gaining support from parents, school teachers and school nurses will help to change school and Oman MOE policies and allow SRHE studies with students that will lead to implementation and evaluation of school-based SRHE programs in Oman.

3.9 Recruitment

This section explains the approaches of data collection for Phase one and Phase two.

3.9.1 Phase One

This current study obtained ethical clearance from the RMIT Science Engineering & Health College Human Ethics Advisory Network (CHEAN) (Reference No. BSEHAPP 40-15) (See Appendix I) and approval from the Oman MOE (See Appendix J). Three key participants: (1) parents; (2) school teachers; and (3) female school nurses were contacted to participate in the FGDs as follows:

1) Parents (n = 30 including 15 mothers and 15 fathers) who met the study’s criteria were invited to participate in the FGDs by school administration through an invitation letter, which was delivered to them by their adolescents (invitation letter going out to the parents through the students) (See Appendix A). Fifteen parents (6 mothers and 9 fathers) who met the study criteria agreed to participate in two single-sex FGDs (one FGD with 9 fathers and one FGD with 6 mothers). Following on from the FGDs, two face-to-face in-depth IDIs were conducted three months later with two parents who were participants in the FGDs (one mother and one father) to confirm some of the key FGD findings.
2) All science and Islamic teachers (n = 43 including male and female teachers) who met the study’s criteria from both schools were contacted to participate in the study by school administration through an invitation letter via email (an email that school administration distributed to the potential participants) (See Appendix A). Twenty school teachers who met the study’s criteria agreed to participate in four single-sex FGDs. Following on from the FGDs, three face-to-face in-depth IDIs were conducted three months later with three senior school teachers who were participants in the FGDs (one male science teacher, one male Islamic teacher, and one female science teacher) to confirm some of the key findings of the FGDs.

3) Female school nurses (n = 15) who met the study’s criteria were contacted by the school administration of each school in the Saham District through an invitation letter via email (an email that school administration distributed to the potential participants) (See Appendix A). Five female school nurses who met the study’s criteria agreed to participate in one FGD. Following on from the FGD, one face-to-face in-depthIDI was conducted three months later with one senior female school nurse who was a participant in the FGD to confirm some of the key FGD findings.

The participants were informed about the purpose of the study and informed consent was obtained in writing from parents, school teachers and female school nurses before conducting the FGDs (See Appendix A). This is a common way currently used to contact parents in Oman. The participant information and consent form explained the purpose of the study and that their participation in the study was both voluntary and that they had a right to withdraw from the study at any time. An average of 4-10 persons per each FGD is considered an acceptable number to gain an in-depth understanding of research phenomena (Creswell, 2009) and is consistent with SRHE qualitative research (Department of Health, Western Australia, 2008; Farrag & Hayter, 2014; Hyde, Howlett, Brady, & Drennan, 2005). To ensure a complete in-depth understanding of the research questions in Phase one, the study was conducted using seven FGDs (5-9 persons in each FGD) and six follow-up IDIs (See Table 3.2 below).
Table 3.2 Recruitment and Data Collection Methods Summary

<table>
<thead>
<tr>
<th>Sample size</th>
<th>Site</th>
<th>Data Collection Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>A total population of female school nurses (n=15) from 15 public secondary schools grades 5-10 were invited to participate in one FGD by school administration of each school through invitation letter using email.</td>
<td>5 Female school nurses who met the study criteria agreed to participate.</td>
<td>All 15 public secondary schools grades 5-10 (eight boys’ schools and seven girls’ schools)</td>
</tr>
<tr>
<td>Parents (n= 15 mothers; n = 15 fathers) from two public secondary schools grades 5-10 were invited to participate in two FGDs</td>
<td>6 Mothers who met the study criteria agreed to participate.</td>
<td>One girls’ public secondary schools grades 5-10</td>
</tr>
<tr>
<td></td>
<td>9 Fathers who met the study criteria agreed to participate.</td>
<td>One boys’ public secondary schools grades 5-10</td>
</tr>
<tr>
<td>All science and Islamic teachers (n= 43) from same two public secondary schools grade 5-10 were contacted to participate in four FGDs by school administration through invitation letter using email.</td>
<td>5 Male Islamic teachers who met the study criteria agreed to participate.</td>
<td>Same one boys’ public secondary schools grades 5-10</td>
</tr>
<tr>
<td></td>
<td>5 Female Islamic teachers who met the study criteria agreed to participate.</td>
<td>Same one girls’ public secondary schools grades 5-10</td>
</tr>
<tr>
<td></td>
<td>5 Male science Islamic teachers who met the study criteria agreed to participate.</td>
<td>Same one boys’ public secondary schools grades 5-10</td>
</tr>
<tr>
<td></td>
<td>5 Female science Islamic teachers who met the study criteria agreed to participate.</td>
<td>Same one girls’ public secondary schools grades 5-10</td>
</tr>
</tbody>
</table>
Each FGD ran for 60 – 90 minutes and was guided by a set of semi structured interview questions. Focus group discussions were conducted in segregated gender groups—important in the context of Oman—in order to make the participants feel less hesitant to explore their perspectives on sensitive issues regarding the research topic (Farrag & Hayter, 2014; Merghati-Khoei et al., 2014; Sridawruang et al., 2010). At the commencement of each FGD, participants were asked to sign the informed consent form (See Appendix A). Upon completion of each FGD, participants: parents (Appendix B), school teachers (Appendix C) and female school nurses (Appendix D) were asked to complete a brief demographic questionnaire.

The FGDs of fathers, male science teachers, and male Islamic teachers were conducted in the Arabic language at the boys’ school using a private room with the researcher, during school official working hours. However, the FGDs of mothers, female science teachers, and female Islamic teachers were conducted at the girls’ school in Arabic using a private room, during school official working hours with a female school nurse, who was independent of the main study population. Prior to the onset of the study, the female school nurse was trained by the researcher as an FGD facilitator using a PowerPoint presentation and videotape lecture.

The FGD of female school nurses was conducted by the researcher in a school using a private room in the English language, during school official working hours. The reasons for conducting the FGD of female school nurses by the researcher using English language are that nursing programs in Oman are conducted mainly in English and designed to graduate professional female nurses with knowledge and communication skills enabling them to express their professional attitudes and to work as team with male and female healthcare providers and in both male and female hospital wards and schools (Sultan Qaboos University, College of Nursing, 2018). Moreover, in Oman, the professional language of healthcare providers in all hospitals and local health centres is English (Oman MOH & WHO, 2018).
3.9.1.1 Approach to Focus Group Discussions

The primary researchers established a relationship with the relevant school managers for assistance in conducting FGDs and IDIs with parents, school teachers and female school nurses and managing any potential risks. Moreover, the primary researcher was responsible for the follow up on the progress of the study in terms of the types of participants selected and data collection. He was also responsible for communicating with school managers regarding the role of the female school nurse facilitator to ensure that she had time to conduct the FGDs. The principal researcher was guided by and provided with important instructions and useful materials by his supervisory team about how to conduct successful and in-depth FGDs and IDIs including some websites, articles, books and YouTube links. The following are some of the instructions, which were applied by the principal researcher and female school nurse facilitator during data collection:

1. Participants were informed about the research aims and objectives and the definition and purpose of school-based SRHE programs.
2. All FGDs and IDIs opened with a brief reminder to the participants about their voluntary participation and their right to withdraw at any time.
3. An informal talk was used to commence all FGDs to establish some rapport in the short time available.
4. The issue of privacy and confidentiality with participants was then discussed.
5. The researcher then obtained consent from participants and secured permission to audio-record the FGDs and IDIs.
6. In the FGDs, the researcher was mindful to repeat questions in different ways to foster understanding, avoid using medical terms and avoid probing too deep too early in the interview.
7. Participants in FGDs were encouraged to participate and share their attitudes and beliefs towards school-based SRHE programs.
8. The discussion was focused on the research aim and objectives and the attitudes and beliefs of the participants were explored during FGDs until saturation was reached.
9. Participants who dominated the conversion in FGDs were managed.
10. The researcher wrote non-verbal notes of important aspects of the interviews and related research issues. These notes provided contextual information to support the data analysis (Creswell, 2014; Higginbottom, Pillay, & Boadu, 2013).

11. The FGDs and IDIs were conducted in a comfortable environment in schools without fear of any disruption.

12. The researcher obtained demographic data at the end of the FGDs.

13. At the end of all interviews, the participants were thanked for their time and contribution to the study.

In addition, during the pilot study of Phase one, the supervisory team provided the principal researcher with feedback including strengths and weaknesses about the transcriptions of the pilot FGDs in order to conduct successful FGDs. Moreover, after each FGD, transcriptions were written by the principal researcher who was guided by the supervisory team with comprehensive feedback about the quality of the FGD. The feedback included satisfaction with the data from the FGD and any issues that should be investigated more in the actual FGDs in order to reach saturation and answer research questions. Generally, all FGDs and IDIs were well conducted and all reached saturation.

3.9.1.2 Training of a Female School Nurse Facilitator

The primary research investigator was responsible for training a female school nurse facilitator on how to conduct the FGDs of female participants. First, the principal researcher met with the Head of School Nursing from the Sham district and discussed with her the aim and objectives of the study and the need for a female school nurse facilitator. The principal researcher then met with all female school nurses from the Sham district during their weekly meeting with the Head of School and discussed with them the aim of the study and the role of a female school nurse facilitator. One female school nurse volunteered to assist the principal researcher in conducting FGDs and IDIs with female participants. The female school nurse facilitator was 45 years old, held a bachelor’s degree in nursing and had 10 years of working experience in public
secondary schools. Additionally, she had experience in conducting some school health studies including surveys and interviews that were organised by the Oman MOH, the WHO, and the Oman MOE.

The female school nurse facilitator was trained by the principal researcher for two weeks for 2-4 hours per day before conducting her first FGD with female participants. The nurse facilitator was provided with comprehensive information about the study including the purpose of school-based SRHE programs, the study’s aims and objectives, research ethics, and instructions about how to conduct FGDs and IDIs with female participants with educational materials such as YouTube links and PowerPoint lectures. Moreover, the nurse facilitator was provided with a recording of the pilot FGD and was encouraged to attend the FGD with other female school nurses (conducted by the principal researcher) in order to have a general idea about how to conduct FGDs. In addition, the principal researcher met with the school nurse facilitator after each FGD for 1-2 hours after listening to the audio recording and provided comprehensive feedback including strengths and weakness of the conducted FGD. The school nurse facilitator was also encouraged to keep an audit trail about any problems she encountered during the study period.

3.9.2 Phase Two

After completion of Phase one, a convenience sample of 250 parents comprising an equal number of mothers and fathers of children aged 12 to 14 (grades 7 to 9) was drawn from Phase one, which included two public secondary schools (one boys’ school and one girls’ school). Participants were invited through the school administration to complete a self-administered questionnaire in Arabic, the national language of Oman (See Appendix E). The surveys—with an accompanying invitation letter—were delivered to the parents through their adolescents from grades 7 to 9. Classroom teachers distributed the surveys—which were sealed in private envelopes—to students in their class, with the request that they take them home to be filled out by their parents. Parents were asked to return the surveys in an attached enveloped with their
adolescents or submit them to the school administration. The completed surveys were then returned to the primary researcher. Parents were provided with participants’ information form (See Appendix E) and instructed that informed consent was implied and ensured by the submission of the completed survey. SMS and letter reminders were sent to parents who did not complete the survey within three weeks from the first invitation. A total of 241 questionnaires were returned. Two of the fathers’ questionnaires were excluded because they were incomplete. The response rate for the questionnaires was 95.6% (n = 125 mothers; n = 114 fathers).

This is the traditional method used in SRHE quantitative studies conducted in Middle Eastern countries such as Iran (Mohammadi et al., 2007; Mohtasham et al., 2009) and Western countries such as the USA (Barr et al., 2014; Grossman et al., 2013) and Canada (Byers & Sears, 2012; Byers et al., 2008; Weaver et al., 2002).

3.10 Instrumentation

This section outlines the data collection approaches of Phase one and Phase two.

3.10.1 Phase One

For Phase one (qualitative data), the WHO’s interview guide (See Appendix F) named: “Topics for individual in-depth interviews and focus group discussions: Partner selection, sexual behaviour, and risk taking”, developed by Ingham and Stone (2002) was adapted to conduct the FGDs and IDIs with further modification by a review of the relevant literature from the Middle East. The Ingham and Stone (2002) interview guide was translated from English to Arabic by the principal researcher and subjected to back-translation to ensure equivalency (WHO, 2018c).

3.10.1.1 Rigor of Phase One Instrument (Interview Guide)

Validity refers to the soundness of the arguments or quality of the interview guides (Creswell, 2014). This process was necessary to ensure that the questions in the guide were appropriate to generate the required content for the research (Creswell, 2014, 2007). More
importantly, the interview guides need to provide relevant and quality data to meet the research objectives and aims (Creswell, 2014).

In 1998, several organisations such as the UNFPA, the UNESCO and the WHO advocated for school-based SRHE and developed interventions and policies to improve the sexual and reproductive health of adolescents especially in middle and low-income countries (WHO, 2015). The interview guide was developed by the WHO to be adapted as appropriate by SRHE researchers (WHO, 2015) to explore the attitudes and beliefs of adolescents, parents, school nurses and school teachers towards school-based SRHE programs and create SRHE policies to implement these programs. It has been content validated and used by researchers in several countries such as Iran (Mohammodi et al., 2006; Mosavi et al., 2014), China (WHO, 2015), India (WHO, 2015), Kenya (WHO, 2015), Nigeria (WHO, 2015), Tanzania (WHO, 2015) and Thailand (Sridawruang et al., 2010). Researchers have indicated positive feedback and that the Ingham and Stone (2002) instrument was a useful and suitable interview guide to examine the attitudes and beliefs of parents, school teachers, and school nurses towards school-based SRHE programs. More importantly, the instrument contains questions relevant to the Middle Eastern culture (Mohammodi et al., 2006; Mosavi et al., 2014; WHO, 2015).

The Ingham and Stone (2002) guide consists of four sections: (1) sources of sexual health information; (2) sexual development; (3) risk taking behaviours; and (4) use of sexual health services. In this current study, section one was used solely with modifications made as dictated by the literature and the Omani culture, as it consists of questions designed to explore sexual health knowledge and sources, attitudes, beliefs, facilitators, barriers of parents, school teachers and school nurses towards implementing school-based SRHE programs (Ingham & Stone, 2002). Sections two, three and four include questions designed only for adolescents and, therefore they were not used in this study as adolescents were not part of the study sample.
The Ingham and Stone (2002) interview guide was modified according to school-based SRHE studies conducted in Middle Eastern countries such as Oman (Jaffer et al., 2006; Oman MOH & WHO, 2015, 2012), Iran (Merghati-Khoei et al., 2014; Mohammodi et al., 2006; Mohtasham et al., 2009; Mosavi et al., 2014), Egypt (Farrag & Hayter, 2014), KSA (Alquaiz et al., 2012) and UAE (Gańczak et al., 2007) and non-Middle Eastern countries such as the USA (Barr et al., 2014; Bleakley et al., 2006; Eisenberg et al., 2013; Howard-Barr et al., 2011; Kirby et al., 2011; Matza, 2012), Canada (McKay et al., 2014; Cohen et al., 2012; Weaver et al., 2002), the UK (Hayter et al., 2008; Turnbull et al., 2008; Westwood & Mullan, 2007, 2006), Australia (Department of Health, Western Australia, 2008; Duffy et al., 2013; Dyson, 2008; Milton, 2003) and Thailand (Sridawruang et al., 2010).

For example, an email was sent by the principal researcher to Prof. Mark Hayter (Consultant and Senior Nursing Educator, King Abdullah Medical City, Makkah Al-Mokaramah, Kingdom of Saudi Arabia; Associate Professor of Pediatric Nursing at the Faculty of Nursing, Mansoura University, Egypt and Faculty of Health and Social Care, University of Hull, Hull, UK) and Dr Shewikar Farrag (Nursing Consultant and Associate Prof of Paediatric Nursing, Faculty of Nursing, Umm Al-Qura University, KSA) to obtain their validated interview guide regarding their recent study titled: ‘A Qualitative Study of Egyptian School Nurses’ Attitudes and Experiences Toward Sex and Relationship Education’ (Farrag & Hayter, 2014). The interview guide was obtained and critically reviewed by the principal researcher and the supervisory team and was compared with the study’s interview guide. The interview guide of Farrag and Hayter (2014) showed similar questions and concepts to the interview guide of the current study including cultural and religious questions. The attitudes toward discussing sexual matters with opposite genders (question six) and attitudes toward Islamic religious views of SRHE programs (question
7) were incorporated into the interview guide consistent with a review of the relevant literature from the Middle East and feedback from the supervisory team (See Appendix F).

During the process of obtaining ethical approval from the Oman MOE, the interview guide was assessed by the Oman MOE, Studies, and Development Department and was considered to be relevant to the Omani culture and appropriate to be conducted in Omani schools. Before the interview guide was piloted, content validation of the interview guide (See Appendix K) was assessed by two independent expert assessors who have experience and knowledge in the Middle Eastern culture regarding adolescents’ school-based SRHE programs. The following two nominees were fully supported by the supervisory team to assess the content validity of the interview guide for clarity, appropriateness, and relevancy to Middle Eastern culture including Oman:

1) Mr. Nasser Majid Al Salmi, (RN, MSN, A-G CNS, PhD on progress) is an Omani male nursing researcher and has experience in the field of public health including SRHE in the Middle East. He is a lecturer at the Adult Health and Critical Care Department, College of Nursing, Sultan Qaboos University, Oman.

2) Ms. Rahma Albuleshi (Post-Graduate Diploma in School Health, BSN, RN) is an Omani female school nurse and has 16 years of experiences in school health education in Oman including SRHE. She is Head of School Nursing at Saham District in Oman. Due to her experiences with Omani culture and Omani school health, her views and contributions in assessing the content validity of the interview guide were very important to examine the cultural relevancy of the survey for the Middle East.

The interview guide for parents, school teachers, and female school nurses were considered highly relevant to Omani culture in terms of its clarity, appropriateness and the relationship of each question item by above-mentioned two assessors using a 4-point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = quite relevant and 4 = very relevant) (See Appendix L). Thus, no revisions were required. Note, the two expert assessors reported the following comments regarding the study’s interview guide:
“Your PhD research project is worthwhile and will provide baseline data for School Nursing in SRHE. I agree that your interview questions are highly relevant and appropriate for Omani culture. All questions are clear and will help to obtain more in-depth information about school-based SRHE programs in Oman. Moreover, obtaining approval from the Oman Ministry of education indicates that your research project is valuable for school health and the interview questions are relevant to Omani culture” (Ms. Raham ALbulshi).

“The interview questions are highly relevant and are well related to the Omani culture. This kind of research will help the Oman society to explore and improve the SRHE. I strongly believe this research will open doors for more discussions and other research topics in the future. All the best and we are anticipating to know the research results” (Mr. Nasser Majid Al Salim).

3.10.2 Phase Two

A self-administered questionnaire titled: “Survey on Parent Attitudes towards Sexual Health Education” developed by Weaver et al. (2002) (See Appendix G) was adapted to examine the attitudes and belief of parents towards school-based SRHE programs in Phase two. Further modifications were made after a review of the relevant SRHE literature from the Middle East region as well as the qualitative results drawn from Phase one of this study (FGDs and IDIs with parents, school teachers, and school nurses). Weaver et al.’s (2002) survey was administered to the parents in Arabic, the national language of Oman. The method of forward and back-translations was used in order to check the accuracy of the Arabic version of the survey and to ensure that the meanings were equivalent (WHO, 2018c). First, the Weaver et al.’s (2002) survey was translated from English to Arabic language by the principal researcher, then from Arabic to English by an independent translator: Abdullah Al Rawahi; an academic English teacher from Sultan Qaboos University who had no knowledge of the questionnaire [holding PhD and Master Degree of Teaching English to Speakers of Other Languages].
Weaver et al.’s (2002) questionnaire comprised of five parts. School-based SRHE was defined at the beginning of the questionnaire. Part A examined the parents’ attitudes and beliefs toward school-based SRHE programs using 5-point Likert scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree), such as whether SRHE should be provided in schools and whether the school and parents should share responsibility for providing adolescents with SRHE. In addition, in part A, parents were asked to indicate the grade level at which they thought SRHE should begin (1-3, 4-5, 6-8, 9-12, or should not be provided) and the quality of the SRHE that their adolescents had received in school.

In Part B of the survey, parents were asked to rate on a 5-point scale (1 = not at all important, 2 = somewhat important, 3 = important, 4 = very important, 5 = extremely important), the importance of including each of the ten different topics in a SRHE curriculum: personal safety, abstinence, puberty, sexual decision-making in dating relationships, reproduction, STIs, sexual coercion and sexual assault, birth control methods and safer sex practices, correct names for genitals and sexual pleasure and enjoyment. In Part C of the survey, parents were asked to indicate the grade level at which they thought schools should begin teaching each of the 26 SRHE topics (1-3, 4-5, 6-8, 9-12, or should not be included). Part D required parents to evaluate the level of comfort and sexual health knowledge in conducting SRHE with their adolescents at home. Additionally, parents were provided with the same list of ten SRHE topics as in part B but were asked to evaluate on a 4-point scale (1 = not at all to 4 = in a lot of detail) the depth of discussing these sexual health topics with their adolescents at home. Finally, in Part E, parents were asked to indicate the extent to which they were comfortable with their adolescents receiving SRHE from six different sources (parents, school teachers, school nurses, friends, religious leaders, and the media) and their demographic information (gender, age, religion, the age of children and education level).
3.10.2.1 Reliability and Validity of Phase Two Instrument (Parent Survey)

The accuracy of measurements in a study is influenced by reliability and validity. Reliability is known as the extent to which an instrument consistently measures what it is intended to measure, meaning that repeated use of the instrument must accomplish similar values (Babbie, 2013; Creswell, 2014, 2009). Reliability of an instrument is commonly checked using the criteria of Cronbach’s alpha. When the alpha score is close to one, the instrument is measuring its internal consistency (Creswell, 2014, 2009). The point close to one is generally seen as suitable for reflecting the construction of measurements. It indicates that, if respondents answer ‘agree or disagree’ on any one item of the survey, they will strongly agree or disagree with the overall concept (Creswell, 2014, 2009). Weaver et al.’s (2002) survey has been reported to have an internal consistency of 0.86 (Byers et al., 2008) and 0.90 (Byers & Sears, 2012). Reliability statistics for the survey items after the modifications were calculated. More importantly, the survey showed good internal consistency with a Cronbach's Alpha of 0.8.

Validity is known as the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform (Babbie, 2013). Expressed differently, a valid tool accurately measures what it is purported to measure (Creswell, 2009, 2005; Schneider et al., 2013). Weaver et al.’s (2002) survey was validated and used to assess the attitude and beliefs of 4200 Canadian parents with different cultural backgrounds (Weaver et al., 2002). Moreover, it was validated and used in other Canadian SRHE studies (Advisory Committee on Family Planning, 2008; Byers & Sears, 2012; Byers et al., 2008; McKay et al., 2014). Recently, it was validated and used to assess the attitudes and beliefs of 1140 Indian adults including Muslim parents towards the provision of school-based SRHE programs (O’Sullivan et al., 2018). This indicates that the study’s survey is measuring what it is supposed to measure (Creswell, 2005, 2009). Weaver et al.’s (2002) survey was considered more suitable for this current study, as it includes questions that are culturally relevant and more comprehensive to examine the parents’ attitudes and beliefs towards
school-based SRHE programs in Middle Eastern countries, including Oman. In this current study, the questionnaire was modified in light of the findings of FGDs and IDIs in Phase one and the relevant literature. It was also piloted before it was used to collect information in this current study (Creswell, 2008, 2005).

Weaver et al.’s (2002) survey was modified according to SRHE studies conducted in Middle Eastern countries such as Oman (Jaffer et al., 2006; Oman MOH & WHO, 2015, 2012), Iran (Merghati-Khoei et al., 2014; Mohammodi et al., 2006; Mohtasham et al., 2009; Mosavi et al., 2014), Egypt (Farrag & Hayter, 2014), KSA (Alquaiz et al., 2012) and UAE (Gańczak et al., 2007) and non-Middle Eastern countries such as the USA (Barr et al., 2014; Bleakley et al., 2006; Eisenberg et al., 2013; Howard-Barr et al., 2011; Kirby et al., 2011; Matza, 2012;), Canada (McKay et al., 2014; Cohen et al., 2012; Weaver et al., 2002), the UK (Hayter et al., 2008; Turnbull et al., 2008; Westwood & Mullan, 2007, 2006), Australia (Department of Health, Western Australia, 2008; Duffy et al., 2013; Dyson, 2008; Milton, 2003) and Thailand (Sridawruang et al., 2010). An annotated survey was completed and reviewed by the supervisory team to ensure that the right questions were asked and that there were no missing or extra questions in the survey. In the annotated survey, in-depth descriptions for each question—and whether they required amendments (with justifications) and if they were consistent with brief results from the FGDs and IDIs and SRHE literature from the Middle East—were reported. Interestingly, most survey questions were consistent with the qualitative results of Phase one and only minor modifications were made. The modifications made in the survey are described below.

In part A of the survey, there are six questions (See Appendix E). Questions A1, A3, A5 and A6 did not require any modifications. These questions were reviewed and approved by the supervisory team. They were appropriate for the Omani culture and consistent with SRHE literature conducted in Middle Eastern countries, including Oman and with brief qualitative results
from Phase one (FGDs and IDIs of parents, school teachers, and female school nurses). Question A2 was added in the survey (See Appendix E) based on the brief results of Phase one, Middle East SRHE literature and feedback from the supervisory team. Only question A4 required a minor amendment. In this question, school grades were modified according to Omani school grades (See Appendix E). In Oman, schools are classified into three grades: (1) Grades 1 to 4; (2) Grades 5 to 10; and (3) Grades 11 to 12. This question was appropriate for Omani culture and consistent with Middle East SRHE literature and the brief qualitative results from Phase one.

**Part B of the survey** did not require any modifications. The question was appropriate for Omani culture and consistent with SRHE studies conducted in Middle Eastern countries and with brief qualitative results from Phase one. This question was reviewed and approved by the supervisory team.

**Part C of the survey** required minor modifications. School grades were modified according to Omani school grades (Grades 1 to 4; Grades 5 to 10; Grades 11 to 12). Likewise, the sexual health topics in part C were appropriate for Omani culture and consistent with SRHE studies conducted in Middle Eastern countries and the brief qualitative results from Phase one. This question was reviewed and approved by the supervisory team.

**Part D of the survey** had six questions. Questions D1, D2, D3 and D5 did not require any modifications. They were appropriate for Omani culture and were compatible with SRHE literature conducted in Middle Eastern countries and the brief qualitative results from Phase one. The sexual health topics of question D5 were similar to part B and C. Question D4 was added according to the brief results from Phase one and was approved by the supervisory team. This question was added to distinguish between scientific sexual health knowledge and Islamic sexual knowledge. Question D6 was added in the survey. It was consistent with SRHE studies conducted in Middle Eastern countries and the brief results from Phase one. Evidence shows that parents, school
teachers, and school nurses are uncomfortable in providing SRHE to the opposite sex (Farrag & Hayter, 2014; Mosavi et al., 2014). Question D7 was about the need for SRHE training. It did not require any amendments. It was appropriate for Omani culture and consistent with SRHE studies conducted in Middle Eastern countries—and non-Middle Eastern countries—coupled with the brief qualitative results of Phase one. Evidence has shown that the majority of parents lack the scientific sexual health knowledge and want to receive SRHE training (Barr et al., 2014; Mckay et al., 2014; Mosavi et al., 2014).

**Part E of the survey** consists of four demographic questions (E1-E4) [level of education, type of sex, age, and gender of their children studying in grades 7-9]. These questions did not require any modifications. It was appropriate for the Omani culture and consistent with SRHE studies conducted in Middle Eastern countries and non-Middle Eastern countries.

During the process of obtaining ethical approval from Oman MOE, the study survey was critically assessed by the Oman MOE, Department of Studies and Development and was considered to be highly relevant and appropriate for the Omani culture. Moreover, before the survey was piloted, content validation of parents’ survey (See Appendix M) was assessed by two independent expert assessors who have experience with Middle Eastern culture and school-based SRHE programs. The following two nominees were fully supported by the supervisory team to assess the content validity of parents’ survey for culture appropriateness for the Middle East:

1) Dr. Shewikar Farrag (PhD, MSc, RN); Consultant and senior nursing educator at King Abdullah Medical City and Umm Al-Qura University, Makkah Al-Mokaramah, Kingdom of Saudi Arabia, Associate Professor of paediatric nursing at the faculty of nursing, Mansoura University, Egypt, faculty of health and social are, University of Hull, Hull, UK. She is a female nurse researcher from Egypt. She has experience with the Middle Eastern culture and adolescents school-based SRHE programs. She has conducted some studies related to school-based SRHE in the Middle East region (Farrag & Hayter, 2014).
2) Ms. Rahma Albuleshi (Post-Graduate Diploma in School Health, BSN, RN); Head of school nursing at Saham District in Oman. She is a female school nurse from Oman. She has 16 years of working experience with school health in Oman including school-based SRHE. Due to her experiences with the Middle East culture and school-based SRHE in Oman, her views and contributions in assessing the content validity of parents’ survey were very important in order to examine the culture relevancy of the survey for Oman.

The study was considered highly relevant for the Omani culture in term of its clarity, appropriateness and relevance and the relationship of each question item by the above mentioned two assessors (See Appendix N) using a 4-point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = quite relevant and 4 = very relevant). Thus, no revisions were required. This is because the study’s survey was modified in light of the findings of Phase one and relevant SRHE literature conducted in Middle Eastern countries. Note, the two independent assessors reported the following comments about the study’s survey:

“I did enjoy reading through the research tool. I can confirm that is quite relevant to Arab Middle-Eastern culture and could be easily matched with Islamic communities. I guess it will be a good reference for future researchers who intend to work in sexual and reproductive health. Thanks for giving me the opportunity to participate in your study” (Dr. Shewikar Farrag).

“According to my experiences in school health, I believe that a parent survey is very relevant for the Middle East culture including the Omani culture. The questions are very clear and do not conflict with Islam or the values, norms, and beliefs of the Omani culture. The survey will help to provide in-depth information regarding parents’ attitudes towards sexual health education in Omani schools. In addition, I would like to indicate that obtaining approval from Omani Ministry of education shows that your study—including the parent's survey—has been assessed by the Omani Ministry of education’s ethical department in terms relevancy and appropriateness for Islam and Omani culture and is considered a valuable project. Thank you” (Ms. Rahim Al buleshi).

In addition, before starting the piloting process, the survey was also reviewed by two in-charge science school teachers, two female school nurses and two school managers, independent
of the main study sample. All reviewers reported that the study’s survey did not conflict with Omani culture and will provide baseline data regarding parental attitudes and beliefs towards implementing school-based SRHE programs in Oman.

3.11 Pilot Study

A pilot study was conducted for Phase one and Phase two, but independent of the main study sample. This section outlines the approach and strategies that were used to conduct the pilot study for Phase one and Phase two.

3.11.1 Phase One

Two pilot FGDs was conducted: one among fathers and one among male science school teachers from different schools in the Saham distract who met the inclusive criteria and who were independent of the main study. The school’s administration of one school was contacted by the principal researcher and provided with an invitation letter, project information statement, RMIT ethical approval, and the Oman MOE’s approval letter. Male science teachers who met the study’s criteria were invited to participate in the study by school administration through an invitation letter using email (an email that school administration distributed to the potential participants). Fathers who met the study criteria were invited to participate in the study by the school administration through an invitation letter, which was delivered to them by their adolescent sons (invitation letter going out to the parents through the students). The school administration organised the time and a private room to conduct the FGDs on the school’s premises. Five male science teachers participated in one FGD and five fathers participated in one FGD. The time of each FGD ranged from 60 to 90 minutes. The FGDs were conducted during school working hours in a quiet room with good lighting and a comfortable temperature.

The pilot FGDs assessed the appropriate time length (testing for timing) required to conduct FGDs in order to obtain in-depth information regarding the research questions. Moreover, the pilot FGDs provided an opportunity to examine the clarity of the interviews’ questions such as
questions on religion and gender issues and that the interview collected information appropriate for the research (Creswell, 2005). In both FGDs, there were no dominant participants. They were all very cooperative and happy to participate in the study and provided in-depth information regarding their attitudes and beliefs towards school-based SRHE programs in Oman. Non-verbal communication visual cues including body language, distance, appearance, voice patterns, eye contact and the actions of looking while talking and listening indicated that participants were not shy or stressed (all appeared very relaxed) during the FGD. All participants-maintained eye contact and chatted with each other and with the researcher about their views and opinions towards school-based SRHE programs. At the end of each FGD, participants were asked if they had any comments about the study and the FGD including the interview guide. All participants indicated that this study was very important to be conducted in Oman as these days, many Omani adolescents receive incorrect and inappropriate sexual information from their friends, the Internet, and social media. They believed that this study will help to create a policy for the implementation of school-based SRHE programs and improve adolescent sexual health in Oman. Additionally, most participants reported that the length of the interview was acceptable and interview questions were clear and understandable. Thus, no revisions were required for the interview guide.

3.11.2 Phase Two

Pilot testing is considered one of the certain measures that are used to examine the validity of an instrument. It ensures the validity of the instrument by examining the potential misunderstanding and errors of the questions (Creswell, 2014). In Phase two, a pilot study was conducted among 30 parents (10% of the study’s sample size) comprising an equal number of mothers and fathers of children aged 12 to 14 (from grades 7 to 9) who met the inclusive criteria and who were independent of the main study (Creswell, 2005). The study’s survey was piloted in different schools to assess content validity and cultural nuances. Twenty-seven parents returned the surveys (response rate = 90%; n = 14 mothers; n = 13 fathers). The data of the pilot survey was
analysed using SPSS. The mean, median, mode and standard deviation (SD) were calculated for each variable.

The pilot study provided an opportunity to determine the appropriateness of the instrument, identify limitations and problems associated with the application of the instrument (Creswell, 2005) and assessed the appropriate length of time required to conduct the survey. Moreover, it helped to identify any modifications that would improve the clarity of the survey. The data of the pilot study was not included in the main study (Creswell, 2005). More importantly, the data of the pilot study was consistent with SRHE studies conducted in Middle Eastern countries. The questions of the survey were answered by all the participants showing that surveys' items were clear and understandable.

3.12 Data Analysis

This section outlines the data analysis methods that were used for the qualitative (Phase one) and quantitative data (Phase two).

3.12.1 Phase One

First, all FGDs and IDIs were recorded and then transcribed verbatim by the principal researcher. Each tape was listened to several times by the principal researcher during the transcription and after transcription to check the typed text. Second, the transcripts of each FGD and IDI were read and reviewed several times to understand the whole phenomena of the research questions. Then, the data was de-identified, reduced and coded. The final coding structure was reviewed by the principal researcher and the supervisory team to ensure the reliability of the qualitative data. A thematic analysis was employed (Braun & Clarke, 2006; Creswell, 2007; Hsieh & Shannon, 2005). After that, the coded data was categorised into themes. The data was analysed using NVivo qualitative research software (QSR International, 2015). Furthermore, the qualitative data was analysed using two stages:

- Stage one: The findings of each FGD was analysed separately (within group analysis).
• Stage two: compression between the groups (cross groups analysis; convergent and divergent themes) was conducted in order to understand the differences between the groups and identify, analyse and produce themes within the data (Carey & Asbury, 2012).

The stages of a thematic analysis include sketching ideas, taking notes, summarising field notes, reading transcripts several times, working with words, identifying codes, reducing codes into themes, counting the frequency of codes and displaying data (Braun & Clarke, 2006; Creswell, 2007). The use of a thematic analysis clarifies the attitudes and beliefs of participants towards school-based SRHE programs (Creswell, 2007). Phase one demographic sheets of parents, school teachers, and school nurses were analysed and reported. In addition, response and attrition rate and refusal numbers (with possible reasons) were collected and analysed.

By the end of Phase one, data saturation was achieved, as there was no new information emerging during the final coding (Creswell, 2014, 2007; Morse, 2002). The principal researcher and supervisory team witnessed data saturation by the end of the seventh FGDs (new categories and explanations stopped emerging). In this current study, the final stage of the thematic analysis revealed a general summary of the phenomenon including main themes and related sub-themes. This was checked by the principal researcher (PhD student) and the supervisory team.

3.12.2 Phase Two

The analysis of the quantitative data was performed using the Statistical Package for Social Sciences (SPSS version 24.0). Descriptive statistics including mean, median, mode, percentage, and SD were calculated for each variable. Parents’ demographic data, response, and attrition rate and refusal numbers with possible reasons were analysed. Moreover, parametric statistics including independent-sample t-tests were used to identify any significant differences between fathers and mothers regarding their attitudes and beliefs towards school-based SRHE programs. The one-way analysis of variance (ANOVA) was also used to assess the influences of education level and age on parental attitudes and beliefs towards school-based SRHE programs.
3.13 Rigor of Phase One

This section presents the concepts of rigor as applied in Phase one of the study in order to ensure the high quality of the qualitative data. These concepts were credibility, transferability, triangulation, and confirmability (Hoskins, 2004; Lincoln & Guba, 2000, 1985). The term ‘rigor’ refers to the quality processes engaged in the research. Rigorous scientific research is synonymous with trustworthiness (Lincoln & Guba, 2000, 1985).

3.13.1 Credibility

Credibility is defined as confidence and reasonable interpretation of the qualitative data (Hoskins, 2004; Lincoln & Guba, 2000, 1985; Morse, 2002). The aim is to explore the participants’ views that are required to understand research questions and to interpret their views in the fullest possible sense. The concept of credibility involves determining that the study findings are credible or believable from the perspective of the participants. In this current study, credibility was ensured through the following strategies: member checking, peer-debriefing, prolonged engagement, persistent observation, audio recorder, notes, audit trial and nonverbal recordings (Lincoln & Guba, 2000, 1985). Also, the participants had the opportunity to use their own words to explore their views regarding school-based SRHE programs.

Member checking involved returning to the participants and clarifying with them whether the findings of the interview represented their views. It helped to understand and summarise the participants’ views more clearly and correct errors and wrong interruptions (Lincoln & Guba, 2000, 1985). At the end of each FGD, member checking was conducted by summarising and clarify the main points of the discussion with participants. Moreover, peer-debriefing was performed through regular meetings with the supervisory team to guide and correct any issues associated with the research proposal. Prolonged engagement and persistent observation were achieved by spending sufficient time with participants in order to become oriented to the situation and to obtain in-depth understanding regarding participants’ views (Hoskins, 2004; Lincoln & Guba, 2000,
The findings can be considered credible if there are data (quotes) to support them. In this study, triangulation was also applied to increase the credibility of the findings of Phase one (Lincoln & Guba, 2000, 1985).

3.13.2 Triangulation

Triangulation is one of the most common procedures to validate the data and increase the rigor of a research study. It refers to the use of multiple data sources to investigate the research question (Creswell, 2008, 2005). Triangulation adds credibility and confidence to the study findings (Creswell & Miller, 2000). In this current study, the triangulation focused on identifying the convergence and divergence of findings from each research participant (parents, school nurses and school teachers) (Creswell, 2008). Convergence refers to the consensus of findings, while divergence suggests disagreement in relation to findings between the participant groups (Creswell, 2008). Divergences in findings are welcomed because they provide a more in-depth understanding of the phenomenon of interest (Creswell, 2008, 2005). In this current study, the process of comparison continued within and between the three groups of research participants. This process helped to provide a comprehensive picture of the phenomenon being studied (Creswell, 2008; Lincoln & Guba, 2000, 1985). For example, in this current study, the findings from the FGDs of parents were triangulated with the findings from the FGDs of school nurses and school teachers to generate a comprehensive understanding of implementing school-based SRHE programs in Oman. Moreover, in this study, the two methods of data collection and the themes from Phase one were compared and contrasted with the quantitative results from Phase two to ensure the quality of research findings. For example, the findings from the FGDs and IDIs of parents were compared and contrasted with the findings of the parental survey.
3.13.3 Transferability

Transferability or generalisability of the research refers to the wider application of the research results in other settings or participants as part of the trustworthiness of the research. It represents the amount of information provided within the framework of the study (Creswell, 2008; Morse, 2002). It can be achieved by providing a comprehensive description of the research participants’ background and setting (Lincoln & Guba, 2000, 1985; Morse, 2002). Transferability helps other researchers to decide whether the study participants and setting are relevant to their participants and setting and whether they can apply the findings to their own area of practice (Lincoln & Guba, 2000, 1985). In this current study, transferability was ensured by providing clear information regarding the study participants (inclusion and exclusion criteria), setting, data collection, and data analysis. Transferability was also ensured by linking findings to specific groups such as fathers versus mothers.

3.13.4 Confirmability

Confirmability refers to the extent to which the results of a study are derived from the participants and not from researcher bias or self-interest (Hoskins, 2004; Tobin & Begley, 2004). It confirms that results are in line with the descriptions and meanings intended by the participants (Creswell, 2008). Hoskins (2004) indicates that confirmability is the validation of findings, conclusions, and recommendations by the data obtained. In this current study, confirmability was achieved by maintaining a clear audit trail and member checking throughout the study. Member checking involves checking the description and interpretation of the findings with the research participants (Creswell, 2008). The member checking process was integrated with the data collection process. For example, during the FGDs, the participants were asked to clarify and expand on the information provided and to consider the accuracy of the summary at the end of the interview. In addition, member checking was conducted with the participants of FGDs in this study. Following the FGDs, face to face, IDIs were conducted with two parents, three school
teachers and one school nurse who were participants in the FGDs. This contributed to strengthening the rigor of the study (Creswell, 2008). Moreover, the audio recording and written notes of the participants’ views helped to facilitate credibility and confirmability of the data collection process (Lincoln & Guba, 2000, 1985).

3.14 Ethical Considerations

3.14.1 Human Research, Ethics Approval and Participants’ Consent

Approval to recruit the participants was obtained from the RMIT Science Engineering & Health College Human Ethics Advisory Network (CHEAN) (Reference No. BSEHAPP 40-15 /See Appendix I). Moreover, approval from the Oman MOE was obtained before conducting this study at the selected schools in Oman (See Appendix J).

Parents, school teachers and female school nurses who were eligible for the study were provided with adequate information about the study’s purpose, methods, risks, and potential benefits and contact information for any enquiries (National Health and Medical Research Council, 2007, p. 19). According to the National Statement on Ethical Conduct in Human Research (2007) and previous research on school-based SRHE programs (Farrag & Hayter, 2014; Kirby et al., 2007; McKay et al., 2014), participants’ written consent was required in Phase one while in Phase two, completing the questionnaire ensured consent. Participants in both Phase one and Phase two were informed that their participation was voluntary and that they had the right to withdraw from the study at any time or to refuse to answer any particular question and that the information would be used only for the purposes of this study. Participants received a participant information form in both Phase one (See Appendix A) and Phase two (See Appendix E) and were invited to sign an informed consent form before conducting FGDs. The form explained to the participants the purpose of the study, the right to refuse to answer any questions, the right to withdraw, the research method, risks, potential benefits and information on how to contact health professional counsellors at Saham hospital. Furthermore, approval to use a WHO instrument in Phase one—developed by
Ingham and Stone (2002)—and a self-administered questionnaire in Phase two developed by Weaver et al. (2002) (See Appendix H) was obtained before commencing this research.

3.14.2 Potential Risks Associated with the Study

According to the National Statement on Ethical Conduct in Human Research (2007), research may result in physical or psychological harm, discomfort or inconvenience for participants. In this current study, participants’ attitudes and beliefs towards school-based SRHE programs were assessed using FGDs and a self-administered questionnaire. This study did not include any interventions. Therefore, physical harm was not anticipated (National Health and Medical Research Council, 2007). However, a management plan regarding participants’ distress during the FGDs was made by the primary researcher before conducting the study: (if any distress were to occur due to the nature of the subject being discussed, participants would have been advised that they could withdraw at any time and additionally, there was information provided in participants’ information form to contact a health professional counsellor at Saham hospital). None of the participants were distressed during the FGDs and the IDIs.

The participants’ confidentiality was maintained by replacing their names with codes. Participant personal details did not appear anywhere in the study’s results, nor the data collection sheets, or final reporting of results in the thesis, or subsequent publications. A number was assigned to each participant on the data collection sheet that only the researcher had access to; ensuring privacy of information. In addition, the data regarding FGDs, IDIs, completed study questionnaires and the software of the study was stored in locked files and on a password protected computer. A USB storage device was used to back-up the study data and stored in a secure place. Participants were informed that ethical guidelines require that the research data will be kept secure at the researcher’s university for a period of five years before being destroyed.
3.15 Summary

This chapter described a comprehensive justification for the mixed-method approach and why both quantitative and qualitative data were collected and analysed. This chapter provided an inclusive description of the design and methods used in this current study. A convenience sampling technique was used for data collection in Phase one and Phase two. The survey and focus group interviews guide utilised in this study were described and the reliability and validity trustworthiness methods outlined. The pilot study provided a valuable perspective regarding the practicalities of conducting the survey and FGDs with the participants. The processes applied to maintain rigor in Phase one were described using the processes of confirmability, credibility, and transferability. The triangulation process was also presented as it was applied in this study. Finally, the ethical considerations were discussed and ensured that both privacy and anonymity were upheld.

The next chapter details the results from Phase one of this study, which was conducted with 15 parents. This chapter will present the major themes and sub-themes that were identified from the parents’ interviews.
Chapter 4: Qualitative Results from the Parents’ Interviews

4.1 Introduction

This chapter discusses the results from the parents’ interviews that were conducted in Phase one of this study. In March 2016, two FGDs were conducted with 15 Omani parents (one group with six mothers and one group with nine fathers of children studying in grades 7-9) using convenience sampling. Following on from the FGDs, two face-to-face in-depth IDIs were conducted three months later with two parents who were also participants in the FGDs (one mother and one father) to confirm some of the key focus group interview findings.

Primary data was collected using a pre-piloted set of semi-structured interview questions. The interpretation of interview data allowed concepts and relationships to be organised thematically. As discussed in the methodology chapter, the theoretical framework of Braun and Clark (2006) was used during the thematic analysis process. Textual and verbatim examples from the parents’ interviews helped to address and answer the research objectives and questions. Data that was collected from parents’ interviews was coded systematically and a thematic analysis was performed. Member checking and associated debate and concurrent agreement then took place to maintain rigor. Subsequently, the most contextually rich statements that were relevant to the identified thematic analysis were then selected to represent the participant’s experience and perceptions (Creswell, 2014; Morse, 2003). The themes and sub-themes identified were related to the broadly applied key research questions.
4.2 Parents’ Demographic Details and Sampling

Thirty parents including 15 fathers and 15 mothers from two public secondary schools (grades 5-10 including one boys’ school and one girls’ school) were invited to participate in two single-sex FGDs and two IDIs (See table 4.1). A total of 15 parents (six mothers and nine fathers) met the study criteria and participated in two single-sex FGDs and two IDIs. Table 4.1 presents the demographical composition of the parents’ FGDs and IDIs. Eight parents were in the 30-40 age range, followed by six parents above 40 years and one father under 30 years. The majority of parents had a high school education. Twelve parents had one or two children studying in grades 7-9 and three fathers had more than two children studying in grades 7-9. Most parents had both male and female children studying in grades 7-9. Parents were varied in their monthly household income. Eight parents had a monthly household income between 500-1000 Omani Rial (1300-2600 USD), five parents had a monthly household income of less than 500 Oman Rial (less than 1300 USD) and only two parents had a monthly household income more than 1000 Omani Rial (more than 2600 USD).
Table 4.1 Demographic Data of Parents’ FGDs and IDIs

<table>
<thead>
<tr>
<th>Number of FGD/Total Parents</th>
<th>Gender/Code</th>
<th>Age</th>
<th>Monthly Household Income</th>
<th>Number of Children Studying in Grades 7-9</th>
<th>Gender of Children Studying in Grades 7-9</th>
<th>Education level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FGD1 9 Fathers (F)</strong></td>
<td>Father (F1)</td>
<td>Above 40 years</td>
<td>500-1000 Omani Rail</td>
<td>2</td>
<td>Both Male and Female</td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>Father (F2)</td>
<td>Above 40 years</td>
<td>Less than 500 Omani Rail</td>
<td>More than Two</td>
<td>Both Male and Female</td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>Father (F3)</td>
<td>30-40 years</td>
<td>Above 1000 Omani Rail</td>
<td>2</td>
<td>Male</td>
<td>Diploma degree</td>
</tr>
<tr>
<td></td>
<td>Father (F4)</td>
<td>Above 40 years</td>
<td>Less than 500 Omani Rail</td>
<td>2</td>
<td>Both Male and Female</td>
<td>Primary school</td>
</tr>
<tr>
<td></td>
<td>Father (F5)</td>
<td>30-40 years</td>
<td>500-1000 Omani Rail</td>
<td>2</td>
<td>Both Male and Female</td>
<td>Primary school</td>
</tr>
<tr>
<td></td>
<td>Father (F6)</td>
<td>20-29 years</td>
<td>500-1000 Omani Rail</td>
<td>1</td>
<td>Male</td>
<td>Postgraduate degree</td>
</tr>
<tr>
<td></td>
<td>Father (F7)</td>
<td>Above 40 years</td>
<td>Less than 500 Omani Rail</td>
<td>More than Two</td>
<td>Both Male and Female</td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>Father (F8)</td>
<td>30-40 years</td>
<td>500-1000 Omani Rail</td>
<td>More than Two</td>
<td>Both Male and Female</td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>Father (F9)</td>
<td>30-40 years</td>
<td>500-1000 Omani Rail</td>
<td>1</td>
<td>Male</td>
<td>High school</td>
</tr>
<tr>
<td><strong>FGD2 6 Mothers (M)</strong></td>
<td>Mother (M1)</td>
<td>30-40 years</td>
<td>500-1000 Omani Rail</td>
<td>2</td>
<td>Both Male and Female</td>
<td>Bachelor degree</td>
</tr>
<tr>
<td></td>
<td>Mother (M2)</td>
<td>Above 40 years</td>
<td>Less than 500 Omani Rail</td>
<td>1</td>
<td>Female</td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>Mother (M3)</td>
<td>Above 40 years</td>
<td>500-1000 Omani Rail</td>
<td>1</td>
<td>Female</td>
<td>Primary school</td>
</tr>
<tr>
<td></td>
<td>Mother (M4)</td>
<td>30-40 years</td>
<td>Above 1000 Omani Rail</td>
<td>1</td>
<td>Female</td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>Mother (M5)</td>
<td>30-40 years</td>
<td>500-1000 Omani Rail</td>
<td>2</td>
<td>Female</td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>Mother (M6)</td>
<td>30-40 years</td>
<td>Less than 500 Omani Rail</td>
<td>2</td>
<td>Both Male and Female</td>
<td>High school</td>
</tr>
</tbody>
</table>

Total 15 Parents

4.3 Results

With the reporting of results, codes were applied to identify parents’ opinions. For example, as shown in Table 4.1, “(FGD1, F1)” refers to a ‘father’ participant from focus group discussion 1. Similarly, with females, “(FGD2, M1)” refers to a ‘mother’ participant from focus group discussion 2. Themes emerged from the thematic analysis of male and female parents’ responses and are categorised into four major themes: ‘Support for School-Based SRHE in Oman’, ‘Designing the SRHE Curriculum’, ‘Personal Facilitators and Barriers’ and ‘System Facilitators and Barriers...Need for Support’ (See Table 4.2).

The findings are reported from the parents’ perspective using their testimonies to address the research questions and provide recommendations toward planning and implementation of school-based SRHE programs in Oman in order to improve and maintain Omani adolescents’ sexual health and well-being. The table below summarises the themes and sub-themes arising during the parents’ interviews indicating the parents’ attitudes, beliefs, barriers and facilitators towards implementing school-based SRHE programs (See Table 4.2).
<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-Themes and Brief Description</th>
</tr>
</thead>
</table>
| **1. Support for School-Based SRHE in Oman** | Benefits of school-based SRHE programs for adolescents…adolescents do not know  
Parents’ attitudes toward the content of SRHE programs…current sexual health information is superficial and only related to human biology  
Adolescents’ sources of sexual and reproductive health information…bad friends, social media and smartphones |
| **2. Designing the SRHE Curriculum** | The attitudes of parents towards aligning SRHE programs with Islamic beliefs  
The attitudes of parents toward appropriate age for SRHE programs…SRHE should be started gradually  
The attitudes of parents toward the appropriate person to teach SRHE programs…need to be conducted by qualified educators  
Teaching approaches for SRHE programs…use of books, CD, lectures and videos and involve parents  
Sexual and reproductive health topics |
| **3. Personal Facilitators and Barriers** | Attitudes of parents toward discussing sexual matters with the opposite gender…feeling shy discussing with the opposite gender  
Parents’ perceptions of sexual discussion as a socio-cultural taboo  
Parents’ attitudes toward Islamic religious views of SRHE programs…Islam does not conflict with SRHE |
| **4. System Facilitators and Barriers: Need for Support** | Parents’ perceptions of system facilitators and barriers towards delivering SRHE at home…personal lack of knowledge, lack of time and the need for SRHE training. |
4.3.1 THEME 1: Support for School-Based SRHE in Oman

Theme 1 examined female and male parents’ attitudes and beliefs towards the introduction of school-based SRHE programs in Oman. Both male and female parents interviewed supported implementing school-based SRHE programs in Oman. Some parents believed that SRHE will help to educate adolescents about risky sexual behaviours. Conversely, some fathers and mothers were worried about the negative outcomes of teaching SRHE, such as opening the eyes of adolescents about sexual matters and motivating them to engage in premarital sexual activity. This theme is further delineated into four sub-themes of: ‘benefits of school-based SRHE programs for adolescents’, ‘parents’ attitudes toward the content of SRHE programs’ and ‘adolescents’ sources of sexual and reproductive health information’.

4.3.1.1 Benefits of School-Based SRHE Programs for Adolescents…. adolescents do not know

Parents interviewed showed support for school-based SRHE programs and held the views that provision of school-based SRHE programs would improve adolescent sexual and reproductive health knowledge, reduce adolescent involvements in risky sexual behaviours and promote adolescent health and well-being. Some male and female parents interviewed reported that most Omani adolescents do not have basic sexual and reproductive health knowledge and skills such as puberty changes and reproductive systems. For example, one father said:
“I strongly agree to introduce school-based SRHE…will help to increase adolescent
adolescents such as changes during puberty” (FGD1, F5).

Similarly, one mother in an IDI restated her support to school-based SRHE programs and indicated that these programs would help to improve adolescent sexual and reproductive health knowledge:

“SRHE programs will increase the knowledge of adolescents regarding sexual and reproductive health issues such as puberty physiological changes…reproductive systems” (IDI, M1).

According to the mothers and fathers that were interviewed, in the Oman community, many adolescents do not receive adequate SRHE at their school or their home due to lack of sexual communication between parents and adolescents. Due to these reasons, several parents recommended that schools should play an important role in adopting and providing adolescents with accurate SRHE.

“Omani schools lack the SRHE curriculum and time to educate adolescents about SRHE…SRHE is an important issue, which requires emphasis from the Oman MOE and Oman MOH” (FGD2, M2).

Moreover, some mothers reported that due to a lack of SRHE at home, school-based SRHE would help to provide female adolescents with SRHE and psychological support about menstruation in order to be prepared and ready for this stage. For example, one mother suggested:

“mothers are busy or forget to educate their girls about menstruation…girls should be educated at school about menstruation in order to be prepared and ready for this stage” (FGD2, M3).

Another mother reported that she did not educate her daughter about menstruation at the adolescent stage. According to her story:
“One day, my daughter was crying. She had lower abdominal pain with bleeding. I found that she had menstruated...My daughter did not receive any SRHE regarding menstruation at home or school” (FGD2, M2).

Furthermore, both fathers and mothers interviewed reported that school-based SRHE would be beneficial to educate adolescents about contraceptive methods and the consequences of engaging in unprotected sex such as STIs, HIV, and teenage pregnancy and hence, strongly recommended that SRHE should be covered in the Omani school curriculum. For example, one father said:

“Omani adolescents lack SRHE...I strongly agree to teach school-based SRHE...provide classes about adolescent healthy and risky sexual behaviours such as STIs and its prevention...condom use, as well as teenage pregnancy” (FGD1, F6).

Parents interviewed believed that adolescents were at a higher risk of receiving wrong sexual information and engaging in risky sexual behaviours due to the availability of smartphones and social media such as WhatsApp, Instagram, and Facebook. One mother strongly agreed that school-based SRHE programs be taught because of the increased number of sexual and reproductive problems among Omani adolescents nowadays.

“SRHE is very important due to increased cases of STIs among adolescents...adolescents do not know about STIs and other sexual issues, such as teenage pregnancy” (FGD2, M5).

Most fathers and mothers interviewed stated that many Omani male and female adolescents engaged in premarital sexual activity during their puberty period and were at higher risk to acquire HIV and STIs due to lack of knowledge related to safe sexual practise. For example, one mother said:
“Many young adolescents and married men have illegal sexual relationships (premarital sex). They might get STIs and transmit to others...most young adolescents and married men do not know about the prevention of STIs” (FGD2, M3).

Similarly, another mother strongly agreed to teach school-based SRHE to avoid STIs and HIV because in her relatives a female adolescent had STIs:

“She had a sexual relationship with her boyfriend...However, she did not know the consequences of acquiring STIs” (FGD2, M5).

This issue was confirmed in an IDI by a father who is a religious leader in the Saham community. He argued that although premarital sex is prohibited in Muslim culture, it existed and is common among adolescents in Omani society:

“The issue of premarital sex is very common among adolescents...it should be included in SRHE curriculum...adolescents should know the consequences of premarital sex such as teenage pregnancy and STIs” (IDI, F6).

In contrast, some fathers and mothers reported that: “premarital sexual activity is prohibited and not common in Oman and occurs in hidden places” (FGD1, F1). Although several parents interviewed strongly supported for teaching SRHE programs in Omani schools, some parents were less supported for school-based SRHE because they were worried about negative outcomes of SRHE programs in adolescent behaviours. They indicated that SRHE may open the eyes of adolescents about sexual matters and motivate them to practice what they learn and engage in sexual activities:

“I am worried about the negative outcomes of SRHE...if we provide primary school students with SRHE, this may lead to open their mind about sexual issues and motivate them to practice sexual activities” (FGD1, F3).
Due to this reason, parents with less support for school-based SRHE were avoiding engaging in sexual communication with their adolescents. According to one father:

“...most of the time, I avoid engaging in sexual discussion with my adolescents. I am afraid to open their eyes about sexual matters. Maybe they do not know the information and then use the information to engage in sexual practice” (FGD1, F7).

However, some fathers and mothers that were interviewed believed that some children are sexually abused or at a higher risk to be sexually abused inside or outside the schools and the children do not know the behaviours of sexual abuse and to how to prevent it. Accordingly, these parents strongly supported for a school-based SRHE program to be introduced in Omani schools as they believed it would be very useful to educate primary school students about sexual abuse. For example, one mother said:

“Some primary school students are sexually abused at schools... At primary school (grades 1-5), children should be educated about sexual abuse... your genital area should not be touched by others” (FGD2, M4).

Some mothers and fathers that were interviewed reported that some younger students are sexually abused inside the school by school cleaners or older students and most of these younger students do not know about sexual abuse. For example, one father stated:

“Secondary schools include both young (grades 5-8) and older students (grades 9-10) ...some younger students are sexually abused by older students... grades 5-8 should be separated from secondary schools” (FGD1, F3).

Likewise, another father in an IDI confirmed that sexual abuse occurs inside the schools: “...last week, a father told me that an older adolescent (grade 10) sexually abused his son (grade 6) by removing his clothes and touching his genitals” (IDI, F6). According to some fathers,
younger students are afraid of older students because older students are stronger and have bigger bodies:

“*When younger students are sexually abused by older students, they are afraid of them and do not tell others*” (FGD1, F2).

Similarly, one mother reported that her girl was sexually abused inside the school by the bus driver and thus, she considered that home or school-based SRHE about how to know and prevent child sexual abuse is very important. According to her story:

“...*one day, my daughter came back from primary school and she was distressed and...I asked her why are you anxious? She said: The bus driver touched and kissed me*” (IDI, M1).

4.3.1.2 Parents’ Attitudes toward the Content of SRHE Programs...*

This sub-theme explored parental attitudes and beliefs toward the contents of the current SRHE curriculum in Omani schools. Many of the fathers and mothers that were interviewed reported that current school curriculum does not cover SRHE. They indicated that the contents of the current SRHE curriculum in Omani school are not enough as most of its topics are superficial, minor, are biologically related and are mainly about AID/HIV. Accordingly, they recommended that the Oman MOE and Oman MOH should redesign the current SRHE curriculum and implement school-based SRHE programs. For example, one mother reported that:

“*Many mothers are busy and do not provide their girls with SRHE. The current school curriculum is superficial and does not cover sexual health topics. It includes topics related to HIV only*” (FGD2, M1).

Likewise, another mother suggested that: “*...schools should educate girls about menstruation through a school nurse because most mothers are busy and forget to educate their daughters*” (FGD2, M3). Similarly, some fathers suggested that the school curriculum should
focus on issues related to adolescent sexual health, such as sexual abuse, STIs, contraception, and teenage pregnancy.

“The current science subjects only cover one or two topics about the biology of reproduction and the reproductive system in grade 9...There is no information about STIs, contraception, teenage pregnancy, masturbation and homosexuality” (FGD1, F3).

Furthermore, some fathers also indicated that the current school curriculum does not cover SRHE from an Islamic perspective. For example, they recommended that the school curriculum should cover topics of homosexuality from an Islamic view:

“Islamic subjects only cover minor points regarding sexual issues” (FGD1, F1).

A father in an IDI restated that the current school curriculum does not cover SRHE. He strongly recommended to include comprehensive SRHE in the school curriculum:

“I strongly request the school curriculum decision-makers, the Oman MOE and Oman MOH to introduce school-based SRHE at least one lesson per week...our adolescents should be educated about risky sexual behaviours” (IDI, F6).

4.3.1.3 Adolescents’ Sources of Sexual and Reproductive Health Information...bad friends, social media and smartphones

This sub-theme examined the parents’ attitudes and beliefs towards sources of sexual and reproductive health information for their adolescents. Some parents interviewed reported that their adolescents did not discuss with them if they had any sexual inquires. There was general agreement among all parents interviewed in two FGDs that adolescents receive most of their sexual and reproductive information from their friends, the Internet, and social media through Facebook, WhatsApp, Instagram and Snapchat using smartphones. For example, one father said:

“Adolescents obtain their sexual health information from bad friends and the Internet using smartphones...adolescents do not receive their sexual health information from their...
parents or teachers…my adolescents do not ask me when they have any sexual inquires” (FGD1, F9).

Similarly, one mother indicated that adolescents often receive their sexual health information from bad friends at school and thus, she supported school-based SRHE:

“…these days, most adolescents have phones, laptops, iPads and bring them to school…At both girls’ schools and boys’ schools, students share inappropriate contents (sexual photos and videos) with their friends” (FGD2, M5).

Likewise, another mother reported that adolescents have easy access to the Internet and receive their sexual information from social media:

“These days, adolescents chat with other adolescents using many applications such as WhatsApp, Instagram and snapchat etc.…they use these applications to make friends, meet with them and share asexual photos and videos” (FGD2, M3).

One father stated that his adolescents do not ask him about their sexual matters because they are shy to ask and thus, he supported school-based SRHE and recommended that parents initiate sexual discussion with their adolescents.

“…most adolescents are shy or unmotivated to ask their parents about sexual matters…parents should encourage their adolescents to ask when they have any sexual questions” (FGD1, F8).

However, both fathers and mothers who were interviewed stated that friends, the Internet, and social media provide adolescents with inappropriate and incorrect sexual and reproductive information that causes serious health impacts in adolescent sexual health and well-being. Hence, several parents that were interviewed believed that school-based SRHE programs would help adolescents to avoid receiving incorrect sexual information from friends, the Internet, and social media.
“School-based SRHE will be very useful because these days, many adolescents receive and are exposed to wrong and incorrect sexual information from the Internet and social media, which is not based on science” (FGD2, M4).

A father in an IDI interview reported the majority’s attitude that adolescents rarely receive sexual health information from their parents or school teachers and argued that the Internet and friends provide adolescents with incorrect sexual health information:

“...adolescents obtain most of their sexual information from friends and the Internet, which provide them with inappropriate and incorrect sexual information” (IDI, F6).

Likewise, a mother in an IDI confirmed that SRHE is very important to avoid receiving wrong and inappropriate information from the Internet:

“...when adolescents search about something on the Internet, they may be forced to see sexual advertisements and naked pictures...SRHE is very important because some adolescents are misled by these sexual advertisements” (IDI, M1).

Parents—including fathers and mothers—that were interviewed were very aware of the negative effects of smartphones on adolescent sexual health and well-being and recommended that parents should control the use of smartphones among their adolescents:

“I do not encourage parents to give their adolescents smartphones without control because of its negative effects on adolescent sexual behaviours...I strongly recommend parents to monitor the use of smartphones” (FGD1, F7).

A mother in an FGD two indicated that children may watch inappropriate photos or videos from social media or YouTube and suggested that:

“...parents should establish a good relationship with their children (as a friend) in order to monitor and guide them when they use their smartphones and other smart electronic devices” (FGD1, M9).
4.3.2 THEME 2: Designing the Sexual and Reproductive Health Education Curriculum

Theme 2 investigated parental attitudes and beliefs towards the best approaches for designing and structuring the SRHE curriculum in Omani schools. This theme has five sub-themes consisting of: ‘the attitudes of parents towards aligning SRHE programs with Islamic beliefs’, ‘the attitudes of parents toward appropriate age for SRHE programs’, ‘the attitudes of parents toward the appropriate person to teach SRHE programs’, ‘teaching approaches for SRHE programs’ and ‘sexual and reproductive health topics’.

4.3.2.1 The Attitudes of Parents towards Aligning SRHE Programs with Islamic Beliefs

This sub-theme discussed the parents’ views in relation to Islamic beliefs. There was a consensus among the fathers and mothers that were interviewed that school-based SRHE programs should be aligned with Islamic beliefs in terms of its rules and regulations. For example, one mother in FGD2 supported SRHE but she was concerned that the SRHE would be based on western culture only.

“I agree with SRHE programs but we want to know more about the contents of these programs...I strongly refuse these programs if they are based on western culture only and do not consider Islam” (FGD2, M1).
Both mothers and father interviewed indicated that aligning school-based SRHE programs with Islamic beliefs requires that sexual topics in the SRHE curriculum should be covered from both scientific and Islamic perspectives. For example, one father recommended that:

“SRHE should cover both scientific information and Islamic beliefs about menstruation, nocturnal emissions, premarital sexual activity and child sexual abuse” (FGD2, F1).

A mother in FGD2 provided an example about how to align school-based SRHE programs with Islam regarding the topic of sexual abstinence:

“...students should know the Islamic beliefs about premarital sexual activity (prohibited and should abstinence from sex until marriage) ...thus, SRHE should cover sexual abstinence and students should know the scientific benefits of sexual abstinence” (FGD2, M5).

Likewise, a father indicated how school-based SRHE should cover the topic of homosexuality from both Islamic and scientific perspectives:

“In SRHE curriculum, adolescents should know that homosexuality is prohibited in Islam. They should also know about safe sex and STIs to make them aware of the risks of unprotected sex” (FGD1, F2).

In an IDI with a father who was a religious leader, he restated that SRHE programs should align with Islamic beliefs. For example, he suggested that the issue of homosexuality and premarital sexual activity should be covered in SRHE as mandatory topics including both scientific information and Islamic rules and regulations. According to him, the issue of premarital sex and same sex sexual relations are common among Omani adolescents.

“Many adolescents reported to me that they had engaged in same sex or premarital sex...adolescents should know that premarital sex and homosexuality are forbidden in Islam...they should also know the scientific information on safe sex and STIs” (IDI, F6).
4.3.2.2 The Attitudes of Parents toward Appropriate Age for SRHE Programs...SRHE should be started gradually.

This section investigated the attitudes of parents towards an appropriate age to start teaching SRHE programs. Parents (fathers and mothers) interviewed in two FGDs preferred that SRHE should be started at primary school (age of 6 years). They believed that the early introduction of SRHE would be very beneficial to educate children about how to prevent sexual abuse. For example, one mother said:

“I agree to start SRHE at primary school...At this age, children should learn about how to avoid sexual abuse from another...they should learn to speak up and tell their teacher if anybody tries to touch their genitals” (FGD2, M3).

Similarly, another mother suggested that at primary school (grades 1-5), children should receive SRHE about sexual abuse because:

“...at primary school, students are often sexually abused by school cleaners or older students and younger children do not know about sexual abuse and how to prevent it” (FGD2, M4).

In contrast, some parents suggested early SRHE to prevent children from receiving inappropriate sexual health information from the Internet and social media. According to them, these days, children are not the same as the older generations, are smarter and know many things, such as how to access YouTube using an iPad or smartphone. For example, one father stated:

“SRHE should start from primary school to prevent children from receiving inappropriate sexual content...most children are exposed to social media...children enter YouTube or Google and receive inappropriate and wrong sexual content” (FGD1, F6).

Early school-based SRHE to avoid receiving wrong sexual information from social media and the Internet was also confirmed by a mother in an IDI. She restated that:
“SRHE should be started early at grade 1 because children these days know many things related to sexuality from an early age from social media and the Internet” (IDI, M1).

Although, both the mothers and fathers that were interviewed preferred that school-based SRHE should be started early at primary school, most of them were concerned about providing students with complex sexual health information at an early age. Thus, they recommended that the SRHE curriculum should be conducted gradually according to the developmental level of the students by providing them with age-appropriate sexual and reproductive health information. For example, one mother reflected that the topics of the SRHE curriculum should be conducted based on the age of the students.

“…each age has its own topics. At primary school, it is inappropriate to teach female students about menstruation (they will not understand). It should be conducted at grades 6-7 because at this age, girls start or are close to experiencing menstruation” (FGD2, M4).

Both mothers and fathers suggested that, at an early age, students should be provided with basic sexual health information and at a later age, they should be provided with more complex sexual health information. For example, they suggested that, at primary school (grades 1-4), students should be educated with basic information about the reproductive system and how to avoid sexual abuse and at secondary school (grades 5-10), students should be provided with intermediate sexual health information such as puberty’s physiological changes, contraception, and teenage pregnancy. Then, at grades 11-12, they suggested that students should be provided with more deep and advanced sexual health information such as STIs. For example, one mother reported how SRHE should be started:
“It should start gradually...appropriate for students’ age. At grades 1-4, start with simple information about child sexual abuse. At grades 5-10, start with advanced sexual information such as puberty, menstruation, nocturnal emissions etc” (FGD2, M6).

Similarly, one father stated that: “SRHE should be started at primary school and should be conducted gradually...start with basic information at the early stages then move to complex information at later stages” (FGD1, F8). In an IDI a father also restated similar attitudes:

“SRHE should start at primary school with age-appropriate sexual health information. At an early age, children should be provided with basic information regarding sexual anatomy and how they should not be touched by others” (IDI, F6).

4.3.2.3 The Attitudes of Parents toward the Appropriate Person to Teach SRHE Programs...need to be conducted by qualified educators

This section highlighted parental attitudes and beliefs towards appropriate people to teach school-based SRHE programs for their adolescents. Both mothers and fathers preferred that school-based SRHE should be taught by specialised and qualified sexual health educators who had received SRHE training. For example, one father said:

“I agree to introduce a school-based SRHE program but it should be conducted through qualified and specialised educators who have certificates in sexual health education” (FGD1, F1).

According to some fathers, conducting school-based SRHE through specialised educators would ensure that adolescents are provided with accurate sexual health information. They believed that qualified educators would be more knowledgeable regarding scientific sexual health information (such as STIs and contraception etc.) as well as Islamic sexual health beliefs. For example, one father stated that:
“...conducting SRHE through unprepared teachers will not have positive effects on adolescent sexual health...qualified educators will have accurate scientific sexual health information of STIs” (FGD1, F6).

In contrast, some mothers suggested that qualified educators will have teaching strategies, communication skills and psychological knowledge and able to understand the sexual issues of adolescents and provide them with age-appropriate SRHE using simple information. For example, one mother stated:

“I agree to teach SRHE. I think that science teachers who teach SRHE should have enough SRHE knowledge including teaching strategies and communication skills to conduct sexual topics” (FGD2, M4).

Similarly, another mother suggested that: “SRHE should be conducted using specialised educators who receive SRHE training...should have psychological knowledge and communication skills” (FGD2, M6). Therefore, several mothers and fathers recommended that:

“The Oman MOE should provide specialised educators who have certificates in SRHE to conduct the school-based SRHE programs” (FGD1, M5).

Parents that were interviewed indicated that school-based SRHE can be conducted by a collaboration of science teachers, Islamic teachers and school nurses who receive SRHE training. They believed that qualified science teachers and school nurses can provide students with accurate scientific sexual health information and qualified Islamic teachers can provide students with Islamic views towards sexual issues. For example, one father suggested that:

“SRHE can be conducted through science teachers and school nurses because they have science background...However, they should first receive training before conducting SRHE so they can be able to provide students with accurate SRHE” (FGD1, F9).
Likewise, another father reported that: “...school nurses and science teachers will be appropriate candidates to teach SRHE as they are specialised in the science field but should receive SRHE training...Islamic teachers can also be included as they are knowledgeable about the Islamic religion” (FGD1, F8). Similarly, one mother suggested that:

“School-based SRHE can be conducted through Islamic teachers (provide information regarding Islamic beliefs), science teachers and school nurses (provide scientific sexual health information) who receive SRHE training” (FGD2, M2).

Another mother reported that conducting school-based SRHE programs through one educator will be very difficult and therefore, she suggested science teachers, school nurses and Islamic teachers to conduct SRHE:

“Delivery of school-based SRHE is a challenging task. It requires collaboration from different specialties, such as science teachers, school nurses and Islamic teachers who have received SRHE training” (FGD2, M4).

Parents suggested that the Oman MOE and MOH should offer sexual health speciality courses at universities for school nurses and teachers to prepare them and make them qualified educators to conduct school-based SRHE for students. For example, one father reflected that Islamic teachers, science teachers, and school nurses are not qualified to conduct SRHE without being educated specifically in SRHE. According to him:

“SRHE should be conducted through qualified teachers and school nurses by offering SRHE speciality courses at universities and colleges in Oman for teachers and school nurses” (FGD1, F2).

Likewise, one mother suggested that: “The Oman MOE and Oman MOH should offer specialty courses in SRHE at universities with undergraduate or post-graduate degrees for science
teachers, Islamic teachers, and school nurses” (FGD2, M3). This suggestion was also restated by another mother in an IDI:

“...teaching school-based SRHE programs through specialised educators is possible if the Oman MOE and MOH offer SRHE specialty courses at universities for school teachers and school nurses” (IDI, M1).

Some fathers indicated that the school-based SRHE curriculum should be conducted as a subject separate from science and Islamic by qualified school teachers and school nurses. For example, one father stated:

“...conducting SRHE within science or Islamic subjects will be very difficult due to the curriculum overload that may occur. It should be conducted as a separate subject” (FGD1, F6).

In contrast, most mothers believed that school-based SRHE curriculum should be conducted within science and Islamic subjects. They indicated that conducting school-based SRHE as a separate subject will consume time and resources. For example, they suggested that scientific sexual and reproductive health information can be added in a science subject and conducted by science teachers and school nurses who receive SRHE training with sexual topics being taught at appropriate age levels. For example, one mother said:

“It should be conducted under the current school curriculum (science and Islamic subjects) using science teachers, school nurses and Islamic teachers…conducting school-based SRHE as a separate subject will consume time and resources” (FGD2, M4).
4.3.2.4 Teaching Approaches for SRHE Programs…

This section discussed parents’ preferences of teaching approaches for SRHE programs. Parents that were interviewed in two FGDs indicated several approaches that can be used to deliver school-based SRHE programs, such as lectures, books, stories, videos, educational CDs and even involving family members. For example, one mother in FGD2 indicated that:

“SRHE can be conducted using videos so students can easily understand the topics. It can also be conducted using books, stories, pictures and lectures” (FGD2, M5).

Likewise, another mother suggested that SRHE should not be conducted using only a theoretical method (oral lectures) but it should be conducted by combining both theoretical and practical sides. For example, she suggested that:

“Use videos about puberty’s physiological changes so students can see and understand…use a human body model to teach about the hygiene of reproductive organs and functions and anatomy of the male and female reproductive systems” (FGD2, M2).

One father indicated that the school can provide parents with an educational CD about SRHE so that they can educate their children at home:

“SRHE can be conducted using educational CDs sent to parents, lectures, videos (such as videos about puberty’s physiological changes) and stories” (FGD1, F5).

Involvement of the family—including mothers and fathers—in teaching SRHE curriculum was clearly stated by several mothers and fathers that were interviewed. As reflected by one father that said: “…home should be the base of SRHE” (FGD1, F2). Another father also reflected that:

“SRHE should be conducted by involving parents because conducting SRHE by school alone will be very difficult” (FGD1, F7).
Parents indicated that both school teachers and parents play an important role in the success of school-based SRHE programs. They believed that providing SRHE through the school alone would not be enough and thus recommended that parents should be involved in educating their adolescents regarding sexual issues. For example, one mother indicated that parents should be involved in SRHE as parents play a critical role in monitoring the sexual behaviours of their adolescents:

“...parents can guide their adolescents from receiving wrong sexual information from the Internet and social media...adolescents often listen and trust their parents” (FGD2, M3).

In contrast, some parents believed that educated parents who have sexual health knowledge can provide sexual health education for their adolescents to make them prepared and become aware of risky sexual behaviours, but non-educated parents do not realise the importance of SRHE. For example, one father reported that the school and parents should share the responsibility of SRHE and suggested that: “...if the parents are not educated and do not have sexual health knowledge, schools should also provide SRHE for parents” (FGD1, F8). Similarly, another father suggested that:

“Parents should receive SRHE through the school before conducting SRHE to their adolescents because sexual health topics are sensitive topics...so they can provide their adolescent with correct and age-appropriate SRHE” (FGD1, F6).

4.3.2.5 Sexual and Reproductive Health Topics

This sub-theme examined the attitudes of parents towards SRHE topics that should be covered when designing the SRHE curriculum in an Islamic setting. Both mothers and fathers that were interviewed supported comprehensive school-based SRHE programs for their adolescents. They preferred age-appropriate SRHE programs that address various SRHE topics including controversial topics such as contraception, teenage pregnancy, premarital sex and homosexuality
starting from primary school (grades 1-4) to high schools (grades 5-12). For example, one father reported that:

“STIs, reproductive systems, puberty changes, homosexuality, masturbation, child sexual abuse, and premarital sex should be covered in school-based SRHE programs” (FGD1, F5).

Another father indicated that: “...adolescents should know the normal and abnormal signs of the reproductive system and puberty changes, so they can report to their parents when they detect any abnormality in their bodies, such as having only one teste” (FGD1, F6). One mother also indicated that:

“...masturbation is an important SRHE topic to be covered in school-based SRHE programs because many adolescents aged 12-15 do masturbate...my girl was masturbating frequently during her sleep” (FGD2, M2).

Similarly, another mother suggested that SRHE should include: “...puberty changes, nocturnal emissions, premarital sex, menstruation, STIs, contraception, and hygiene associated with the reproductive system” (FGD2, M1). However, she preferred that these sexual topics should be covered from both Islamic and scientific perspectives. This attitude was also stated by other fathers and mothers.

“School-based SRHE should include homosexuality, premarital sex, and STIs to make adolescents aware about the consequences of engaging in risky sexual behaviours...these topics should cover both scientific information and Islamic views” (FGD1, F2).

When both mothers and fathers were asked for the reason for inclusion the topic of homosexuality (same sex) in the SRHE curriculum, they stated that homosexuality commonly occurred in Omani society.
“...some men have sex with men or women have sex with women. It should be covered in the SRHE curriculum from both Islamic and scientific perspectives” (FGD1, F3).

Similarly, one mother reported that although homosexuality is prohibited in Islam, many Muslim girls and boys are homosexual and do not follow Islamic rules and regulations. According to her:

“I know some adolescent girls who are lesbian. One of my girlfriends asked me to have a sexual relationship with her but I refused” (FGD2, M4).

Likewise, another mother indicated that the topic of same sex relationships is an important topic to be covered in school-based SRHE programs because the issue is common in girls’ schools:

“My daughter (grade 9) told me that one day she went to the schools’ toilet and found two girls (grades 9-10) who were naked and engaging in sex” (FGD2, M6).

This issue was also confirmed by one father in IDI. He was a religious leader and many Omani adolescents reported to him that they have engaged in same sex sexual practices. He suggested:

“It should be covered in SRHE as a mandatory topic. Adolescents should know that homosexuality is prohibited in Islam and should also know the scientific information of safe sex to avoid STIs” (IDI, F6).

Although the parents that were interviewed in two FGDs supported the inclusion of various SRHE topics, they preferred these topics to be age-appropriate as described before in the sub-theme: “The attitudes of parents toward appropriate age for SRHE programs”. For example, one mother recommended that:

“Some topics should be designed for primary school (grades 1-4). On the other hand, some topics should be designed for secondary or high schools (grades 5-12). At primary school, students should be provided with simple sexual topics” (FGD2, M5).
4.3.3 THEME 3: Personal Facilitators and Barriers

Theme 3 highlighted parents’ perceptions of facilitators and barriers towards the provision of adolescent SRHE at home in the following three sub-themes: ‘attitudes of parents toward discussing sexual matters with the opposite gender’, ‘parents’ perceptions of sexual discussions as a socio-cultural taboo’ and ‘parents’ attitudes toward Islamic religious views of SRHE programs.

4.3.3.1 Personal Facilitators

4.3.3.1.1 Parents’ Attitudes toward Islamic Religious Views of SRHE Programs… Islam does not conflict with SRHE

This sub-theme explored the attitudes and belief of parents towards Islamic views of SRHE. There was a general consensus among parents (fathers and mothers) who were interviewed, that Islam was not a barrier and does not conflict with the provision of SRHE. For example, one father said:

“Islam does not conflict with SRHE…Islam has already discussed and explained the rules and regulations of many sexual health topics” (FGD1, F4).

Likewise, another father—who was a religious leader and knowledgeable with Islamic beliefs including Islamic views in relation to sexual issues stated that:
“It is very wrong to say that Islam conflicts with SRHE...Islam asks people to learn including sexual health learning...Islam has discussed many sexual health topics, such as menstruation, homosexuality and premarital sex” (FGD1, F6).

According to him, Islam emphasises care of adolescents’ physiological, sexual, emotional and psychological developments. Similarly, some mothers who were interviewed indicated that Islam does not conflict with teaching SRHE, because in Islam, there is no shyness or shame for learning and clarifying about sexual matters. For example, one mother said:

“The introduction of school-based SRHE will not conflict with Islam...there is no shyness regarding discussions on sexual matters in Islam. The Holy Quran has discussed many sexual issues such as homosexuality and sexual abuse” (FGD2, M3).

Likewise, another mother believed that Muslim people will not refuse SRHE because: “In Islam, sexual discussion is not forbidden and taboo. Islam has discussed everything about sexual matters...there is no shame about discussing sexual matters in Islam” (FGD2, M4). In an IDI, a mother also restated that Islam does not conflict with SRHE:

“The Holy Quran and Islam do not say that we should not teach sexual health issues such as male and female reproductive systems” (IDI, M1).

4.3.3.2 Personal Barriers

4.3.3.2.1 Attitudes of Parents toward Discussing Sexual Matters with the Opposite Gender...feeling shy discussing with the opposite gender

This sub-theme examined parental attitudes towards discussing sexual and reproductive health issues with their male and female adolescents. Several mothers and fathers interviewed reported that they are uncomfortable, felt shy and hesitated to discuss sexual health matters with the opposite gender. Most mothers who were interviewed were comfortable to discuss sexual matters with their daughters. In contrast, most fathers were comfortable to discuss sexual matters
with their sons. For example, one mother stated: “I feel shy to discuss sexual matters with my sons” (FGD2, M4). Similarly, another mother said:

“I am more comfortable to discuss sexual issues with my daughters than my sons”

(FGD2, M1).

Likewise, one father reported that he felt very shy to start communications related to sexual matters with his daughters and argued that normally, his daughters discussed their sexual inquiries with their mothers:

“I have never discussed sexual topics with my adolescent daughters…I feel shy and uncomfortable to open discussions on sexual topics with my daughters. I feel more comfortable to discuss sexual topics with my sons” (FGD1, F1).

Some fathers who were interviewed indicated that they felt shy and shameful to communicate with their daughters about sexual matters because in Omani society this is the role of the mother:

“According to our culture, the mother is the one who should discuss sexual matters with girls” (FGD1, F5).

### 4.3.3.2.2 Parents’ Perceptions of Sexual Discussion as a Socio-Cultural Taboo

This sub-theme explored the perceptions of parents towards sexual discussion in Omani culture. There was general agreement among parents interviewed in the two FGDs that sexual discussion is taboo in Omani culture. Both mothers and fathers stated that communication about sexual matters is a culturally and socially sensitive topic and therefore, they avoided sexual communication with their adolescents. For example, one mother said:

“Sexual communication between mothers and their adolescents is limited...sexual communication is restricted (uncommon) in our society due to taboos. Some families may not accept SRHE” (FGD2, M5).
Similarly, another mother reported that because of taboos and shyness, she had never discussed with her adolescents about sexual matters such as menstruation, masturbation, and nocturnal emissions:

“I feel uncomfortable. In our society, sexual discussion is considered taboo. When my daughter had her first period, she told her friends about her sexual inquiries regarding menstruation” (FGD2, M6).

Furthermore, one mother indicated that she had never discussed sexual matters with her adolescents because: “our parents and grandparents rarely discussed sexual matters with us” (FGD2, M1). This attitude was also reported by fathers:

“Omani people often do not talk about sexual topics...our fathers and grandfathers did not talk with us about sexual matters. In our culture, there are barriers towards sexual communication and it is considered taboo and shameful” (FGD1, F7).

Parents that were interviewed recommended that parents should overcome these taboos and initiate sexual communication with their adolescents because these days, adolescent sexual behaviours are different from past generations, there are some changes in the Omani culture and adolescents often expose to advanced technology and sexual media. Furthermore, some parents interviewed indicated that there are restrictions towards sexual communication in the Omani society, particularly among non-educated parents. They recommended that the Oman MOE and MOH should increase the awareness of parents towards the importance of SRHE to overcome this taboo.

“Non-educated parents often do not discuss sexual matters with their adolescents because of taboos and a lack of awareness about the importance of SRHE. To overcome these taboos, the Oman MOE should work to increase public awareness about SRHE” (FGD1, F6).
4.3.4 THEME 4: System Facilitators and Barriers: Need for Support

This section investigated parents’ views in relation to the support they need to conduct SRHE for their adolescents at home under the sub-theme: ‘parents’ perceptions of system facilitators and barriers towards delivering SRHE at home’.

4.3.4.1 Parents’ Perceptions of System Facilitators and Barriers towards Delivering SRHE at Home...personal lack of knowledge, lack of time and the need for SRHE training.

This sub-theme represents the facilitators and barriers towards delivering SRHE at home.

4.3.4.1.1 Facilitators

Several parents who were interviewed believed that parents should be an important source of sexual information for their adolescents. For example, one mother said: “Adolescents spend most of their time outside the school. The role of mothers is very important” (FGD2, M3). However, the parents that were interviewed in two FGDs, strongly recommended that they should receive SRHE training through the Oman MOE and Oman MOH in order to improve their sexual health knowledge and provide SRHE for their adolescents. For example, one mother suggested that:

“Parents need SRHE training through the Oman MOE or the Oman MOH...by providing them with lectures, TV educational programs and educational resources such as brochures, CDs about adolescent sexual health issues” (FGD2, M6).

Likewise, one father reported some suggestions to improve parent sexual health knowledge through schools:
“...schools can conduct lectures and workshops for parents, such as lectures about puberty changes, STIs... or through TV sexual health education programs and books, which are regulated by the Oman MOH and MOE” (FGD1, F1).

Both mothers and fathers who were interviewed stressed that SRHE training should come from trusted sources such as the Oman MOE and Oman MOH. They believed that workshops and training—prepared and regulated by the Oman MOE or Oman MOH—will be more official, organised and should be conducted by trained and specialised sexual health educators and within Islamic beliefs. For example, one mother said:

“We would like to learn about SRHE from trusted sources...it should be under government control such as the Oman MOE and cover scientific information and Islamic religion...not be based on western culture only” (FGD2, M3).

Likewise, one father preferred to receive SRHE resources from the Oman MOH or Oman MOE as these two institutions are more official and trustworthy:

“I would like to learn about sexual matters from good sources such as the Oman MOH and Oman MOE...I trust SRHE resources from the Oman MOE or Oman MOH...As they will contain approved sexual health information whilst considering Islamic views”

(FGD1, F4).

4.3.4.1.2 Barriers

Both fathers and mothers who were interviewed reported that they lacked the scientific knowledge and skills to conduct SRHE for their adolescents at home. They indicated that they had discussed only minor and superficial sexual matters with their adolescents. For example, one mother said:

“I have not discussed sexual matters with my adolescents. I feel shy and I lack scientific and Islamic knowledge to talk with them about these topics” (FGD2, M1).
Relatedly, another mother indicated that: “I provide my adolescents with simple SRHE such as about good or wrong behaviours...I did not engage in deep discussions on sexual matters with them due to a lack of scientific and Islamic information regarding sexual matters” (FGD2, M4). Likewise, one father said:

“I have not been involved in deep sexual communication with my adolescents. I have difficulty understanding the sexual needs of my male adolescents...I feel that I do not have sexual knowledge to answer their inquiries” (FGD1, F7).

Similarly, one father in an IDI interview confirmed that parents lack the sexual health knowledge to educate their children at home:

“Parents should be an important source of sexual information for their adolescents. However, most parents lack the sexual health knowledge...I do not have information to educate my adolescents about contraception and STIs”. (IDI, F6).

Some mothers and fathers who were interviewed stated nowadays, children and adolescents are very smart and ask difficult sexual questions and suggested that parents should educate themselves or schools should provide parents with SRHE workshops. As reflected by one mother:

“...children as young as 10 ask difficult and unexpected sexual questions such as reproduction (where did I come from?). I find difficulty to answer these questions. I lack sexual health knowledge” (FGD2, M5).

Similarly, one father reported that he was unable to answer the sexual inquires of his adolescents and indicated that:

“...these days, children and adolescents are smart. They have smartphones and iPads and enter YouTube and the Internet. They may have more sexual information than their parents” (FGD1, F6).
Furthermore, parents (fathers and mothers) who were interviewed in two FGDs, reported that most parents are often busy and lack time to discuss SRHE with their adolescents at home. For example, one mother said:

“Many parents are often busy with their work and do not monitor the sexual behaviours of their adolescents…they do not know if their adolescents have engaged in premarital sex…parents should monitor their adolescents’ phones and iPads” (FGD2, M3).

Likewise, another mother indicated that the role of parents as sexual and reproductive health educators for their adolescents is not enough and due to a lack of sexual health knowledge and time:

“I lack scientific information to educate my adolescents…I do not have time to educate my adolescents. Most of the time, I am busy at home with cooking and cleaning” (FGD2, M2).

Many fathers also reported that they were busy at their jobs and did not have time to communicate with their children about sexual matters:

“Most of the time, I do not discuss with my adolescents about their sexual matters because most of the time I am busy at my job and not available at home” (FGD1, F9).

Due to these barriers (lack of sexual knowledge and time), parents strongly recommended sharing SRHE responsibility with schools:

“The role of parents as sexual health educators is not enough. We lack the sexual health knowledge. Schools and parents should work together” (FGD2, M4).
4.4 Summary

This chapter presented the interview results from 15 parents (two FGDs and two IDIs) conducted in Phase one of this study. A summary table displaying the four themes and the 12 sub-themes was presented (See Table 4.2). The major themes from the parents’ interviews were: ‘support for school-based SRHE in Oman’, ‘designing SRHE curriculum’, ‘personal facilitators and barriers’ and ‘system facilitators and barriers…need for support’. Omani parents supported school-based SRHE programs and believed that provision of these programs can help to improve adolescent sexual health knowledge, reduce risky sexual behaviours and promote adolescent sexual and reproductive health and well-being. Many parents preferred age-appropriate SRHE curriculum that addressed various SRHE topics including controversial topics, such as child sexual abuse, contraception, premarital sex, teenage pregnancy, and homosexuality. In addition, they recommended that the SRHE curriculum should be aligned with Islamic beliefs and be delivered by qualified sexual and reproductive health educators. Parents reported that Islam is not a barrier to providing SRHE and discussions of sexual matters is fully acknowledged and respected in Islam. However, they stated that sexual discussion is taboo in the Omani culture and therefore, they avoided sexual communication with their adolescents. Furthermore, parents reported that they felt shy and uncomfortable to discuss sexual matters with the opposite gender. They also indicated that they lacked the scientific knowledge to conduct SRHE for their adolescents and were in favour of SRHE training.

Chapter 5 presents the results from Phase one of this study, with 10 science school teachers and 10 Islamic school teachers. A major focus of the chapter is the major themes and sub-themes that were identified from the school teachers’ interviews.
Chapter 5: Qualitative Results from the School Teachers’ Interviews

5.1 Introduction

This chapter discusses the results from the school teachers’ interviews conducted in Phase one of this current study. In March 2016, four FGDs were conducted with 20 school teachers who teach grades 7-9 (one FGD with five male science teachers, one FGD with five female science teachers, one FGD with five male Islamic teachers and one FGD with five female Islamic teachers) using convenience sampling. Following on from the FGDs, three face-to-face IDIs were conducted three months later with three senior school teachers who were also participants in the FGDs (one male science teacher, one male Islamic teacher, and one female science teacher) to confirm some of the key FGD’s findings.

The primary data was collected using a pre-piloted set of semi-structured interview questions. The interpretation of the data from the interviews, allowed concepts and relationships to be organised thematically. As discussed in the methodology chapter (Chapter 3), the theoretical framework of Braun and Clark (2006) was used during the thematic analysis process. Textual and verbatim examples from the school teachers’ interviews helped to address and answer research objectives and questions. The data that was collected from the school teachers’ interviews was coded systematically and a thematic analysis was performed. Member checking, associated debate, and concurrent agreement then took place to maintain rigor. Subsequently, the most contextually rich statements that were relevant to the identified thematic analysis were then selected to represent the participants’ experience and perceptions (Creswell, 2014; Morse, 2003). The themes and sub-themes that were identified are related to the broadly applied key research questions.
5.2 School Teachers’ Demographic Details and Sampling

Science and Islamic school teachers—including male and female teachers from the same two public secondary schools grades 5-10 (including one boys’ school and one girls’ school)—were invited to participate in this study (See Table 5.1). A total of 20 school teachers met the study’s criteria and participated in four single-sex FGDs and three IDIs. Table 5.1 presents the demographical composition of the school teachers from the FGDs and IDIs. Most of the participating school teachers were in the 30-40 age range and did not provide SRHE to the students. All school teachers had a Bachelor’s degree but had not received SRHE training. Thirteen school teachers had a teaching experience of more than 10 years and six school teachers had teaching experiences between 5-10 years.
Table 5.1 Demographic Data of School Teachers’ FGDs and IDIs

<table>
<thead>
<tr>
<th>Number of FGD/ Total teachers</th>
<th>Gender/ Code</th>
<th>Age</th>
<th>Teaching specialty</th>
<th>Provision of SRHE to Students/If Yes How regularly</th>
<th>Years of teaching experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGD1</td>
<td>Male (MIT1) Participated in IDI</td>
<td>30-40 years</td>
<td>Senior Islamic teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td>5 Male Islamic teachers (MIT)</td>
<td>Male (MIT2)</td>
<td>30-40 years</td>
<td>Islamic teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Male (MIT3)</td>
<td>30-40 years</td>
<td>Islamic teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Male (MIT4)</td>
<td>30-40 years</td>
<td>Senior Islamic teacher</td>
<td>No/non</td>
<td>5-10 years</td>
</tr>
<tr>
<td></td>
<td>Male (MIT5)</td>
<td>30-40 years</td>
<td>Islamic teacher</td>
<td>No/non</td>
<td>5-10 years</td>
</tr>
<tr>
<td>FGD2</td>
<td>Male (MST1) Participated in IDI</td>
<td>30-40 years</td>
<td>Senior Science teacher</td>
<td>Yes/Annually</td>
<td>More than 10 years</td>
</tr>
<tr>
<td>5 Male Science teachers (MST)</td>
<td>Male (MST2)</td>
<td>30-40 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Male (MST3)</td>
<td>30-40 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Male (MST4)</td>
<td>30-40 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Male (MST5)</td>
<td>30-40 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>5-10 years</td>
</tr>
<tr>
<td>FGD3</td>
<td>Female (FIT1)</td>
<td>30-40 years</td>
<td>Senior Islamic teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td>5 Female Islamic teachers (FIT)</td>
<td>Female (FIT2)</td>
<td>30-40 years</td>
<td>Islamic teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Female (FIT3)</td>
<td>30-40 years</td>
<td>Islamic teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Female (FIT4)</td>
<td>30-40 years</td>
<td>Islamic teacher</td>
<td>No/non</td>
<td>5-10 years</td>
</tr>
<tr>
<td></td>
<td>Female (FIT5)</td>
<td>30-40 years</td>
<td>Senior Islamic teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td>FGD4</td>
<td>Female (FST1) Participated in IDI</td>
<td>30-40 years</td>
<td>Senior Science teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td>5 Female Science teachers (FST)</td>
<td>Female (FST2)</td>
<td>30-40 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>5-10 years</td>
</tr>
<tr>
<td></td>
<td>Female (FST3)</td>
<td>30-40 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>5-10 years</td>
</tr>
<tr>
<td></td>
<td>Female (FST4)</td>
<td>30-40 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>Female (FST5)</td>
<td>20-29 years</td>
<td>Science teacher</td>
<td>No/non</td>
<td>5-10 years</td>
</tr>
</tbody>
</table>
5.3 Results

Codes were applied to identify school teachers’ opinions. For example, as shown in Table 5.1, “(FGD1, MIT1)” refers to a ‘male Islamic teacher’ participant from FGD 1. Similarly, “(FGD2, MST1)” refers to a ‘male science teacher’ participant from FGD 2. Themes emerged from the thematic analysis of school teachers’ responses and were categorised into four major themes: ‘Support for School-Based SRHE in Oman’, ‘Designing the SRHE Curriculum’, ‘Personal Facilitators and Barriers’ and ‘System Facilitators and Barriers…Need for Support’ (See Table 5.2).

The findings are reported from the school teachers’ perspective using their testimonies to address the research questions and provide recommendations towards planning and implementing school-based SRHE programs in Oman. By implementing such programs, this can result in improving Omani adolescents’ sexual health and well-being. The table below summarises the themes and sub-themes that arose during the school teachers’ interviews, which indicate the school teachers’ attitudes, beliefs, barriers and facilitators towards implementing school-based SRHE programs (See Table 5.2).
Table 5.2: School Teachers’ Data: Themes and related Sub-themes

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-Themes and Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Support for School-Based SRHE in Oman</td>
<td>Benefits of school-based SRHE programs for adolescents…<strong>will help to improve adolescent sexual health knowledge</strong>&lt;br&gt;  &lt;br&gt;   School teachers’ attitudes toward the content of SRHE programs…<strong>current sexual health information is old, not adequate and only related to human biology (only covers the reproductive system and HIV)</strong>&lt;br&gt;  &lt;br&gt;   Adolescents’ current sources of sexual and reproductive health information…<strong>bad friends, social media and smartphones</strong></td>
</tr>
<tr>
<td>2. Designing the SRHE Curriculum</td>
<td>The attitudes of school teachers towards aligning SRHE programs with Islamic beliefs&lt;br&gt;  &lt;br&gt;   The attitudes of school teachers toward appropriate age for SRHE programs…<strong>should be started from primary school and provided according to students’ age</strong>&lt;br&gt;  &lt;br&gt;   The attitudes of school teachers toward the appropriate person to teach SRHE programs…<strong>need to be conducted by qualified science teachers, Islamic teachers, and school nurses</strong>&lt;br&gt;  &lt;br&gt;   Teaching approaches for SRHE programs…<strong>books, TV educational programs, lectures, videos and share the responsibility with parents</strong>&lt;br&gt;  &lt;br&gt;   Sexual and reproductive health topics</td>
</tr>
<tr>
<td>3. Personal Facilitators and Barriers</td>
<td>Attitudes of school teachers toward discussing sexual matters with the opposite gender…<strong>feeling shy discussing with the opposite gender</strong>&lt;br&gt;  &lt;br&gt;   School teachers’ perceptions of sexual discussions as a socio-cultural taboo&lt;br&gt;  &lt;br&gt;   School teachers’ attitudes toward Islamic views of SRHE programs…<strong>Islam does not conflict with SRHE</strong></td>
</tr>
<tr>
<td>4. System Facilitators and Barriers: Need for Support</td>
<td>School teachers’ perceptions of system facilitators and barriers towards delivering SRHE at school…<strong>lack of polices and support, lack of time, personal lack of knowledge and the need for SRHE training</strong></td>
</tr>
</tbody>
</table>
5.3.1 THEME 1: Support for School-Based SRHE in Oman

Theme 1 explored the school teachers’ attitudes and beliefs towards the introduction of school-based SRHE programs in Oman. School teachers that were interviewed from the four FGDs and three IDIs, supported implementing school-based SRHE programs in Oman because of the benefits for students. Nevertheless, some of the school teachers showed concerns and fears about the negative outcomes of teaching SRHE. This theme was further delineated into three sub-themes of: ‘benefits of school-based SRHE programs for adolescents’, ‘school teachers’ attitudes towards the content of SRHE programs’ and ‘adolescents’ current sources of sexual and reproductive health information’.

5.3.1.1 Benefits of School-Based SRHE Programs for Adolescents…will help to improve adolescent sexual health knowledge

Islamic and science school teachers supported the introduction of school-based SRHE programs. Several school teachers in the focus groups acknowledged that school-based SRHE programs would help to improve adolescent sexual and reproductive health knowledge and reduce risky adolescent sexual behaviours. For example, Islamic and science school teachers reported that Omani adolescents lack sexual knowledge regarding puberty’s physiological changes and stated that SRHE would help to provide adolescents with sexual information about puberty as well as
other sexual matters, such as masturbation and child sexual abuse. They recommended that students should be educated about puberty’s physiological changes before reaching puberty. For example, one male science teacher from FGD2 strongly agreed to introduce school-based SRHE because:

“It will help to improve adolescent sexual health knowledge...it will help to prevent STIs and provide information regarding puberty’s physiological changes, masturbation and child sexual abuse” (FGD2, MST5).

Likewise, some female science teachers and female Islamic teachers reported that SRHE will be useful to educate female adolescents about menstruation. They reported that most Omani female adolescents do not receive SRHE about menstruation at their secondary school or at home due to a lack of sexual communication between mothers and their daughters. They indicated that girls start maturing physiologically in grade 6, with some female students already physiologically mature.

“In grade 6, the female students don’t know where menstruation comes from. They ask me, does the period come from the stomach? from the back?... they don’t have any education or knowledge about menstruation” (FGD4, FST4).

In contrast, some school teachers indicated that both educated and non-educated parents communicate with their adolescents about the right and wrong sexual behaviour (do not show his/her sexual organs to others), puberty physiological changes and menstruation. However, they believed that some parents are not qualified to educate their adolescents, provided minor non-scientific sexual information and need SRHE training. For example, a male Islamic teacher said:

“Some parents are educated, have good bonds with their adolescents and communicated with them about puberty changes and basic sexual information. I communicated with my son about puberty and masturbation” (FGD1, MIT5).
A male science teacher stated that although, parents want to communicate with their adolescents about their sexual inquires, some parents are unable to answer them or provide them with incorrect sexual information:

“Sometimes, children ask their parents many questions about the male and female reproductive system…children want to know more…parents find it difficult to answer their questions…SRHE will help to answer their questions correctly” (FGD2, MST4).

Moreover, a female science teacher from FGD4 indicated that school-based SRHE programs will be useful to prevent adolescent sexual problems. According to her, during puberty, adolescents have sexual drives to engage in sexual activity. She suggested that:

“SRHE should educate adolescents about risky sexual activities and sexual abstinence…sexual abstinence can help protect adolescents from STIs” (FGD4, FST3).

Some male and female Islamic teachers believed that school-based SRHE will help to improve adolescent Islamic knowledge related to sexual matters and hence, they were very supportive for the introduction of school-based SRHE. According to them, many adolescents do not know the Islamic rules and regulations regarding sexual matters (such as sexual abstinence until marriage). They indicated that school-based SRHE programs would help to cover both Islamic and scientific information regarding sexual matters. For example, a female Islamic teacher stated that:

“SRHE is very useful because it can provide scientific sexual information and link it to Islam…Islamic regulations about sexual abstinence and menstruation during the month of Ramadan, such as no praying during menstruation” (FGD3, FIT3).

There was general agreement among school teachers that adolescents involved in premarital sexual activity and risky sexual behaviours, such as unprotected sex were at higher risk to obtain STIs and HIV. Some school teachers reported that most adolescents do not know the
consequences of risky behaviours and believed that SRHE will be beneficial to reduce premarital sexual activity and educate adolescents about STIs, HIV and teenage pregnancy. For example, a senior male science teacher from FGD2 said:

“These days, due to the Internet and social media, many adolescents have the opportunity to easily engage in premarital sexual activity... they can easily contact with others...although premarital sexual activity is prohibited, adolescents engage in premarital sex in secret” (FGD2, MST1).

Likewise, a female science teacher reported that: ‘many male adolescents have girlfriends...many adolescents do not know the consequences of risky sexual behaviours, such as teenage pregnancy’ (FGD4, FST3). Both male and female science teachers reported that if adolescents followed the Islamic beliefs about sexual abstinence, they would not engage in premarital sexual activity. They suggested that regardless, the assumption that adolescents should follow and obey the Islamic beliefs, they should be educated about safe sexual practices (condom use) at secondary school:

“Most students do not know about STIs and its consequences...some adolescents have sexual relationships (premarital sex) ...we need to educate them about safe sexual practices (wearing a condom)” (FGD2, MST4).

This issue was also confirmed in the IDI with a senior male science teacher and thus, he strongly recommended to cover the topic of birth control and safer sex practices:

“Many adolescents and married men travel to Thailand and engage in risky sexual activity...This increases the risk of transmitting STIs to others. They need to be educated about safe sexual practices” (IDI, MST1).

In contrast, some school teachers were concerned about the introduction of school-based SRHE programs and reported that SRHE might make adolescents more aware about sexual
matters, motivate them to engage in sexual activity and increase the prevalence of premarital sexual activity:

“SRHE may make students aware of sexual information and motivate them to engage in sexual activities. Adolescents may use the information to engage in premarital sex” (FGD1, MIT5).

Similarly, a female Islamic teacher from FGD3 reported her concern about: “…making children aware of topics that they still don’t know about” (FGD3, FIT2). Therefore, school teachers in the four FGDs suggested that students should be provided with age-appropriate SRHE according to their developmental level. School teachers also indicated that school-based SRHE programs would be very useful to educate primary students about how to prevent child sexual abuse. Both Islamic and science school teachers stated that some younger students are likely to be sexually abused and most primary and secondary students do not know how to prevent child sexual abuse. Moreover, young primary school children do not receive SRHE at school or the home about child sexual abuse. For example, a senior female science teacher said:

“SRHE should start early at least at primary school to educate children about child sexual abuse…many students are exposed to sexual abuse at primary school/grades 1-4 inside the school. Students do not understand this abuse” (FGD4, FST1).

Most school teachers in the four FGDs reported that child sexual abuse is occurring in Omani schools. They argued that Omani secondary schools include students from grades 5 to 10 and because of this issue, younger students are at risk of being sexually abused by older students. They suggested that this issue should be considered and solved by the Oman MOE. For example, a male science teacher recommended that parents and schools should educate children about how to prevent child sexual abuse. He stated that:
“I have seen a younger male student sexually abused by an older male student at the school…Young students do not know about child sexual abuse” (FGD2, MST3).

Likewise, a female Islamic teacher from FGD3 stated her discomfort about the issue of younger students been sexually abused by older students in her son’s class (grade 7):

“My son tells me all the time: ‘mum they do this and that to us…mum we cannot even enter the bathroom’…how can a student in year 5 defend himself against a student in year 10? It’s impossible to fight…the older student will rape the younger student” (FGD3, FIT2).

Similarly, a senior male Islamic teacher in an IDI confirmed that school-based SRHE would be very useful to protect students from sexual abuse. According to him:

“Young students (grade 5-6) are sexually abused by older students (grade 8-10) in the school toilets or school classroom…the problem: secondary schools have students from grade 5 to 10” (IDI, MIT1).

According to some school teachers, older students may give money or valuable things to younger students to have sex with them or force them to have sex and threaten them if they try to tell anybody. Therefore, abused students are afraid to report to school teachers or their parents that they were sexually abused.

“…a child in the same class as my son (grade 7), was raped…. he did not say a word because he was frightened…. the child was scared” (FGD4, FST4).

School teachers recommended that: “students studying grades 5 and 6 must not be mixed with students studying grades 7-10 in the same school” (FGD3, FIT4). In addition to sexual abuse, some school teachers reported that younger students are non-physically abused: “…child abuse is very common in our schools. It includes both sexual abuse and non-physical abuse, such as
exposing the young students to sexual photos and videos by older students” (FGD4, FST3). Some school teachers also reported that some students were sexually abused by bus drivers:

“...all schools should have supervisors on the buses. This at least would reduce the crimes related to child sexual abuse that bus drivers commit” (FGD, MST2).

However, some science teachers and Islamic teachers indicated that, although child sexual abuse occurs in Omani schools, most cases of child sexual abuse are not reported and are hidden by school administrations. For example, one male Islamic teacher said:

“...one parent complained that his son was sexually abused by an older student at school...the school administration did not do anything...there is no clear school policy to deal with sexual abuse” (FGD1, MIT4).

In contrast, some Islamic teachers and science teachers indicated another important issue—that some children are sexually abused outside the school by an adult, older adolescents and by relatives or neighbours. They reported that some parents trust their relatives or neighbours and they strongly recommended that SRHE curriculum should cover the topic about how to prevent child sexual abuse by anyone (including family, neighbours, and friends):

“Children are sexually abused by an adult, older adolescent, by neighbours or relatives...the child does not understand or is afraid to report that they were sexually abused” (FGD2, MST5).

Similarly, one female Islamic school teacher reported the story of a child who was sexually abused by the child’s neighbours and hence, she suggested to start SRHE at primary school:

“...it is widespread...one neighbour sexually assaulted a child younger than him. He deceived the child, he said to him I will take you to the shop...he tried to molest him from behind” (FGD3, FIT5).
Furthermore, a senior female science teacher in the IDI explained how children are sexually abused by relatives:

“I know a family who experienced sexual assault from the nephews…the mother left her children at the grand mother’s home and the kids always meet at the grandmother’s place. So, the older boys sexually assaulted the younger ones” (IDI, FST1).

In addition, both female Islamic teachers and female science teachers indicated an important issue related to home-maids. They reported that children may be sexually abused by home-maids. According to the female school teachers who were interviewed, most Omani houses have home-maids, most mothers trust the home-maid and sometimes the home-maid is left alone with the kids at home:

“…the maid is in the home alone with the children…it’s a disaster…children need to know the risks if the home-maid tries to molest/abuse them…to tell their parents…the child should learn not to allow anyone to touch his/her genitals” (FGD3, FIT3).

Similarly, a female science teacher reported a story about her daughter who was sexually abused by a home-maid:

“They assault them. I saw it with my own eyes…I discovered that the home-maid was teaching my daughter to touch her genitals” (FGD4, FST5).

5.3.1.2 School Teachers’ Attitudes toward the Contents of SRHE Programs…current sexual health information is old, not adequate and only related to human biology (only covers the reproductive system and HIV)

This sub-theme examined the attitudes of Islamic teachers and science teachers towards the contents of the current SRHE curriculum in Omani schools. The teachers that were interviewed in the four FGDs, indicated that the current Omani SRHE curriculum is superficial, not adequate and does not cover many sexual and reproductive health matters (from both the scientific perspective and the Islamic perspective), which face adolescents these days. From the scientific
perspective, both male and female science teachers indicated that the current Omani school curriculum only covers brief sexual information related to the anatomy of the reproductive system and the biology of HIV. For example, one male science teacher from FGD 2 stated:

“The Omani school curriculum only covers superficial and minor SRHE topics. It covers two lectures in grade 9...only brief descriptions regarding the anatomy and physiology of the male and female reproductive systems” (FGD2, MST3).

In contrast, some male and female science teachers who had more than 10 years teaching experience reported that the current SRHE curriculum was outdated and requires restructure. According to them, nowadays, most adolescents use the Internet and social media; there are many websites that provide adolescents with pornographic and incorrect sexual information, and many adolescents engage in unprotected premarital sex. For example, a senior male science teacher—who was also the head of science at his school—said:

“The current SRHE curriculum is not enough and outdated...it is biology related (covers HIV and reproductive systems only) ...needs to be restructured...it was developed when there was no Internet or social media” (FGD2, MST1).

Both male and female science teachers who were interviewed indicated that current SRHE is delivered to grade 9 only (students aged 14) and argued that students often mature before grade 9. Thus, they require early SRHE to avoid receiving incorrect sexual information from bad friends or social media.

“Students reach puberty before grade 9...most students are exposed to bad sexual information from social media and bad friends before grade 9... SRHE should be conducted earlier, preferably before grade 9” (FGD4, FST4).

A senior female science teacher in an IDI confirmed that the current school curriculum does not cover many important SRHE topics, such as menstruation:
“The school curriculum does not include menstruation and masturbation, which are very important to be covered in the school curriculum...Some students ask me about menstruation and masturbation” (IDI, FST1).

In comparison, most male and female Islamic teachers indicated that the current SRHE curriculum does not provide information about Islamic beliefs towards sexual matters, such as menstruation, premarital sexual activity (sexual abstinence) and homosexuality. For example, a male Islamic teacher stated:

“Presently, there is no SRHE program in schools from both the scientific and Islamic perspectives. From the Islamic side, we only provide superficial information regarding sexual matters” (FGD1, MIT3).

Some male and female Islamic teachers acknowledged that although homosexuality is prohibited in the Muslim community, both Omani male and female adolescents engage in homosexual activities. They recommended that the issue of homosexuality should be taught to students in SRHE from both scientific and Islamic perspectives. From an Islamic perspective, they suggested that students should know that homosexuality is prohibited. From the scientific perspective, they suggested that students should know the risks of unprotected sex and STIs. For example, one male Islamic teacher said:

“Homosexuality is common among students…one male student said to me: ‘I am gay, I am happy to have sex with my boyfriend’...this topic is very important to be covered in school from both the Islamic and scientific perspective” (FGD1, MIT2).

Senior male and female Islamic teachers indicated that they discussed minor sexual topics with students from the Islamic perspective because they are not allowed to teach SRHE in school. Moreover, they commented on how there are no well-defined policies to teach SRHE in school. In
addition, they believed that SRHE is not conducted with in-depth information in science and Islamic subjects. For example, a senior female Islamic teacher from FGD3 stated:

“At the high school, we are teaching only one topic about Islamic beliefs towards marriage...We are teaching only superficial points...we are not allowed to teach...There are no clear policies to teach” (FGD3, FIT5).

Besides the lack of SRHE in Omani schools, the school teachers that were interviewed in the four FGDs indicated that both the Oman MOE and Oman MOH do not provide public SRHE to families and therefore, they argued that most Omani parents do not have adequate sexual and reproductive health knowledge to educate their adolescents. Furthermore, they stated that SRHE should be introduced at Omani schools as soon as possible to educate adolescents about sexual matters, such as puberty changes, menstruation, STIs, masturbation, premarital sexual activity (sexual abstinence), homosexuality and child sexual abuse. For example, a female Islamic teacher reported:

“There is a deficiency in the curriculum. Additionally, mothers do not give SRHE at home...it is the mother’s duty at least to educate her girls about menstruation and tell them what to wear” (FGD3, FIT2).

5.3.1.3 Adolescents’ Current Sources of Sexual and Reproductive Health Information...bad friends, social media and smartphones

This sub-theme discussed the school teachers’ attitudes towards the sexual sources of adolescents. The school teachers that were interviewed from the four FGDs, indicated that adolescents obtain most of their sexual information from their friends, social media and the Internet using advanced technology such as smartphones, computers, and iPads. For example, a female science teacher said:

“Most adolescents receive their sexual information from bad friends, the Internet, and social media: Facebook, Twitter, Instagram and WhatsApp” (FGD4, MST5).
Similarly, a senior male science teacher in an IDI reported that: “...students receive their sexual information from friends, social media and the Internet...bad friends send them sexual photos and videos” (IDI, MST1). Several school teachers stated that nowadays in Oman, there is widespread use of advanced technology, social media and the Internet among young adolescents. According to some of the teachers that were interviewed, the adolescents of the current generation can easily access the Internet and download many things, including sexual information, videos and photos while the adolescents of past generation did not have access to the Internet. They debated that during puberty, adolescents are more motivated to explore sexual matters by searching the Internet or using social media.

“At present, the use of social media and the Internet through iPads and smartphones are very common among Omani students because of advanced technology and it is simple to access the Internet...This is the age of electronics” (FGD4, FST3).

Likewise, a female Islamic teacher reported that: “Everyone in class has a smartphone. They can search Google, which is readily available under your fingertips...the child needs to know if the things that he/she is watching are appropriate or not” (FGD3, FIT2). Both science and Islamic teachers that were interviewed—including male and female participants—argued that friends, the Internet, and social media provide adolescents with incorrect and inappropriate sexual information and thus strongly recommended introducing SRHE programs at Omani schools. They suggested that receiving correct sexual information through a school-based SRHE program is better than receiving incorrect sexual information from bad friends, the Internet, and social media. For example, a male Islamic teacher said:

“School-based SRHE will help to educate adolescents with the correct sexual health information from trusted sources, rather than from the Internet or bad friends. Especially information about puberty’s physiological changes” (FGD1, MIT3).
A senior male Islamic teacher from FGD1 stated: “...when students’ phones were investigated by the school administration, most phones included a lot of inappropriate contents, such as sexual photos and videos” (FGD1, MIT1). Likewise, a senior female science teacher in an IDI confirmed this issue:

“Most Omani adolescents are exposed to smartphones, the Internet and social media, such as Facebook, Instagram, WhatsApp, and Twitter...They influence the sexual behaviours of adolescents and provide them with incorrect sexual information” (IDI, FST1).

Moreover, some school teachers indicated that social media and the Internet influence the sexual behaviours of adolescents and encourage them to engage in risky sexual behaviours, such as unprotected premarital sex. For example, one male Islamic teacher indicated that:

“...students learn bad sexual behaviours (such as premarital sex) from their friends and the Internet or they might see things on TV or smartphones and imitate sexual behaviours without realising the risks of these behaviours (FGD1, MIT1).

Although both science and Islamic school teachers interviewed suggested that adolescents should receive their sexual information from their parents, they claimed that currently, adolescents do not receive their sexual information from their parents. For example, a female science teacher stated:

“Parents and schools do not provide SRHE to adolescents. Most students have smartphones and engage in a lot of online forum discussions in which they receive a lot of inappropriate sexual content” (FGD4, FST2).

A male science teacher indicated some reasons why parents are not considered a source of sexual information for their adolescents:
“There is an absence of sexual communication between parents and their adolescents...some parents feel shy to initiate sexual communication with their adolescents” (FGD2, MST5).

Some school teachers stated other reasons, such as some parents are busy and generation gaps between parents and their adolescents leading to a lack of understanding. They believed that sexual communication between parents and their adolescents depends on the relationship between parents and adolescents as well as the education level of the parent.

“There is a difference of opinions and attitudes between younger adolescents and their parents...generation gaps, no friendship...some parents are old and non-educated (lack of sexual health knowledge)” (FGD4, FST2).

In contrast, some school teachers indicated that parents feel shy to discuss sexual matters with their adolescents because it is considered taboo. Furthermore, they indicated that the Omani society is very strict regarding sexual discussions. For example, a male science teacher said:

“I do not think that parents have sexual knowledge to educate their adolescents...some parents do not speak with their adolescents about sexual matters because of shyness and because it is considered taboo” (FGD2, MST3).

Hence, both science and Islamic teachers recommended that parents should receive SRHE training to provide SRHE to their adolescents. Some teachers debated that although some parents are educated, they do not discuss sexual matters with their adolescents because it is considered taboo and shyness associated with sexual discussions:

“Although some parents have basic information about SRHE such as how to protect from child sexual abuse, they will not talk with their kids because it is considered taboo” (FGD3, FIT1).
Some male and female Islamic teachers also reported that some children learn inappropriate sexual behaviour from their parents. They indicated that some children are sleeping in the same room with their parents and some parents practice sexual intercourse in the presence of their children without recognising the consequences of this behaviour. According to the Islamic teachers, most parents think that children do not understand sexual intercourse, but they do not know that some children may watch and imitate their behaviours with their siblings or students at school. For example, one male Islamic teacher said:

“Many primary students are sleeping with the parents. It is a big problem making the child sleep with the parents...They say the child does not understand but on the contrary, the child understands everything...and may even imitate his/her parents” (FGD1, MIT4).

Relatedly, a female Islamic teacher indicated that this type of behaviour may lead a boy to practice sexual intercourse with his sister. She reported a story regarding a boy who was sexually imitating his father that occurred at her school:

“An incident happened at my school, a boy grade 4 had been noticed by the teachers seducing the girls. He takes them to the side or in the bathroom and he does the same thing what his dad does” (FGD3, FIT4).
5.3.2 THEME 2: Designing the Sexual and Reproductive Health Education Curriculum

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Theme 2 investigated the school teachers’ views towards how they would want to design and structure SRHE curriculum. The related five sub-themes presented are: ‘the attitudes of school teachers towards aligning SRHE programs with Islamic beliefs’, ‘the attitudes of school teachers toward appropriate age for SRHE programs’, ‘the attitudes of school teachers toward the appropriate person to teach SRHE programs’, ‘teaching approaches for SRHE programs’ and ‘sexual and reproductive health topics.

5.3.2.1 The Attitudes of School Teachers towards Aligning SRHE Programs with Islamic Beliefs

This sub-theme further explored the school teachers’ views in relation to Islamic beliefs toward SRHE. School teachers in the four FGDs and three IDIs recommended that SRHE curriculum should be aligned with Islamic beliefs. They preferred that a school-based SRHE curriculum covers scientific information regarding sexual matters (such as menstruation, puberty, masturbation, homosexuality, premarital sexual activity etc.) as well as Islamic beliefs regarding these sexual matters. For example, they preferred that SRHE should educate adolescents about premarital sexual activity from a scientific perspective by covering information about STIs and safe sexual practices; and from an Islamic perspective by informing adolescents that according to
Islamic regulations, premarital sexual activity is prohibited and they should avoid engaging in any sexual activities with another person until marriage (sexual abstinence).

“Besides, scientific information, SRHE curriculum should consider the Islamic beliefs towards sexual matters such as premarital sexual activity (prohibited”)” (FGD2, MST1).

Similarly, a female science teacher reported that “...we cannot only provide a scientific perspective regarding sexual matters without including Islam...Islamic rules and regulations regarding sexual matters, such as what is Halal (allowed) and what is Haram (prohibited)” (FGD4, FST4). According to some male and female Islamic teachers, adolescents should have strong Islamic beliefs towards sexual matters. They believed that Islam can help to promote positive sexual health behaviours by encouraging adolescents to avoid premarital sexual activity (sexual abstinence):

“...not only from a health aspect...it is important to connect SRHE with Islam...Islam can strongly influence adolescents' sexual behaviours by avoiding premarital sex, teenage pregnancy, and other immoral sexual behaviours” (FGD1, MIT3).

Another example was reported by a female Islamic teacher about how SRHE can be aligned with Islam:

“At grades 7-9, we can educate students with scientific information about physiological puberty changes and Islamic beliefs towards menstruation...during the days of menstruation, women are not asked to pray and should not have sexual intercourse” (FGD3, FIT5).

5.3.2.2 The Attitudes of School Teachers toward Appropriate Age for SRHE Programs...should be started from primary school and provided according to students’ age

This sub-theme examined the attitudes of Islamic teachers and science teachers towards the appropriate age to begin teaching SRHE to students. Several school teachers in the four FGDs preferred that SRHE should start in primary school. They believed that early SRHE can provide
children with basic sexual information, such as how to prevent child sexual abuse. For example, a male science teacher from FGD2 stated:

“SRHE should start early at least from primary school. At the primary school age, children are sometimes exposed to sexual abuse at school or outside the school...children do not understand sexual abuse” (FGD2, MST4).

Furthermore, one female Islamic teacher said: “...at primary school, the child should learn how to protect their genitals so that no one sees them except the mother and the father” (FGD3, FIT5). Some school teachers reported that nowadays, most young children have iPads or smartphones and may be exposed to bad sexual information from friends, the Internet, and social media. They believed that early SRHE would help to prevent receiving bad sexual information:

“Young students receive bad sexual information (naked sexual videos and pictures) before grade 4, from the Internet, social media and friends...Early SRHE will help to educate children to avoid watching bad sexual videos and pictures” (FGD2, MST1).

Although several school teachers that were interviewed in the four FGDs preferred early SRHE, they were concerned about students being made aware of complex information at an early age. They suggested that students should be provided with age-appropriate sexual health information. Both science and Islamic teachers were concerned that, at primary school, children are not ready and cannot understand complex sexual information. For example, a male science teacher indicated that:

“I recommend starting teaching SRHE at primary school with age-appropriate sexual information...it should be conducted gradually according to the developmental level of the students” (FGD2, MST3).

Likewise, one female Islamic teacher suggested that: “...if school-based SRHE is approved by the MOE, it should be provided according to the students’ age...Each stage has its own
sexually-related matters” (FGD3, FIT2). This suggestion was also confirmed by a senior female science teacher in an IDI:

“SRHE should be provided according to the child’s age, because they may give the children information more advanced than what their brains can process…direct them based on their capacity of understanding and their age” (IDI, FST1).

Therefore, many school teachers suggested that, at primary school, students can be educated with simple and basic SRHE, such as child sexual abuse and components of the reproductive system. However, at secondary school, they suggested that adolescents can be educated with more advanced sexual information, such as puberty, masturbation, menstruation, contraception, teenage pregnancy and STIs. For example, a female science teacher suggested that: “SRHE should be started gradually…students at grades 1-4 should be educated about how to prevent child sexual abuse…at grade 5-8, students can be provided with SRHE about puberty, masturbation, and menstruation…advanced SRHE topics should be left for high school” (FGD4, FST2).

Similarly, a male Islamic teacher reported that SRHE should be started gradually from grade 1 to grade 12 and in each grade, students should be provided with age-appropriate SRHE. For example, he suggested that:

“At grades 6 (age of 11), students experience physiological and puberty changes and therefore it is very good to provide the student with SRHE about puberty changes and psychological issues associated with puberty” (FGD1, MIT2).

Furthermore, some female Islamic and female science teachers preferred very early SRHE. They suggested that SRHE should be started before primary school at kindergarten or at home with basic and simple sexual information, such as teaching them what is right and what is wrong:
“We don't need to explain in detail but educate them starting from kindergarten about simple things. For example, no one should touch their private parts...no one should look at them except parents and the doctor only” (FGD3, FST1).

One female Islamic teacher stated that preschool children may be sexually abused by a caregiver at home and thus, he preferred that:

“...it should start from home or the kindergarten. We are starting to see things happening even with the nanny. She might expose the children’s genitals s...we should explain this to the child in very simple terms” (FGD3, FIT4).

In contrast, a few male participants from FGD1 and FGD2 preferred that SRHE should be started late—at secondary school (grade 6). They reported that, at secondary school, students are mature, experience puberty and are ready to receive SRHE. Nevertheless, they expected that early SRHE can make children aware of sexual matters and motivate them to engage in sexual activity. For example, a male Islamic teacher said:

“I prefer to provide SRHE at grade 6 and above. Students at primary school are not mature and will not understand sexual information...they are still kids and may use sexual information to explore sex or engage in sex” (FGD1, MIT4).

5.3.2.3 The Attitudes of School Teachers toward the Appropriate Person to Teach SRHE Programs...need to be conducted by qualified science teachers, Islamic teachers, and school nurses

This sub-theme discussed the attitudes of Islamic and science teachers towards the appropriate people to deliver school-based SRHE programs for students. There was general agreement that SRHE is a very difficult task and cannot be conducted by one educator and that it should be conducted by a collaboration of qualified Islamic school teachers, school nurses and science school teachers. Most school teachers that were interviewed believed that Islamic teachers can provide students with Islamic views towards sexual matters, while school nurses and science
teachers can provide students with scientific sexual information. For example, a senior male science teacher suggested:

“I think that SRHE should be conducted through trained science teachers, school nurses and Islamic teachers...Islamic teachers are very important...they can provide the students with Islamic beliefs regarding sexual matters” (FGD1, MST1).

Likewise, a male Islamic teacher from FGD1 reported that: “Science teachers and school nurses can teach about scientific sexual health information such as puberty, contraception and STIs” (FGD1, MIT5). Some male and female Islamic teachers commented that parents and students would not accept SRHE being delivered only by Islamic teachers due to their lack of knowledge in the scientific field. They claimed that students and parents would be more willing to accept SRHE being delivered by a collaboration of qualified educators, such as science school teachers, Islamic school teachers, and school nurses:

“...parents and students will say that: Islamic teachers are not qualified to conduct scientific SRHE” (FGD1, FIT2).

However, school teachers in the four FGDs indicated that delivery of SRHE is a sensitive task and requires teaching skills and knowledge. They believed that qualified and trained Islamic teachers, science teachers and school nurses can deliver sensitive sexual topics and provide students with accurate sexual and reproductive health information. For example, a male science teacher believed that science teachers and school nurses would be good sexual health educators for students, but he was concerned that: “We lack knowledge regarding SRHE and we need preparation, training, and workshops. I did not receive any SRHE in my bachelor’s degree in science” (FGD2, MST4). Similarly, a female Islamic teacher preferred to conduct SRHE through qualified school teachers and school nurses because:
“Many science teachers and school nurses lack teaching skills and are unable to talk with students about sensitive sexual topics, such as masturbation and condom use...They are not prepared” (FGD3, FIT2).

A senior male Islamic teacher from an IDI restated that SRHE can be conducted by Islamic teachers, science teachers and school nurses who have teaching and communication skills to conduct sensitive sexual topics to students:

“When we were teaching high school students about Islamic beliefs towards sexual intercourse, most students asked many questions in order to make other students laugh and to embarrass the teacher...that is why some teachers skip teaching sexual topics” (IDI, MIT1).

In addition, some female and male science teachers indicated that SRHE should be conducted by qualified educators who have knowledge in psychology:

“I believe that psychological knowledge is very important because sexual issues are associated with emotions...it is important to understand the psychological nature of students and their sexual issues” (FGD3, FST4).

Therefore, several school teachers suggested that Islamic teachers, science teachers, and school nurses should receive SRHE training before conducting school-based SRHE programs. For example, a senior female science teacher in an IDI confirmed that:

“SRHE can be conducted by science teachers or school nurses. However, both school nurses and science teachers are not prepared and qualified to teach SRHE and should receive SRHE training” (IDI, FST1).

Some school teachers suggested that school science teachers and school nurses should receive academic preparation in the field of SRHE to become specialised and qualified sexual health educators through:
"The Oman MOE and the Oman MOH. They should offer SRHE specialty courses at universities for school nurses and science teachers" (FGD3, FIT5).

5.3.2.4 Teaching Approaches for SRHE Programs...books, TV educational programs, lectures, videos and share the responsibility with parents

This theme referred to the school teachers’ views towards teaching approaches that can be used to conduct school-based SRHE programs. The school teachers that were interviewed in the four FGDs, suggested using many teaching methods to deliver SRHE programs, such as using lectures, books, booklets, stories and TV educational programs that are organised by the Oman MOE and the Oman MOH. For example, a male science teacher said:

"SRHE can be conducted through the media (TV education programs conducted by the Oman MOE and the Oman MOH), PowerPoints, videos and lectures" (FGD2, MST2).

Similarly, one female science teacher indicated that: "...school-based SRHE can be conducted at school using books, lectures, videos about how to avoid child sexual abuse and all should be provided by the Oman MOH" (FGD4, FST2). Both male and female Islamic teachers considered SRHE materials from the Oman MOE and the Oman MOH would be very useful to educate the public and adolescents. For example, one female Islamic teacher reported that:

"Ten years back, the Oman MOH conducted TV education programs about contraceptive methods to reduce the number of unwanted pregnancies...it was very helpful. It educated me and my family about contraceptive methods" (FGD3, FIT5).

In contrast, some teachers suggested that stories and movies would be more effective in delivering SRHE for students: "...stories will affect them a lot and also watching a story through a video will have a bigger effect on children especially in grades 1 to 4" (FGD4, FST4). Moreover, some Islamic and science teachers indicated that the use of peer education would be very useful:
“We can educate one student with SRHE and ask him to educate his friends. Some students listen to their friends more than their parents and school teachers” (FGD2, MST3).

Some female Islamic and science school teachers also indicated that some SRHE topics are sensitive topics and hence, they preferred that SRHE topics should be segregated by gender:

“Topics that are related to females should be taught to females only and things that are related to males should be taught to males only” (FGD3, FIT3).

Several school teachers that were interviewed in the four FGDs reported that involving parents in the delivery of SRHE is a good approach in that it can enhance the success of school-based SRHE programs. Thus, they recommended that there should be a shared responsibility between the school and home so that the responsibility does not lie solely on the school. They believed that students who receive SRHE from their parents would have good sexual behaviours compared to adolescents who do not receive.

“Give parents some responsibility... home should be the base of warning the child about sexual harassment... parents should also teach their children” (FGD1, MIT2).

One female science teacher preferred that there should be direct communication between the parents and the school regarding the students’ sexual behaviours. However, she was concerned about parents’ reactions:

“I have heard it so many times from the school administration. Whenever female students behave inappropriately, they tell us not to tell the mother and the father because they will kill them” (FGD4, FST4).

Some male and female science teachers reported that the involvement of parents in school-based SRHE is very important because sometimes, students are uncomfortable to discuss sexual matters with their school teachers:
“Some adolescents are shy and uncomfortable to ask school teachers about their sexual queries but are more comfortable in asking their parents” (FGD2, MST5).

In contrast, some science and Islamic school teachers argued that some parents are not educated and should be educated by the school before involving them in delivering SRHE to their adolescents.

“Most Omani parents lack sexual knowledge…parents should be educated by the school in order to educate their adolescents” (FGD2, MST4).

Islamic and science school teachers suggested that parents can be involved in delivering SRHE for their adolescents through the school:

“Schools can invite parents to attend SRHE meetings at school and provide them with SRHE materials, such as CDs and booklets” (FGD4, FST1).

5.3.2.5 Sexual and Reproductive Health Topics

This sub-theme examined the attitudes and beliefs of school teachers towards which sexual topics should be covered in school-based SRHE programs. Both science and Islamic school teachers recommended a comprehensive SRHE program that covers a variety of sexual topics including sensitive sexual topics, such as contraceptive methods and teenage pregnancy. They suggested that each sexual topic should be appropriate for students’ age and developmental level. For example, they suggested that at primary school, students should be educated about how to avoid child sexual abuse (genitals should not be touched by others) and at secondary school, students should be educated about puberty changes, such as growing breasts and menstruation for females. For example, a male science teacher indicated that:

“...early age with simple SRHE topics and late age with advanced topics…At primary school, SRHE should cover child sexual abuse” (FGD2, MST2).
A female science teacher from FGD4 suggested that: “…at grade 6-7, the SRHE curriculum should cover the reproductive systems and puberty changes…at grade 9, it should cover STIs and HIV…at grades 10-12, it should cover contraception and STIs” (FGD4, FST3). Several school teachers suggested that the introduction of condom use and teenage pregnancy in the SRHE curriculum should be included later. They believed that there should not be parental or cultural issues associated with teaching condom use and teenage pregnancy in SRHE curriculum because these days, the parents and society are more open and realise the influence of advanced technology, the Internet and social media in adolescent sexual behaviours. For example, a senior male science teacher in an IDI restated that:

“I think that parents will accept the teaching of condom use and teenage pregnancy because they know that their adolescents engage in premarital sexual activity and receive inappropriate sexual information from social media and the Internet” (IDI, MST1).

In contrast, some school teachers stated that there would be opposition from parents for teaching about condom use and teenage pregnancy because premarital sexual activity is taboo and forbidden in the Muslim community:

“…our society is very conservative; not open-minded…there is a lot of taboo and shyness associated with discussions regarding condom use” (FGD3, FIT5).

Similarly, a male science teacher said that some parents might refuse school-based SRHE programs because they may think that school-based SRHE could motivate their adolescents to engage in sexual behaviours:

“Parents may not accept the teaching of condom use for their adolescents because they might worry that it will motivate their adolescents to practice what they learn and engage in sexual behaviours” (FGD2, MST5).
Both male and female Islamic teachers reported that, regardless of the Islamic beliefs towards premarital sexual activity (prohibited), parents should be open-minded and educate adolescents about teenage pregnancy, STIs, contraception, and condom use. This is because many adolescents do not know about Islamic beliefs or do not obey Islamic beliefs; they engage in premarital sexual activities; and do not know about STIs, HIV and safe sex practice.

Furthermore, some school teachers from the four FGDs reported that the Omani school curriculum does not discuss homosexuality and recommended that this topic should be covered in the SRHE curriculum because many adolescents engage in same sex sexual behaviours. For example, a male science teacher stated:

“Homosexuality is a very important topic to be covered in the SRHE curriculum—from both scientific and Islamic perspectives—starting from grade 6-7. This will help to prevent STIs” (FGD2, MST2).

Likewise, a male Islamic teacher reported that he had caught many older students engaging in homosexuality in the toilets. He restated in an IDI that:

“...some adolescents and married men are homosexual and do not know the consequences of risky sexual behaviours...They should know about safe sexual practice to avoid STIs and HIV” (IDI, MIT1).

Some science and Islamic teachers suggested that during puberty, students should be well-informed that they might experience nocturnal emissions or feel the urge to masturbate. For example, a male science teacher said:

“We do not discuss the topic of nocturnal emissions with students...most adolescents experience nocturnal emissions and do not know why it happens...They should be taught about nocturnal emissions during puberty” (FGD2, MST4).
Regarding masturbation, one male Islamic teacher reported: “I saw some male students masturbating in the classroom...this topic needs to be covered in the SRHE curriculum” (FGD1, MIT2). Most science teachers reported that it is better that adolescents receive scientific information about masturbation at school than receiving incorrect information from friends or social media. For example, a female science teacher suggested that during the period of puberty (grades 7-9), masturbation should be covered in the school curriculum:

“Many adolescents practice and ask questions about masturbation, such as is it bad or good and why? They usually receive incorrect information about masturbation from the Internet, friends and social media” (FGD4, FST3).

In contrast, some school teachers were concerned that teaching about masturbation because it may motivate students to masturbate:

“...one negative consequence of teaching students about masturbation is that students may not know about masturbation and start masturbating” (FGD1, MIT3).

Islamic teachers also recommended that adolescents should be educated about abstinence from both the Islamic and scientific views. They believed that if adolescents follow the Islamic beliefs about premarital sex (prohibited and they should abstain from sex until married), the rate of teenage pregnancies and STIs among adolescents will be reduced. For example, a female Islamic teacher suggested that at secondary and high school, adolescents should know that:

“Islam forbids any sexual relationship without an official marriage...sexual abstinence should be covered in the SRHE school curriculum due to high levels of premarital sexual activity among adolescents...this will reduce teenage pregnancies and STIs among adolescents” (FGD3, FIT3).
5.3.3 THEME 3: Personal Facilitators and Barriers

Theme 3 highlighted the school teachers’ perceptions of facilitators and barriers towards the delivery of SRHE for students in Omani schools. The following three sub-themes were identified: ‘school teachers’ attitudes towards the Islamic views of SRHE programs’, ‘attitudes of school teachers toward discussing sexual matters with the opposite gender’ and ‘school teachers’ perceptions of sexual discussions as a socio-cultural taboo’.

5.3.3.1 Personal Facilitators

5.3.3.1.1 School Teachers’ Attitudes toward Islamic Views of SRHE Programs…Islam does not conflict with SRHE

This sub-theme examined the attitudes and beliefs of school teachers towards Islamic views of SRHE. The school teachers that were interviewed in the four FGDs reported that Islam does not conflict with SRHE and is not a barrier for the introduction of school-based SRHE programs in Oman. According to some school teachers, Islam (Quran and Sunna) discusses many sexual matters. For example, a male Islamic teacher said:

“Islam does not conflict with sexual discussion. People were asking the prophet Mohammed about many things relating to their sexual concerns. Islam encourages people to learn and ask about sexual matters” (FGD1, MIT3).
Similarly, a female Islamic teacher reported that: “The holy Quran discusses sexual matters, such as premarital sex, homosexuality, reproduction, child sexual abuse, and menstruation...Islam is not a barrier” (FGD3, FIT1). Likewise, a male Islamic teacher stated that: “Islam discusses many sexual matters. One example is that the Prophet Mohammed said that boys and girls should not sleep together (separate) in the same bed when they reach the age of seven” (FGD1, MIT2).

The school teachers argued that the introduction of school-based SRHE may conflict with Omani culture but that it does not conflict with Islamic beliefs:

“The culture of Oman may be a barrier for teaching SRHE but Islam does not conflict with SRHE...in Omani culture, sexual discussion is taboo and restricted” (FGD2, MST4).

Some science and Islamic teachers suggested that socio-cultural taboos about sexual discussion can be reduced by increasing public awareness:

“SRHE should be introduced gradually in the Omani society because of socio-cultural taboos about SRHE...start by educating the Omani community about the importance of SRHE in reducing risky sexual behaviours among adolescents ” (FGD4, FST1).

Although, the school teachers that were interviewed in the four FGDs stated that Islam was not a barrier and that it did not conflict with the introduction of SRHE, they suggested that SRHE curriculum should be taught within Islamic beliefs as mentioned in a previous sub-theme: ‘school teachers’ attitudes toward Islamic religious views of SRHE programs’. For example, a female science teacher indicated that school-based SRHE does not conflict with Islamic beliefs, but she recommended that:

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“SRHE should be linked to Islamic beliefs…when we teach about condom use, we need to teach the scientific information on the benefits of condom use as well as Islamic beliefs regarding sexual activities outside marriage (prohibited)” (FGD4, FST4).

5.3.3.2 Personal Barriers

5.3.3.2.1 Attitudes of School Teachers toward Discussing Sexual Matters with the Opposite Gender…feeling shy discussing with the opposite gender

This sub-theme examined the school teachers’ comfort towards discussing sexual health issues with students of the opposite gender. Both science and Islamic school teachers stated that they were uncomfortable and felt shy to provide SRHE to the opposite gender because of the Omani culture. According to some school teachers, in Oman, males normally discuss sexual matters with other males and females discuss sexual matters with other females. For example, a female science teacher said:

“The issue of differences in gender…in our culture, it is difficult for a female to present a lecture about sexual matters to male students…there are aspects related to shyness and embarrassment” (FGD4, FST2).

Similarly, a male science teacher reported that: “It is very difficult to discuss sexual matters with female students…I am embarrassed to explain to them about sexual intercourse, menstruation, ejaculation and stuff like that…it is a barrier”. A male Islamic teacher recommended that school nurses and school teachers who conducted SRHE should be the same gender as the students:

“…female school nurses or female school teachers will feel uncomfortable and shy to teach SRHE to male students because of our culture” (FGD1, MIT3).

However, some school teachers that were interviewed indicated that, currently in Omani schools, there would be no gender issues related to the delivery of SRHE to grades 5-12 by male
or female school teachers because, in grades 5-12, boys and girls are separated: there are schools for girls with female teachers and schools for boys with male teachers.

“I do not think that there will be a gender issue with the delivery of SRHE in Omani schools...currently, male teachers only teach male students and female teachers only teach female students” (FGD3, FIT1).

5.3.3.2.2 School Teachers’ Perceptions of Sexual Discussions as a Socio-Cultural Taboo

This sub-theme discussed the cultural barriers that prevent school teachers from delivering school-based SRHE programs. Both science and Islamic school teachers in the four FGDs stated that sexual discussion is generally taboo and there are elements of shyness and shame. Therefore, most school teachers avoided sexual discussions with students. For example, a senior male science teacher stated that:

“Our society is very closed (not open) regarding sexual discussions with adolescents. This is due to culture, fear, shyness...sexual discussion is considered as a social taboo” (FGD2, MST1).

Likewise, another male science teacher reported that “We suffer from social taboo and shame...most people feel shame, are shy and uncomfortable when carrying or buying a condom...we are restricted by our traditions” (FGD2, MST4). According to some Islamic and science teachers, social taboo is the reason for the absence of sexual communication between parents and adolescents. Furthermore, some teachers reported that because of social-cultural taboo, school teachers may face problems with delivering SRHE. For example, a female science teacher said:

“Presently, sexual communications between school teachers and students are very limited...the culture of our society is very conservative regarding sexual discussions. School administrations may even cause problems for the teachers” (FGD4, FST2).
Moreover, because of social-cultural taboos and an absence of sexual communication among Omani people, some Islamic and science school teachers were worried about parental opposition towards SRHE. For example, a male science teacher reported that:

“I am worried that I will be blamed by parents...students will inform their parents that teachers are discussing sexual matters, such as condom use with us...parents may complain to the school administration” (FGD2, MST5).

Similarly, a senior male Islamic teacher in an IDI restated that society and social-cultural taboos did not encourage him to deliver SRHE and thus, he avoided discussing sexual matters with students:

“There are cultural taboos...parents and school administrations will question me if teach sexual issues.... teachers may be terminated from their jobs. We cannot teach sexual health matters, such as homosexuality and masturbation as we want to avoid problems” (IDI, MIT1).

School teachers that were interviewed also indicated that, although parents and policy makers in the Oman MOE and the Oman MOH know that Omani adolescents engage in premarital sexual activity and risky sexual activity, they ignore the importance of the introduction of school-based SRHE because of socio-cultural taboos. For example, a male Islamic teacher stated that:

“There are premarital sexual activities in our society. Many students engage in unprotected sex. However, our community remains silent towards the discussion of sexual issues” (FGD1, MIT3).

In contrast, some science and Islamic school teachers debated that, if the society remains silent and secretive towards discussions on sexual issues, students may experience sexual assault, STIs and psychological problems, which can affect their academic achievements. They suggested that the introduction of school-based SRHE programs—under the regulation of the Oman MOE
and the Oman MOH—would enhance parental acceptance of these programs and reduce socio-cultural taboos.

“Parents will be more willing to accept school-based SRHE programs if they are regulated by the Oman MOE and the MOH because parents trust the MOE and the MOH” (FGD2, MST2).

Furthermore, science teachers suggested that to obtain social support for the introduction of school-based SRHE programs in Oman, the programs should start gradually and also increase public awareness about the importance of SRHE.

“We did not receive SRHE from our parents and grandparents...SRHE is considered a new subject in our community. We need time...It should be introduced gradually...first educate the public” (FGD4, FST4).

In comparison, some Islamic teachers suggested that socio-cultural taboos towards SRHE can be reduced by considering the Islamic view when designing the SRHE curriculum.

“...considering the Islamic beliefs when developing school-based SRHE programs will help reduce taboos and increase public acceptance of these programs” (FGD1, MIT4).
5.3.4 THEME 4: System Facilitators and Barriers: Need for Support

This section analysed the school teachers’ views in relation to the barriers that they face from school administrations and the support they need to conduct school-based SRHE programs under the sub-theme: ‘School teachers’ perceptions of system facilitators and barriers towards delivering school-based SRHE’.

5.3.4.1 School Teachers’ Perceptions of System Facilitators and Barriers towards Delivering School-Based SRHE...lack of polices and support, lack of time, personal lack of knowledge and the need for SRHE training

5.3.4.1.1 Facilitators

Several school teachers that were interviewed in the FGDs reported that they are better sources to educate students about sexual matters compared to friends, social media or the Internet. They believed that science and Islamic school teachers can provide students with the appropriate and correct sexual health information. For example, one male science teacher said:

“Science teachers are good sources of sexual information because they have a science background...Even I have little sexual health information, my information is better than the information from friends or social media” (FGD2, MST2).

Likewise, a female science teacher indicated that: “It is better to receive SRHE from school teachers rather than friends...Science teachers have some sexual health information...friends provide students with wrong information” (FGD4, FST4). Nevertheless, most science and Islamic teachers reported that they do not have enough sexual and reproductive health information and that
there is a need for SRHE training to boost their role as a provider of SRHE. For example, a senior male science teacher said:

“I am a senior science teacher and I have experience only in the current school science curriculum. I need more training about STIs and contraception” (FGD2, MST1).

Similarly, a senior female science teacher in an IDI restated that she lacked the sexual health knowledge to conduct school-based SRHE:

“I do not have enough sexual health knowledge... We need sexual health workshops on topics, such as STIs, contraception and communication skills to conduct sensitive sexual topics” (IDI, FST1).

According to some science school teachers, the bachelor degrees of science teachers do not cover sexual and reproductive health subjects:

“During my bachelor’s degree in science, I did not receive sexual health information on topics, such as STIs and contraception. I do not have the scientific knowledge to teach about condom use. We need workshops” (FGD2, MST4).

Islamic teachers also reported that they are only knowledgeable with Islamic views towards sexual matters and do not have scientific sexual health information to deliver SRHE for students. For example, a male Islamic teacher said:

“We can answer students’ inquiries about Islamic rules and regulations related to sexual matters. However, we need training to teach sexual health matters from a scientific perspective” (FGD1, MIT5).

Therefore, both science and Islamic teachers suggested that the Oman MOE and the MOH can prepare school teachers to deliver SRHE through:

“SRHE should be covered in the bachelor’s degree of science or offer sexual health courses at the College of Education” (FGD4, FST3).
Science and Islamic school teachers that were interviewed reflected that SRHE preparation and training can facilitate school teachers to conduct school-based SRHE—including sensitive sexual—without feeling shamed. For example, a male Islamic teacher said that when he talked with students about Islamic views towards any sexual matters, some students created jokes to make others laugh and to embarrass the teacher. He believed that:

“Trained teachers have communication skills. Trained teachers will not get embarrassed and they will be able to talk about everything that the subject entails” (FGD1, MIT4).

In contrast, some school teachers indicated that some students feel embarrassed to talk with school teachers about their sexual issues and suggested that SRHE training would facilitate school teachers to build trust and good relationships with students.

“Some adolescents are shy and are afraid to talk to school teachers about their sexual inquires...trained school teachers will be able to build trust and rapport with their students” (FGD2, MST4).

5.3.4.1.2 Barriers

There was general agreement among the science and Islamic teachers who were interviewed that current Omani school policies do not support school teachers to conduct school-based SRHE programs. According to them, there are no clear school policies and guidelines to teach SRHE for students. Consequently, most school teachers do not discuss sexual matters with students to avoid been questioned and blamed by school administrations or parents. For example, a senior male science teacher stated:

“I do not engage in sexual discussions with students. We should follow the school curriculum and there are no clear school policies and guidelines to teach school-based SRHE” (FGD2, MST1).
Similarly, a female science teacher indicated that she follows the current school curriculum, which is very superficial and does not cover many sexual health matters. He was concerned about getting into trouble from the school administration:

“We do not have SRHE policies. Teachers will be questioned by the school administration for teaching outside the curriculum...they even be prosecuted by the court for further investigations” (FGD4, FST4).

Likewise, a female Islamic teacher reported: “I do not teach about sexual health matters to avoid problems. I teach according to the school curriculum. Why should I put myself in trouble when there are no clear SRHE policies” (FGD3, FIT5). Moreover, another female Islamic teacher reported that, although she wanted to talk with female students about sexual health matters such as homosexuality and menstruation, she was worried to teach outside the school curriculum because she thought that the information might be miscommunicated and that could lead to trouble for her from the parents and school administration.

“Some female students may misunderstand the information I tell them in the class. The school administration will question me...some mothers may come yelling: I don’t want you to talk to my daughter about things like that” (FGD1, FIT2).

Relatedly, a senior female science teacher in an IDI confirmed that school SRHE policy and school administration were a barrier and did not support her to conduct SRHE:

“I was questioned by the school administration for teaching female students about contraception...they told me: do not talk about sexual matters, just concentrate on the school curriculum” (IDI, FST1).

However, both science and Islamic teachers stated that they would be very comfortable to teach school-based SRHE within well-defined policies and guidelines established by the Oman
MOE and the MOH. They believed that both parents and school administrations would trust SRHE being delivered under regulation from the Oman MOE and the MOH:

“…if there are sexual policies established by the Oman MOE or the MOH, both parents and school administrations will accept SRHE…with SRHE policy, I will be very comfortable to teach SRHE” (FGD2, MST3).

In addition, school teachers believed that sexual health policies would guide them to deal with students’ sexual issues. According to them, school administrations stressed that teachers should not deal with students’ sexual problems. For example, one male Islamic teacher reported that:

“There are no policies related to penalties for students who commit bad sexual acts at school…Some students bring their smartphones to school, which include inappropriate sexual content and share them with other students” (FGD1, MIT2).

Some school teachers also indicated that most Omani schools do not report students’ sexual issues—such as sexual abuse—and believed that sexual health policy that is regulated by the Oman MOE would guide them to deal with these issues.

“…one parent complained that his son was sexually abused by an older student at school. The school administration and teachers did not do anything…the case was not even reported” (FGD2, MST4).

Moreover, school teachers who were interviewed in the four FGDs reported that schools should consider the barrier of curriculum overload and allocate sufficient time to conduct SRHE.

“We do not have time to teach SRHE. We are overloaded with the science curriculum and each class has 35 students. We need adequate time” (FGD4, FST1).
5.4 Summary

This chapter presented the interview results from 20 school teachers (four FGDs and three IDIs) from Phase one of this study. Four major themes and 12 sub-themes emerged from the thematic analysis of school teachers’ responses. The four major themes were: ‘support for school-based SRHE in Oman’, ‘designing SRHE curriculum’, ‘personal facilitators and barriers’ and ‘system facilitators and barriers…need for support’ (See Table 5.1). The school teachers that were interviewed supported a comprehensive age-appropriate school-based SRHE, which covers a variety of sexual health topics. They believed that the current school sexual curriculum is not adequate and that the introduction of school-based SRHE would improve adolescent sexual health knowledge instead of receiving incorrect sexual health information form friends, the Internet, and social media. In addition, school teachers strongly recommended that SRHE content should be aligned with Islamic beliefs and be taught by trained school teachers. School teachers also indicated that Islam does not conflict with SRHE but that sexual discussion is generally considered taboo and generates shame and shyness in Omani society. Finally, school teachers reported that there are no SRHE policies to support them to conduct SRHE and suggested the need for SRHE training.

Chapter 6 presents the qualitative results from Phase one, which was conducted with five female school nurses. A major focus of the presentation is the major themes and sub-themes identified from the nurses’ interviews.
Chapter 6: Qualitative Results from the School Nurses’ Interviews

6.1 Introduction

This chapter discusses the results from the female school nurses’ interviews conducted in Phase one of this study. In March 2016, one FGD was conducted with five female school nurses who were working in five different public secondary schools (using convenience sampling). Each female school nurse was responsible to provide school health care for all the students from one secondary school (covering more than 3000 students). Thus, these five female school nurses reported in-depth information about their attitudes and beliefs towards the introduction of school-based SRHE programs. Following on from the FGDs, one face-to-face IDI was conducted three months later with one senior female school nurse—who also participated in the FGD—to confirm some of the key findings from the FGD. Implementing only one FGD is appropriate if the interview is conducted successfully (Creswell, 2014).

Primary data was collected using a pre-piloted set of semi-structured interview questions. The interpretation of the date from the interview, allowed concepts and relationships to be organised thematically. As discussed in the methodology chapter, the theoretical framework of Braun and Clark (2006) was used during the thematic analysis process. Textual and verbatim examples from the school nurse’s interview helped to address and answer research objectives and questions. Data that was collected from the FGD with the school nurses was coded systematically and a thematic analysis was performed. Member checking and associated debate and concurrent agreement then took place to maintain rigor. Subsequently, the most contextually rich statements that were relevant to the identified thematic analysis were then selected to represent the participants’ experience and perceptions (Creswell, 2014; Morse, 2003). The themes and sub-themes identified relate to the broadly applied key research questions.
6.2 School Nurses’ Demographic Details and Sampling

Five female school nurses met the study’s criteria and participated in one FGD. Table 6.1 presents the demographical composition of the school nurses’ who participated in the FGD and the IDI. Four school nurses were in the 30-40 age range and one school nurse was above 40 years old. In terms of qualification and sexual health training, all five school nurses had a Diploma of Nursing. However, none of them had received sexual health training. All five school nurses reported that they only provided annual SRHE to the school students.

Table 6.1 Demographic Data of School Nurses’ FGD and IDI

<table>
<thead>
<tr>
<th>Number of FGD/ Total School Nurses</th>
<th>Code</th>
<th>Gender</th>
<th>Age</th>
<th>Provision of SRHE to Students/If Yes How Regularly</th>
<th>Receiving SRHE Training/If Yes How recently</th>
<th>Years of Working Experiences as a School Nurse</th>
<th>Education Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>One FGD with 5 Female School Nurses (SN)</td>
<td>(SN1) Female</td>
<td>30-40 Years</td>
<td>Yes/Annually</td>
<td>No</td>
<td>5-10 Years (Senior)</td>
<td>Diploma of Nursing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SN2) Female</td>
<td>30-40 Years</td>
<td>Yes/Annually</td>
<td>No</td>
<td>2-4 Years</td>
<td>Diploma of Nursing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SN3) Female</td>
<td>30-40 Years</td>
<td>Yes/Annually</td>
<td>No</td>
<td>2-4 Years</td>
<td>Diploma of Nursing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SN4) Participated in IDI Female</td>
<td>Above 40 Years</td>
<td>Yes/Annually</td>
<td>No</td>
<td>&gt;10 Years (Senior)</td>
<td>Diploma of Nursing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SN5) Female</td>
<td>30-40 Years</td>
<td>Yes/Annually</td>
<td>No</td>
<td>2-4 Years</td>
<td>Diploma of Nursing</td>
<td></td>
</tr>
</tbody>
</table>
6.3 Results

Codes were applied to identify school nurses’ opinions. For example, as shown in Table 6.1, “(FGD, SN1)” refers to a ‘school nurse’ participant from the FGD. Similarly, “(IDI, SN4)” refers to the ‘school nurse’ participant from the IDI. The themes that emerged from the thematic analysis of female school nurses’ responses were categorised into four major themes: ‘Support for School-Based SRHE in Oman’, ‘Designing SRHE Curriculum’, ‘Personal Facilitators and Barriers’ and ‘System Facilitators and Barriers…Need for Support’ (See Table 6.2).

The findings from the nurses’ perspective were reported using their testimonies to address the research questions and provide recommendations towards the planning and implementation of school-based SRHE programs in Oman in order to improve and maintain Omani adolescents’ sexual health and well-being. The table below summarises the themes and sub-themes that arose during the school nurses’ FGD. The table indicates the female school nurses’ attitudes, beliefs, barriers and facilitators towards implementing school-based SRHE programs (See Table 6.2).
<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-Themes and Brief Description</th>
</tr>
</thead>
</table>
| **Support for School-Based SRHE in Oman** | Benefits of school-based SRHE programs for students…*students do not know and should know*  
School nurse attitudes toward the content of SRHE programs…*current sexual health information is superficial and related to human biology only*  
Adolescents’ sources of sexual and reproductive health information…*importance of friends, social media and smartphones* |
| **Designing the SRHE Curriculum** | The attitudes of school nurses towards aligning SRHE programs with Islamic beliefs  
The attitudes of school nurses toward appropriate age for SRHE programs…*SRHE should be started in grade 5/age of 10*  
The attitudes of school nurses toward the appropriate person to teach SRHE programs…*need to be conducted by qualified educators*  
Teaching approaches for SRHE programs…*use of books, CD, lectures, videos and involve parents*  
Sexual and reproductive health topics |
| **Personal Facilitators and Barriers** | Attitudes of school nurses toward teaching SRHE programs to opposite genders…*feeling shy teaching male students*  
School-nurses’ perceptions of parental issues and barriers…*parents will blame us for corrupting their children*  
School-nurses’ attitudes toward Islamic views of SRHE programs…*Islam is not a barrier to providing SRHE* |
| **System Facilitators and Barriers: Need for Support** | School nurses’ perceptions of system facilitators and barriers towards delivering SRHE programs…*Lack of policy and guidelines for teaching SRHE, lack of sexual health knowledge and the need for SRHE training.* |
6.3.1 THEME 1: Support for School-Based SRHE in Oman

This major theme presented school nurses’ attitudes and beliefs towards the introduction of school-based SRHE programs in Oman. The school nurses who were interviewed supported implementing school-based SRHE programs in Oman. This theme was further described by four sub-themes of: ‘benefits of SRHE programs for students’, ‘school nurses’ attitudes towards the content of SRHE programs’ and ‘adolescents’ sources of sexual and reproductive health information’.

6.3.1.1 Benefits of SRHE Programs for Students…students do not know and should know

The school nurses that were interviewed indicated that the provision of school-based SRHE programs can result in improved adolescent sexual and reproductive health knowledge and minimise sexual risk taking, which would improve the quality of life for adolescents. There was a general consensus among school nurses that most Omani students lack the sexual and reproductive health knowledge regarding puberty’s physiological and anatomical changes, reproductive systems, contraceptive methods, and teenage pregnancy. For example, one school nurse said:

“A school-based SRHE program is very important. It will educate the male and female students about puberty and the development of their body because there are many students in Oman, that do not know about the development of their body” (FGD, SN2).
Furthermore, she believed that school-based SRHE programs would be very important for females to know about contraceptive methods, pregnancy and everything related to female sexual and reproductive health issues. Likewise, another school nurse recommended that adolescents should receive SRHE so they can understand the physiological changes during puberty. For example, she suggested:

“...students have to study about the reproductive systems and puberty changes to know what changes will happen to them” (FGD, SN5).

Several school nurses who were interviewed also reported that many Omani adolescents were involved in premarital sexual activity and lack the sexual and reproductive health knowledge regarding the consequences (teenage pregnancy and STIs) of engaging in risky and unsafe sexual behaviours. For example, according to one senior school nurse:

“Students must know that there are changes will happen in their body. Some girls might go with boys, but they do not know about sexual intercourse, STIs or that they may become pregnant. If you will ask her, she will say I did not know that that could happen” (FGD, SN4).

This issue was restated in the IDI. She indicated that sexual relationships (boys with girls) can occur among students aged 13 or 14 and that these students do not know anything about sexual relationships, STIs and teenage pregnancy:

“In our hospital, we received many cases of teenage pregnancies among female students aged 13 to 14 (pregnant without marriage/premarital sex). Students do not know the consequences of engaging in risky sexual behaviours” (IDI, SN4).

Likewise, another school nurse stated: “…some students have sexual relationships at the age of 13 or 14. They do not know what is happening to their body. Girls do not know that if they have sex with their boyfriend, they can become pregnant” (FGD, SN3). Additionally, some female
school nurses who were interviewed highlighted that Omani adolescents suffer from STIs and the introduction of school-based SRHE programs would help to reduce STIs among Omani adolescents by improving their knowledge regarding the transmission and prevention of STIs. For example, one school nurse stated:

“School-based SRHE programs are very important because Omani adolescents do not know about SRHE and many suffer from STIs” (FGD, SN1).

In addition, there were common views among school nurses who were interviewed that young students are sexually abused. However, they reported that most young students do not know about sexual abuse and how to prevent it. Therefore, they supported the introduction of school-based SRHE programs in the early grades in order to teach young adolescents about how to prevent sexual abuse. For example, one school nurse suggested that SRHE can be started at age of 10 (grade 5) because young students might be sexually abused.

“Child sexual abuse happens in grade 5 and sometimes even earlier. Students have to know if this is abuse or not…somebody holding them or touching them” (FGD, SN3).

The school nurses that were interviewed reported that Omani schools include students from grade 5 to grade 11 and thus, they argued that younger students from the early grades (1-7) may have been sexually abused inside the school by older students from grades (9-12). According to some school nurses, some younger students had complained to them that some older students were bringing their smartphones to show them some sexual videos and photos and some of the older students forced the younger students to have sex. For example, one female school nurse reported that younger students regularly experience contact and non-contact sexual abuse by older students. She stated:

“The older students are using them. Students in grade 5 are sexually abused by students from grades 9-10, because in school we have students from grade 5 to grade 11. I have
noticed and seen in many schools that some younger students were sexually abused”

(FGD, SN3).

Some female school nurses indicated that younger students who study in grades (1-6) are sexually abused and scared of older students as they have stronger bodies:

“...we have seen some cases of child sexual abuse in schools. Older students force the younger students to have sex with them. Older students often are taller and have stronger body-build than younger students. Younger students are afraid of them” (FGD, SN5).

Relatedly, the senior school nurse in the IDI confirmed that younger students are sexually abused by older students:

“...older students force younger students to have sex. Younger students are afraid of them. In my opinion, I think it is very important to teach adolescents about SRHE” (IDI, SN4).

Moreover, some school nurses who were interviewed reported that children are sometimes sexually abused outside the school by relatives or neighbours. For example, one school nurse said:

“Younger students can be sexually abused outside the school when they go outside to play. The students must know how to prevent sexual abuse, the anatomy of the reproductive systems and puberty’s physiological changes” (FGD, SN4).

Likewise, another school nurse stated that: “...younger students are sexually abused outside the school by relatives or neighbours” (FGD, SN1). School nurses who were interviewed stated that cases of child sexual abuse were not managed by them, but that they were managed by school administration and parents. However, they indicated that most cases of child sexual abuse were mostly hidden and not reported by school administrations.
“Cases of student sexual abuse are not reported in the school. We are not dealing with these cases. These cases are managed by the school administration. School administrations mostly hide students’ sexual abuse cases” (FGD, SN3).

In addition to that, one female school nurse indicated that some younger students who have been sexually abused may be afraid and unwilling to report it to their parents or school teachers. She stated:

“We are not dealing with cases of student sexual abuse. Most cases of child sexual abuse are not reported. Sometimes, sexually abused students are afraid to tell their teachers or their parents that they are sexually abused at school” (FGD, SN5).

Therefore, female school nurses who were interviewed recommended that SRHE should be introduced in Omani schools as soon as possible, in order to educate adolescents about the consequences of engaging in unsafe sexual behaviours including STIs and teenage pregnancy and how to prevent sexual abuse.

6.3.1.2 School Nurse Attitudes toward Content of SRHE Programs…current sexual health information is superficial and related to human biology only

This sub-theme explored school nurse attitudes and beliefs towards the current contents of SRHE in the Omani school curriculum. The school nurses who were interviewed supported implementing school-based SRHE programs because they believed that current SRHE in Omani schools is not adequate since most of the topics are superficial, minor, are biologically related and mainly about AIDS/HIV. For example, one school nurse reported that “The current topics are not enough. They are superficial and minor. We need to introduce more topics” (FGD, SN1). Likewise, according to another school nurse:

“Most school nurses only teach about the biology of AIDS/HIV (causes and transmissions) we only provide students with minor and superficial sexual health information” (FGD, SN5).
Most school nurses reported that they wanted to teach and cover more SRHE topics than just the biology of AIDS/HIV: “We need to include more SRHE topics” (FGD, SN3). However, they indicated that current SRHE topics in the school curriculum are designed, selected and regulated by the Oman MOE and the Oman MOH:

“Currently, the sexual health topics that we deliver to students are organised and regulated by the Oman MOE and the MOH. However, these topics are superficial and do not include enough sexual issues” (FGD, SN1).

6.3.1.3 Adolescents’ Sources of Sexual and Reproductive Health Information…importance of friends, social media and smartphones

This sub-theme explored the school nurses’ attitudes towards the sources of sexual and reproductive health information of Omani adolescents. There was general agreement among female school nurses who were interviewed that young adolescents received most of their sexual and reproductive information from their friends, the Internet, and social media through smartphones, Facebook, WhatsApp, Instagram and Snapchat. In contrast, most school nurses who were interviewed indicated that most adolescents do not receive their sexual and reproductive information from their parents or schools. They believed that most adolescents do not have close and good sexual communication with their parents and are shy and hesitant to initiate sexual discussions with their parents. For example:

“The most common sources of sexual information of adolescents are friends and the Internet. Parents are not an important source. Some students are too shy to ask their parents regarding sexual issues. There are no close relationships between parents and their adolescents” (FGD, SN4).

Similarly, one female school nurse suggested that parents should be the ones to educate their adolescents. However, she believed that:
“Many parents do not have enough information...cannot answer their adolescents’ questions. Students rarely ask their parents regarding sexual matters as they feel shy to ask” (FGD, SN1).

She also indicated that: “…some students may even feel shy to ask school teachers and school nurses regarding sexual matters” (FGD, SN1). This view was also common among other female school nurses:

“They will also not ask parents, teachers or school nurses. The most important sources for adolescents are the Internet and friends (FGD, SN3).

However, the school nurses who were interviewed argued that friends, the Internet, and social media were not good sources and provided adolescents with inappropriate and incorrect sexual and reproductive information; causing long-standing effects on their sexual and reproductive health and well-being. Hence, they suggested that adolescents should receive SRHE through parents and school-based SRHE.

“Smartphones and easy access to the Internet play an important role in the sexual behaviours of adolescents. Many students receive wrong and bad sexual information from the Internet and social media. Students should be educated by schools and parents” (FGD, SN2).

One female school nurse indicated that curiosity is an adolescent trait that decreases after an adolescent enters adulthood. She reported that:

“...most adolescents are curious during their adolescent developmental stage and want to explore and know more about sexual issues before settling down into adulthood” (FGD, SN1)

Consequently, she suggested that “...students should receive early sexual health education from school and their family in collaboration with the Oman MOE and the MOH to avoid receiving
wrong information from the Internet and social media” (FGD, SN1). Several school nurses who were interviewed reported that nowadays in the Middle East, adolescents can access the Internet using smartphones and computers, make friendships through the Internet and receive and share inappropriate sexual material with their friends. Accordingly, they strongly supported the introduction of school-based SRHE programs in Oman. For example, a senior school nurse in the FGD stated that:

“Easy access to the internet these days has led to young students watching sexual videos and photos, which they should not see. In my school, two young girls (grade 7) were using the facilities in the computer room to watch sexual videos” (FGD, SN4).

In the IDI, she restated that the Internet can provide students with wrong and inappropriate sexual information: “Students can easily access the Internet and social media. Smartphones of female students include many sexual videos and pictures. Even though students are not allowed to bring their phones to school, most students bring their phones” (IDI, SN4). Likewise, another school nurse in FGD stated a similar view:

“At school, most students share their sexual videos and photos with each other. Some students are influenced by their friends in the school. School-based SRHE must be introduced at school” (FGD, SN3).

The school nurses who were interviewed believed that cultural and social changes, such as modernisation and easy access to the Internet through computers and smartphones have increased the prevalence of premarital sexual activity among Omani adolescents. For example, one senior school nurse said:

“Sexual relationships (boyfriend or girlfriend) occur among adolescents due to advanced technology, widespread use of the Internet and social media including Facebook, WhatsApp, Instagram and Snapchat” (FGD, SN5).
6.3.2 THEME 2: Designing the Sexual and Reproductive Health Education Curriculum

This theme highlighted the attitudes and beliefs of the school nurses towards designing a SRHE curriculum. This theme had five sub-themes of: ‘the attitudes of school nurses towards aligning SRHE programs with Islamic beliefs’, ‘the attitudes of school nurses towards appropriate age for SRHE programs’, ‘the attitudes of school nurses towards the appropriate person to teach SRHE programs’, ‘teaching approaches for SRHE programs’ and ‘sexual and reproductive health topics’.

6.3.2.1 The attitudes of School Nurses towards Aligning SRHE Programs with Islamic Beliefs

This sub-theme investigated the school nurses’ views in relation to Islamic beliefs. There was a consensus among the school nurses who were interviewed that SRHE should be aligned with Islamic beliefs in terms of its rules and regulations.

“The contents of school-based SRHE should not conflict with Islamic beliefs...School-based SRHE should consider Islamic rules and regulations” (FGD, SN3).

Similarly, another female school nurse indicated that Islamic rules, regulations, and beliefs towards sexual matters must be included in the SRHE curriculum. For example, she stated that SRHE be aligned with Islamic beliefs by educating adolescents about sexual abstinence: “SRHE
curriculum should indicate that, in Islam, premarital sex is prohibited...educate adolescents about sexual abstinence: do not get involved in any sexual activity until marriage” (FGD, SN1). This was a common view among other female school nurses who were interviewed.

“It is very important that school-based SRHE programs should consider the beliefs of Islam in their contents. They should teach Islam’s views regarding sexual issues, such as how premarital sex is prohibited in Islam” (FGD, SN5).

Furthermore, some school nurses who were interviewed believed that linking Islamic beliefs with SRHE can help to improve adolescent sexual health behaviours. They claimed that most adolescents do not have both Islamic and scientific information regarding sexual health matters. They believed that covering Islamic sexual beliefs in school-based SRHE programs would increase the adherence of adolescents towards Islamic rules and regulations. For example, avoiding premarital sex until marriage (sexual abstinence), which can result in reducing STIs and teenage pregnancies among adolescents. One school nurse suggested:

“Islamic rules, regulations, and beliefs must be considered when developing school-based SRHE programs. Practicing Islamic sexual rules can help adolescents avoid premarital sex and reduce STIs and other risky sexual behaviours” (FGD, SN2).

6.3.2.2 The Attitudes of School Nurses toward Appropriate Age for SRHE Programs…SRHE should be started in grade 5/age of 10

This section highlighted the attitudes of school nurses towards the appropriate age to start SRHE programs. Most school nurses who were interviewed reported that SRHE should be started in grade 5 (age of 10). They suggested that the introduction of SRHE in grade 5 will prepare the adolescents to understand their anatomical and physiological changes during puberty. For example, one female school nurse reflected that: “...school-based SRHE can be started at grade 5 to make girls ready and prepared for menstruation and other physiological changes associated with puberty” (FGD, SN4). Likewise, another school nurse indicated that:
“School-based SRHE should begin at grade 5. They should know about their body’s developments during the adolescent period. I have seen girls go through menstruation at grade 5 and they were anxious and did not know how to manage it” (FGD, SN2).

In contrast, some school nurses indicated that the early introduction of school-based SRHE would help to prevent sexual abuse among students. For example, one school nurse reported that school-based SRHE can be started in grade 1 (age of 6) because young students might be sexually abused inside and outside the schools.

“Sexual abuse mostly occurs in the early grades 1-5. Primary school students have to know about child sexual abuse. They should know that nobody should touch their genitals” (FGD, SN3).

However, some school nurses who were interviewed did not support the early introduction of SRHE (grades1-4/primary school) and claimed that early SRHE can motivate children to misbehave sexually and begin early initiation of sexual intercourse. For example, one school nurse said:

“SRHE should not be started at primary school because students are still children. We do not want to make them aware of sexual issues. SRHE should be started at grade 5 or 6 in order to prepare girls for menstruation and other puberty changes” (FGD, SN1).

6.3.2.3 The Attitudes of School Nurses toward the Appropriate Person to Teach SRHE Programs…need to be conducted by qualified educators

This section presented the attitudes and beliefs of school nurses towards choosing an appropriate person to teach school-based SRHE programs for adolescents. Several school nurses that were interviewed believed that SRHE should be conducted through qualified and specialised educators who have received SRHE training. For example, one school nurse indicated that:

“…school-based SRHE programs should be delivered by an educator who has received special
training on sexual and reproductive health” (FGD, SN2). Similarly, another school nurse suggested that:

“SRHE should be conducted through qualified educators...qualified educators who receive SRHE training can easily teach school-based SRHE programs and answer students' difficult questions” (FGD, SN5).

There was general agreement among all the school nurses that were interviewed that: “...science teachers are appropriate to conduct SRHE programs” (FGD, SN1, SN2, SN4). However, the school nurses who were interviewed suggested that science teachers do not have enough sexual health skills and knowledge and should receive training before teaching SRHE. For example, as reflected by one senior school nurse:

“I do not think that science teachers will be able to answer students’ questions without receiving SRHE training. They do not have enough sexual health skills and knowledge. They feel shy to answer students’ questions regarding sexual issues” (FGD, SN4).

Similarly, another school nurse reported that some brief information about contraceptive methods is covered in science subjects. However, she argued that most science teachers skip this information due to a lack of sexual knowledge and comfort.

“...science teachers ask us to conduct lectures about contraceptive methods to female students because they do not know anything about it (side effects, how to use). Also, they feel shy and uncomfortable to talk to the students about contraception or condom use” (FGD, SN3)

In addition, the school nurses who were interviewed suggested involving Islamic teachers in conducting SRHE as they are familiar with Islamic sexual beliefs. For example, one senior school nurse said:
“It is very good to include Islamic teachers in school-based SRHE programs. They are knowledgeable about Islam and can provide students with the correct Islamic rules and regulations regarding sexual issues” (FGD, SN1).

6.3.2.4 Teaching Approaches for SRHE Programs…use of books, CD, lectures, videos and involve parents

This section highlighted the opinions of school nurses towards the teaching approaches for school-based SRHE programs. As reflected by one school nurse, SRHE can be taught by using: “…videos, lectures or books at school for students” (FGD, SN3). These suggestions were common among the other school nurses that were interviewed. They also suggested that involving the adolescent’s family in conducting SRHE is very important for the success of school-based SRHE programs. For example, one senior school nurse reported that involving the family in SRHE is very important because parents know more about their adolescents’ sexual problems and some adolescents trust their parents. She suggested that SRHE can be conducted by using:

“Books or brochures for both the students and their families…parents can be provided with booklets about how to educate their adolescents regarding sexual and reproductive health matters such as menstruation and the prevention of child sexual abuse” (FGD, SN4).

Similarly, one school nurse suggested that SRHE can be conducted using: “…videos, lectures, books, involving parents…we can meet mothers and fathers in schools and provide them with lectures about SRHE” (FGD, SN5). Another school nurse advised that parents can be educated using CDs:

“Parents can be involved by sending them educational CDs about sexual issues so they can easily learn and educate their children about sexual issues, such as how to prevent child sexual abuse” (FGD, SN2).
6.3.2.5 Sexual and Reproductive Health Topics

This sub-theme investigated the attitudes of school nurses towards the SRHE topics that should be considered when designing the SRHE curriculum in an Islamic setting. The majority of the school nurses who were interviewed supported a comprehensive SRHE program that covers many SRHE topics. For example, one school nurse suggested that SRHE should include topics such as:

“...puberty’s physiological changes, menstruation for girls, the transmission and prevention of STIs such as HIV, hepatitis and syphilis” (FGD, SN5).

In addition to these topics, the inclusion of controversial topics, such as child sexual abuse, nocturnal emissions, masturbation, and homosexuality were strongly suggested by these female school nurses. As reflected by one female school nurse, the SRHE curriculum should include:

“Child sexual abuse, masturbation, nocturnal emissions, anatomical changes of the body, the reproductive system and STIs such as HIV/AIDS, hepatitis and syphilis” (FGD, SN4).

Likewise, one school nurse indicated that: “...the topic of homosexuality (same sex sexual relationships) should be covered in the SRHE curriculum from both the Islamic and scientific perspectives...some male students engage in same sex sexual practices” (FGD, SN2). Moreover, most school nurses who were interviewed recommended that SRHE programs should include sensitive sexual health topics related to contraceptive methods, condom use, teenage pregnancy, and sexual relationships. For example, one school nurse said:

“I think that contraceptive methods, condom use, and teenage pregnancy should be included in the SRHE as there have been some cases of teenage pregnancies that have occurred among Omani female students” (FGD, SN1).
6.3.3 THEME 3: Personal Facilitators and Barriers

This theme explored the personal facilitators and barriers of school nurses towards the provision of school-based SRHE programs under the following three sub-themes: ‘School-nurses’ attitudes toward Islamic views of SRHE programs’, ‘attitudes of school nurses toward teaching SRHE programs to opposite genders’ and ‘school-nurses’ perceptions of parental issues and barriers’.

6.3.3.1 Personal Facilitators

6.3.3.1.1 School-Nurses’ Attitudes toward Islamic Views of SRHE Programs…Islam is not a barrier to providing SRHE

This sub-theme explored the attitudes and beliefs of school nurses toward Islamic views of SRHE. There was general agreement among the school nurses who were interviewed that Islam is not a barrier and does not conflict with the provision of SRHE. For example, one school nurse said:

“Islam is not a barrier to providing SRHE. Islam mentions many things regarding sexual and reproductive health issues” (FGD, SN3).

Likewise, another school nurse reported some sexual topics are discussed by the Holy Quran, such as homosexuality and premarital sex:
“Islam does not conflict with the introduction of school-based SRHE programs because many things regarding sexual and reproductive health issues have already been discussed in the Holy Quran, such as homosexuality, premarital sex, breastfeeding and menstruation etc” (FGD, SN1).

The school nurses that were interviewed reported that the Holy Quran highlights the importance of acquiring and pursuing knowledge including SRHE knowledge and the discussion of sexual matters is not taboo but is fully acknowledged and respected in the Islamic religion. For example, one school nurse indicated:

“During the period of Prophet Mohammed, men and women were never hesitant or shy to ask him about Islam’s views about their sexual issues. This clearly indicates that Islam is not a barrier to providing SRHE” (FGD, SN4).

However, some school nurses indicated that even though SRHE does not conflict with Islam, the provision of SRHE may conflict with the Omani culture. For example, one school nurse indicated that:

“In Oman, sexual discussion is considered taboo and most Omani people do not talk about sexual issues…sexual discussion is very rare among Omani people” (FGD, SN1).
6.3.3.2 Personal Barriers

6.3.3.2.1 Attitudes of School Nurses toward Teaching SRHE Programs to Opposite Genders...feeling shy teaching male students

This sub-theme explored the attitudes of female school nurses towards teaching male students. All five female school nurses who were interviewed stated that they felt uncomfortable and shy to teach SRHE to male students. For example, one senior school nurse stated:

“Teaching SRHE to male students is more difficult than teaching it to female students. We will provide basic topics but we cannot provide in-depth information for male students because I feel shy to teach male students. The students will say the nurse is not good” (FGD, SN1).

Likewise, one school nurse reported that: “...it is very difficult to provide SRHE to male students because male students may ask deep questions and I feel shy to answer their questions” (FGD, SN2). Moreover, one school nurse reflected that she was shy and uncomfortable to teach sensitive sexual health topics (masturbation and nocturnal emissions) to male students:

“Many male students were talking and asking me about masturbation and nocturnal emissions...one male student said: I am masturbating every day...They want to know more about it. I feel shy to talk about these issues with male students” (FGD, SN3).

The school nurses who were interviewed reported that they were more comfortable to provide SRHE for female students than male students because in Oman—and other Islamic communities—women are often expected to be demure, sexually naïve and have limited interaction with men and boys. For example, one school nurse said:

“I feel uncomfortable to discuss sexual issues with male students because, in our culture, females often discuss sexual issues with other females. If I discuss sexual issues with male students, some students may say something bad about me...this may hurt my modesty and chastity” (FGD, SN5).
6.3.3.2.2 School-Nurses’ Perceptions of Parental Issues and Barriers…parents will blame us for corrupting their children

This sub-theme represented the attitudes and beliefs of school nurses regarding parental support for implementing school-based SRHE programs. The school nurses that were interviewed felt that parents would not support them to conduct SRHE for their adolescents. They were afraid of parental opposition and felt that parents would blame them for corrupting their adolescents. For example, one senior school nurse stated that she cannot deliver the topic of condom use for the students because:

“We are not allowed and do not have the authority to talk with students about sensitive sexual issues such as condom use. In addition, if we teach students about condom use, parents may complain because they do not agree that it is appropriate to discuss this topic with their adolescents” (FGD, SN4).

Similarly, another school nurse reported that: “I am afraid of parents...parents will say that: school nurses are corrupting the minds of the students about sexual issues...Teaching students something bad” (FGD, SN2). Furthermore, a senior school nurse—who had experience with Omani school nursing and Omani community health—indicated that she had provided SRHE about contraceptive methods to secondary school girl students aged 17-18 (grade 12) and both parents and school teachers had agreed that it was inappropriate. According to her, most school teachers said that this topic was inappropriate for the female students as they were still too young for this information and that it should only be delivered for married girls.

“In my first year of school nursing, I discussed contraceptive methods with female students and most school teachers (some teachers were parents) said: you should not teach them this topic. They blamed me for teaching them this topic” (FGD, SN1).
Some school nurses who were interviewed suggested that school nurses’ fears of parental opposition towards the provision of SRHE can be reduced if the Oman MOE and the MOH regulated and organised SRHE topics of the school curriculum.

“...we can teach about condom use and others sexual issues if these issues are included in the school curriculum under the regulation of the Oman MOH and the MOE. If sexual health topics are regulated by the Oman MOH and the MOE, parents will trust us and not say anything” (FGD, SN1).

In contrast, some school nurses suggested that fear of parental opposition can be reduced by educating the public about the importance of school-based SRHE programs.

“Before we conduct school-based SRHE programs, we should increase the awareness of parents towards the importance of school-based SRHE programs so parents will not blame us for corrupting their children if we teach SRHE” (FGD, SN5).
6.3.4 THEME 4: System Facilitators and Barriers: Need for Support

This theme analysed the attitudes of school nurses towards the support they need to conduct SRHE in the school under the following sub-theme: ‘school nurses’ perceptions of system facilitators and barriers towards delivering SRHE programs’.

6.3.4.1 School Nurses’ Perceptions of System Barriers and Facilitators towards Delivering SRHE Programs...Lack of policy and guidelines for teaching SRHE, lack of sexual health knowledge and the need for SRHE training.

6.3.4.1.1 Facilitators

Most school nurses who were interviewed considered themselves as good sources of SRHE for adolescents and that they were better candidates than science school teachers for teaching SRHE. For example, one school nurse reflected that:

“School nurses have more sexual health information about the reproductive systems, contraception, STIs and disease prevention than science teachers” (FGD, SN4).

Likewise, another school nurse indicated that: “...school nurses have more knowledge and clinical experiences regarding sexual health issues than science school teachers” (FGD, SN5).

However, the female school nurses who were interviewed stated that they still lacked the knowledge and skills to conduct SRHE and that they needed SRHE training. For example, one school nurse stated:
“Providing SRHE is not easy. It should cover many sexual health topics, such as masturbation, menstruation, and STIs. I need training. I do not have sufficient and accurate information. How can I fully answer the students' questions?” (FGD, SN5).

The school nurses indicated that SRHE training was an important facilitator to conduct SRHE: “I do not have any SRHE experience. I have only brief information. If I had SRHE training, I would be able to conduct SRHE and answer students’ questions” (FGD, SN4). They argued that these days, students are smart and ask difficult questions and hence, nurses needed SRHE training. For example, one school nurse said:

“For me, I cannot teach without a certificate because students are very smart. Students ask difficult questions. I need training, so I will be able to answer students' questions accordingly” (FGD, SN3).

Some suggestions were reported by the school nurses for improving their sexual health knowledge and skills. For example, one school nurse suggested that:

“...school nurses should receive SRHE training, such as a review about the anatomy and physiology of the reproductive system, STIs, contraception, adolescent developmental stages, and sexual communication skills” (FGD, SN3).

Moreover, there were regular testimonies among the school nurses that they needed to improve their Islamic knowledge regarding sexual matters by working together with Islamic teachers and religious leaders.

“Islam’s beliefs should be integrated into the school-based SRHE programs. We do not have enough information about Islamic rules and regulations towards SRHE. We need to work with Islamic teachers about this” (FGD, SN1).
6.3.4.1.2 Barriers

This sub-theme examined the barriers that face Omani school nurses towards delivering school-based SRHE programs. Most school nurses that were interviewed reported that the Oman MOE and the MOH do not support school nurses to conduct SRHE. They indicated that the lack of clear polices and guidelines for teaching SRHE are the main reasons that most Omani school nurses avoid the provision of SRHE for the students. For example, one school nurse indicated that:

“The current school policy of the MOE does not support me to conduct SRHE. Currently, we do not have clear polices and guidelines for teaching SRHE...What are the topics we should teach? How should we manage the students' sexual issues?” (FGD, SN2).

Similarly, another school nurse said: “...the Oman MOE does not support us to conduct SRHE. It does not provide us with clear polices and training in this area. It ignores this section and does not show concern about it” (FGD, SN3). This issue was also restated by the senior school nurse in the IDI:

“Currently, we do not have clear guidelines regarding SRHE. Hence, most school nurses are afraid to teach SRHE. They will be questioned by the MOE and the MOH for teaching SRHE to students” (IDI, SN4).

However, some school nurses reported that most students asked school nurses and science school teachers about their sexual issues and wanted to receive more sexual health information.

“Many students talk about sexual issues. Some students asked me about masturbation. They wanted to know more about their sexual issues. I am not allowed to provide students with sexual health information” (FGD, SN3).

One school nurse suggested that: “...if there is a policy regarding permissible SRHE topics to be covered in a science subject under the supervision of the MOE, then school teachers and school nurses will be able to delivery SRHE” (FGD, SN1). The school nurses implied that school
administrations do not support the teaching of school-based SRHE without the approval and supervision from the Oman MOE because they are afraid of parental opposition towards school-based SRHE. For example, one senior school nurse stated that, in her school, the school administration refused to teach students about contraceptive methods and condom use.

“School administrations are scared of parents. According to school administrations, parents may complain that we are making their children aware of sexual issues…parents are worried that this will cause students to buy condoms and engage in sexual activity”

(FGD, SN4).

6.4 Summary

This chapter presented the interview results from five female school nurses (one FGD and one IDI) in Phase one of this study. A summary table displaying the four themes and the 12 sub-themes was presented (See Table 6.2). The major themes from the school nurses’ interviews were: ‘support for school-based SRHE in Oman’, ‘designing SRHE curriculum’, ‘personal facilitators and barriers’ and ‘system facilitators and barriers…need for support’. The female school nurses that were interviewed argued that: students lack sexual health knowledge, that the current sexual health information contained in the school curriculum is superficial and related to biology only and that most adolescents receive incorrect sexual information form bad friends, the Internet, and social media. Thus, school nurses strongly recommended introducing comprehensive school-based SRHE programs that include sensitive sexual topics, such as contraception, condom use, homosexuality, and teenage pregnancy. They suggested that school-based SRHE programs should consider Islamic sexual beliefs and that they are conducted by qualified school nurses and science teachers. Furthermore, the school nurses indicated that Islam is not a barrier to providing SRHE. However, they reported some barriers such as feeling uncomfortable teaching male students, afraid from parental opposition, lack of SRHE policy and the lack of sexual health knowledge. Finally,
they recommended the need for SRHE training and support from the Oman MOE and the MOH to overcome these barriers.

Chapter 7 presents the quantitative results from Phase two, which was conducted with 250 parents.
Chapter 7: Quantitative Results

7.1 Introduction

This chapter discusses the results of Phase two that were obtained by the quantitative method using a paper-based self-administered questionnaire. In order to describe the data in meaningful terms, the data analysis process should involve some important steps such as categorising, ordering, manipulating and summarising the data (Brink, Van der Walt, & Van Rensburg, 2006; Schneider et al., 2013). Descriptive statistics and inferential statistics are considered the two main statistical approaches for analysing quantitative data. This chapter reports the descriptive statistics, including frequency, mean (average of a set of data), standard deviation and inferential statistics (Nieswiadomy, 2012; Schneider et al., 2013).

7.2 Demographic Characteristics of Phase Two Participants (Parents)

The overall response rate to the questionnaires was 95.6% (n = 125 mothers; n = 116 fathers). Around 52.3% of participants were female and 47.7% were male and had boys or girls aged 12–14. In this current study, most parents were 30–39 years of age (60.3%), followed by 40–49 (28.9%), 50 or older (5.9%) and under 30 (5%). All participating parents were of the Islamic faith, were Omani citizens and generally had high levels of education (See Table 7.1).
7.3 Results: Responses to Survey Items and Independent-Samples \( t \)-test

In this section, the frequency distributions, percentages, mean and \( SD \) of the participants’ responses to the survey items are presented. There were no missing values found in the data and the total number of responses to each item was \( N = 239 \). The responses were normally distributed and thus, the mean, \( SD \) and median were appropriate to summarise each item (Schneider et al., 2013). Reliability statistics for the survey items after modifications were calculated. The survey showed good internal consistency with a Cronbach's Alpha of 0.8.

Additionally, this section discusses the results of the independent-samples \( t \)-tests, which compared the mean and \( SD \) of the variables between fathers and mothers (independent variables) regarding their attitudes and beliefs towards school-based SRHE programs. The Shapiro-Wilk test
was used to assess the normality of the data. The dependent variables were normally distributed for each category of the independent variable (mothers and fathers) \( p > 0.05 \).

7.3.1 Parental Support towards Introduction of School-Based SRHE Programs in Oman

This section discusses section A of the survey (Items A1-A5) regarding parental support towards the introduction of school-based SRHE programs. Most parents (72.8%) supported the provision of school-based SRHE programs. However, a small number of parents (4.6%) did not support the provision of SRHE in school. Almost all parents (95.8%) agreed that SRHE should be aligned with Islam’s rules and regulations. Most parents (89.2%) indicated that the school and parents should share responsibility for providing adolescents with SRHE (See Table 7.2).

<table>
<thead>
<tr>
<th>Items</th>
<th>Parents [N]</th>
<th>Strongly Disagree 1</th>
<th>Disagree 2</th>
<th>Neutral 3</th>
<th>Agree 4</th>
<th>Strongly Agree 5</th>
<th>Means [Standard Deviation]</th>
<th>t-test</th>
<th>p value [Sig. 2-tailed]</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1. SRHE should be provided in the schools.</td>
<td>Fathers [114]</td>
<td>0.9%</td>
<td>2.6%</td>
<td>21.1%</td>
<td>52.6%</td>
<td>22.8%</td>
<td>3.94 [0.79]</td>
<td>t = 1.185 [0.23]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0.8%</td>
<td>4.8%</td>
<td>24%</td>
<td>52.8%</td>
<td>17.6%</td>
<td>3.82 [0.80]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>0.8%</td>
<td>3.8%</td>
<td>22.6%</td>
<td>52.7%</td>
<td>20.1%</td>
<td>3.87 [0.8]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2. SRHE should be linked with Islamic rules and regulations.</td>
<td>Fathers [114]</td>
<td>0%</td>
<td>0%</td>
<td>2.6%</td>
<td>33.3%</td>
<td>64%</td>
<td>4.61 [0.54]</td>
<td>t = 0.942 [0.34]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0%</td>
<td>0%</td>
<td>5.6%</td>
<td>34.4%</td>
<td>60%</td>
<td>4.54 [0.60]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>0%</td>
<td>0%</td>
<td>4.2%</td>
<td>33.9%</td>
<td>61.9%</td>
<td>4.58 [0.57]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3. The school and parents should share responsibility for</td>
<td>Fathers [114]</td>
<td>0%</td>
<td>6.1%</td>
<td>10.5%</td>
<td>36%</td>
<td>47.4%</td>
<td>4.25 [0.87]</td>
<td>t = -1.360 [0.17]</td>
<td></td>
</tr>
<tr>
<td>providing adolescents with SRHE.</td>
<td>Mothers [125]</td>
<td>0%</td>
<td>2.4%</td>
<td>3.2%</td>
<td>48%</td>
<td>46.4%</td>
<td>4.38 [0.66]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>0%</td>
<td>4.2%</td>
<td>6.7%</td>
<td>42.3%</td>
<td>46.9%</td>
<td>4.32 [0.77]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean scores vary from 1 (strongly disagree) to 5 (strongly agree).
Almost half of the parents (46.4%) indicated that SRHE should start in middle school (grades 5 to 10, with students aged 10 to 15). Regarding parents’ evaluation of the quality of SRHE their children had received in school, about one-third of parents (33.5%) indicated that their adolescents have not received any SRHE at school. More than one-third of parents (38%) rated the SRHE their adolescents had received as ‘fair’ or ‘poor’. More importantly, an independent-sample $t$-test and descriptive statistics ($M$ and $SD$) showed no significant difference between the attitudes of mothers and fathers. The p value of an independent-sample $t$-test was greater than 0.05 for all the above-mentioned results (See Table 7.2 and Table 7.3).

<table>
<thead>
<tr>
<th>Item A4</th>
<th>Parents [N]</th>
<th>Grades 1-4</th>
<th>Grades 5-10</th>
<th>Grades 11-12</th>
<th>There should be no SRHE in schools</th>
<th>Means [Standard Deviation]</th>
<th>$t$-test</th>
<th>$p$ value [Sig. 2-tailed]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>21.9%</td>
<td>47.4%</td>
<td>26.3%</td>
<td>4.4%</td>
<td>2.13 [0.80]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>19.2%</td>
<td>45.6%</td>
<td>30.4%</td>
<td>4.8%</td>
<td>2.21 [0.80]</td>
<td>$t = -0.733$</td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>20.5%</td>
<td>46.4%</td>
<td>28.5%</td>
<td>4.6%</td>
<td>2.17 [0.84]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A4. Percentage of parents reporting that SRHE that is appropriate for adolescents’ age and developmental level a. should start in .

<table>
<thead>
<tr>
<th>Item A5</th>
<th>Parents [N]</th>
<th>My adolescents have not received any SRHE</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very Good</th>
<th>Excellent</th>
<th>Means [Standard Deviation]</th>
<th>$t$-test</th>
<th>$p$ value [Sig. 2-tailed]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>35.1%</td>
<td>27.2%</td>
<td>10.5%</td>
<td>21.1%</td>
<td>5.3%</td>
<td>0%</td>
<td>0.9%</td>
<td>2.38 [1.36]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>32%</td>
<td>14.4%</td>
<td>13.6%</td>
<td>30.4%</td>
<td>8.0%</td>
<td>1.6%</td>
<td>0%</td>
<td>2.73 [1.46]</td>
<td>$t = -1.912$</td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>33.5%</td>
<td>20.5%</td>
<td>12.1%</td>
<td>25.9%</td>
<td>6.7%</td>
<td>0.8%</td>
<td>0.4%</td>
<td>2.56 [1.42]</td>
<td></td>
</tr>
</tbody>
</table>

A5. Percentage of parents reporting the quality of the SRHE that their adolescents have received in b. school .

\[a\] Mean scores vary from 1 (grades 1-4), 2 (grades 5-10), 3 (grades 11-12) to 4 (there should be no SRHE in school).

\[b\] Mean scores vary from 1 (have not received any SRHE) to 7 (excellent).
7.3.2 Parental Comfort with Different Sources of SRHE

This section discusses section A of the survey (Items A6). Parents were asked to indicate the extent to which they were comfortable with their children receiving SRHE from each of the six different sources (See Table 7.4). On average, both mothers and fathers rated four of these sources as ‘important’: parents, school nurses, school teachers, and religious leaders. In contrast, two sources: friends and social media, were rated as ‘not at all important’ or ‘somewhat important’. An independent-samples t-test showed that there was only a significant difference between the comfort of mothers ($M = 4.43$, $SD = 0.81$) and fathers ($M = 4.10$, $SD = 0.99$) towards parents as sources of SRHE ($t(237) = -2.87$, $p = 0.004$). An independent-samples t-test indicated that mothers rated parents as an extremely important source of SRHE. Regarding other sources of SRHE, descriptive statistics ($M$ and $SD$) and an independent-samples t-test showed no significant difference between mothers and fathers. The p value of an independent-samples t-test was greater than 0.05 (See Table 7.4).
<table>
<thead>
<tr>
<th>Sources</th>
<th>Parents [N]</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
<th>Means [Standard Deviation]</th>
<th>t-test</th>
<th>p value [Sig. 2-tailed]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>Fathers [114]</td>
<td>0%</td>
<td>9.6%</td>
<td>15.8%</td>
<td>29.8%</td>
<td>44.7%</td>
<td>4.10 [0.995]</td>
<td>t = -2.87 [0.004]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0%</td>
<td>3.2%</td>
<td>10.4%</td>
<td>26.4%</td>
<td>60%</td>
<td>4.43 [0.807]</td>
<td>t = -4.10 [0.002]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>0%</td>
<td>6.3%</td>
<td>13%</td>
<td>28%</td>
<td>52.7%</td>
<td>4.27 [0.915]</td>
<td>t = -3.12 [0.002]</td>
<td></td>
</tr>
<tr>
<td>School nurses</td>
<td>Fathers [114]</td>
<td>6.1%</td>
<td>13.2%</td>
<td>15.8%</td>
<td>36%</td>
<td>28.9%</td>
<td>3.68 [1.200]</td>
<td>t = -0.30 [0.760 ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>1.6%</td>
<td>8.8%</td>
<td>29.6%</td>
<td>35.2%</td>
<td>24.8%</td>
<td>3.73 [0.987]</td>
<td>t = -0.51 [0.611 ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>3.8%</td>
<td>10.9%</td>
<td>23%</td>
<td>35.6%</td>
<td>26.8%</td>
<td>3.71 [1.091]</td>
<td>t = -0.65 [0.514 ]</td>
<td></td>
</tr>
<tr>
<td>School teachers</td>
<td>Fathers [114]</td>
<td>3.5%</td>
<td>8.8%</td>
<td>16.7%</td>
<td>39.5%</td>
<td>31.6%</td>
<td>3.87 [1.069]</td>
<td>t = 0.87 [0.381 ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0.8%</td>
<td>5.6%</td>
<td>28%</td>
<td>48%</td>
<td>17.6%</td>
<td>3.76 [0.837]</td>
<td>t = -0.01 [0.997 ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>2.1%</td>
<td>7.1%</td>
<td>22.6%</td>
<td>43.9%</td>
<td>24.3%</td>
<td>3.81 [0.954]</td>
<td>t = 0.52 [0.602 ]</td>
<td></td>
</tr>
<tr>
<td>Friends/Peers</td>
<td>Fathers [114]</td>
<td>7.9%</td>
<td>33.3%</td>
<td>5.3%</td>
<td>1.8%</td>
<td>1.8%</td>
<td>1.56 [0.820]</td>
<td>t = -0.13 [0.891 ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>57.6%</td>
<td>32%</td>
<td>6.4%</td>
<td>3.2%</td>
<td>0.8%</td>
<td>1.58 [0.816]</td>
<td>t = -0.01 [0.997 ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>57.7%</td>
<td>32.6%</td>
<td>5.9%</td>
<td>2.5%</td>
<td>1.3%</td>
<td>1.57 [0.816]</td>
<td>t = 0.52 [0.602 ]</td>
<td></td>
</tr>
<tr>
<td>Religious leaders</td>
<td>Fathers [114]</td>
<td>6.1%</td>
<td>11.4%</td>
<td>28.1%</td>
<td>23.7%</td>
<td>30.7%</td>
<td>3.61 [1.208]</td>
<td>t = -1.19 [0.235]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>4.8%</td>
<td>8%</td>
<td>20%</td>
<td>37.6%</td>
<td>29.6%</td>
<td>3.79 [1.102]</td>
<td>t = -0.01 [0.997 ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>5.4%</td>
<td>9.6%</td>
<td>23.8%</td>
<td>31%</td>
<td>30.1%</td>
<td>3.71 [1.155]</td>
<td>t = -0.01 [0.997 ]</td>
<td></td>
</tr>
<tr>
<td>Media (Internet,</td>
<td>Fathers [114]</td>
<td>44.7%</td>
<td>33.3%</td>
<td>11.4%</td>
<td>4.4%</td>
<td>6.1%</td>
<td>1.94 [1.139]</td>
<td>t = -0.19 [0.846 ]</td>
<td></td>
</tr>
<tr>
<td>magazines, videos,</td>
<td>Mothers [125]</td>
<td>48%</td>
<td>26.4%</td>
<td>12%</td>
<td>8%</td>
<td>5.6%</td>
<td>1.97 [1.198]</td>
<td>t = 0.01 [0.997 ]</td>
<td></td>
</tr>
<tr>
<td>movies)</td>
<td>Total Parents [239]</td>
<td>46.4%</td>
<td>29.7%</td>
<td>11.7%</td>
<td>6.3%</td>
<td>5.9%</td>
<td>1.95 [1.168]</td>
<td>t = 0.01 [0.997 ]</td>
<td></td>
</tr>
</tbody>
</table>

Mean scores vary from 1 (not at all important) to 5 (extremely important).
7.3.3 Importance of Different SRHE Topics

This section discusses section B of the survey (Items B1-8). Parents were asked to rate the importance of including each of the eight different sexual health topics in a SRHE program (See Table 7.5). The results indicated that the majority of parents rated five topics (puberty, HIV/AIDS and other sexually transmitted diseases, abstinence, personal safety to prevent child sexual abuse and sexual decision-making skills) as ‘very important’ or ‘extremely important’ to be included in school-based SRHE programs. The mean responses to the topics of reproduction and components of reproductive systems indicated that parents viewed these two topics as ‘important’. The mean responses to the topics of birth control methods and safer sex practices indicated that most parents (70%) viewed this topic as ‘not at all important’ or ‘somewhat important’. An independent-samples t-test and descriptive statistics (M and SD) found no significant difference between the attitudes and beliefs of mothers and fathers towards the importance of the eight SRHE topics to be included in school-based SRHE programs. The p value of an independent-samples t-test was greater than 0.05 for all eight SRHE topics (See Table 7.5).
<table>
<thead>
<tr>
<th>Topics</th>
<th>Parents [N]</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
<th>Means (Standard Deviation)</th>
<th>t-test</th>
<th>p value (Sig. 2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1. Components of reproductive systems</td>
<td>Fathers [114]</td>
<td>7%</td>
<td>13.2%</td>
<td>36%</td>
<td>18.4%</td>
<td>25.4%</td>
<td>3.42 [1.204]</td>
<td>t = -0.62 [0.515]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>4%</td>
<td>12.8%</td>
<td>29.6%</td>
<td>35.2%</td>
<td>18.4%</td>
<td>3.51 [1.060]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>5.4%</td>
<td>13%</td>
<td>32.6%</td>
<td>27.2%</td>
<td>21.8%</td>
<td>3.47 [1.129]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2. Puberty</td>
<td>Fathers [114]</td>
<td>0.9%</td>
<td>3.5%</td>
<td>33.3%</td>
<td>25.4%</td>
<td>36.8%</td>
<td>3.94 [0.962]</td>
<td>t = -0.64 [0.519]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0%</td>
<td>4%</td>
<td>26.4%</td>
<td>33.6%</td>
<td>36%</td>
<td>4.02 [0.889]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>0.4%</td>
<td>3.8%</td>
<td>29.7%</td>
<td>29.7%</td>
<td>36.4%</td>
<td>3.98 [0.923]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3. Reproduction</td>
<td>Fathers [114]</td>
<td>17.5%</td>
<td>27.2%</td>
<td>28.1%</td>
<td>8.8%</td>
<td>18.4%</td>
<td>2.83 [1.336]</td>
<td>t = 0.39 [0.696]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>18.4%</td>
<td>25.6%</td>
<td>27.2%</td>
<td>18.4%</td>
<td>10.4%</td>
<td>2.77 [1.245]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>18%</td>
<td>26.4%</td>
<td>27.6%</td>
<td>13.8%</td>
<td>14.2%</td>
<td>2.8 [1.287]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B4. Birth control methods &amp; safer sex practices</td>
<td>Fathers [114]</td>
<td>38.6%</td>
<td>27.2%</td>
<td>17.5%</td>
<td>2.6%</td>
<td>14%</td>
<td>2.26 [1.370]</td>
<td>t = 1.57 [0.117]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>44.8%</td>
<td>29.6%</td>
<td>13.6%</td>
<td>4.8%</td>
<td>7.2%</td>
<td>2.0 [1.198]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>41.8%</td>
<td>28.5%</td>
<td>15.5%</td>
<td>3.8%</td>
<td>10.5%</td>
<td>2.13 [1.287]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B5. HIV/AIDS and others sexually transmitted</td>
<td>Fathers [114]</td>
<td>0%</td>
<td>2.6%</td>
<td>26.3%</td>
<td>17.5%</td>
<td>53.5%</td>
<td>4.22 [0.929]</td>
<td>t = 0.72 [0.472]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0%</td>
<td>8.8%</td>
<td>20%</td>
<td>20.8%</td>
<td>50.4%</td>
<td>4.13 [1.024]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>0%</td>
<td>5.9%</td>
<td>23%</td>
<td>19.2%</td>
<td>51.9%</td>
<td>4.17 [0.979]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6. Abstinence</td>
<td>Fathers [114]</td>
<td>6.1%</td>
<td>6.1%</td>
<td>26.3%</td>
<td>15.8%</td>
<td>45.6%</td>
<td>3.89 [1.232]</td>
<td>t = -0.45 [0.650]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>7.2%</td>
<td>8.8%</td>
<td>13.6%</td>
<td>21.6%</td>
<td>48.8%</td>
<td>3.96 [1.279]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>6.7%</td>
<td>7.5%</td>
<td>19.7%</td>
<td>18.8%</td>
<td>47.3%</td>
<td>3.92 [1.255]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7. Personal Safety (to prevent child sexual abuse)</td>
<td>Fathers [114]</td>
<td>0%</td>
<td>4.4%</td>
<td>11.4%</td>
<td>20.2%</td>
<td>64%</td>
<td>4.44 [0.863]</td>
<td>t = -1.83 [0.068]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0%</td>
<td>3.2%</td>
<td>7.2%</td>
<td>12.8%</td>
<td>76.8%</td>
<td>4.63 [0.757]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>0%</td>
<td>3.8%</td>
<td>9.2%</td>
<td>16.3%</td>
<td>70.7%</td>
<td>4.54 [0.13]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B8. Sexual Decision-making skills</td>
<td>Fathers [114]</td>
<td>4.4%</td>
<td>7.9%</td>
<td>26.3%</td>
<td>20.2%</td>
<td>41.2%</td>
<td>3.86 [1.174]</td>
<td>t = -0.83 [0.406]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>2.4%</td>
<td>11.2%</td>
<td>16.8%</td>
<td>24.8%</td>
<td>44.8%</td>
<td>3.98 [1.136]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>3.3%</td>
<td>9.6%</td>
<td>21.3%</td>
<td>22.6%</td>
<td>43.1%</td>
<td>3.92 [1.153]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean scores vary from 1 (not at all important) to 5 (extremely important).
7.3.4 Parents’ Preferences Regarding the Grade Level for Introducing Specific SRHE Topics

This section discusses section C of the survey (Items C1-13). Parents were asked to indicate the grade level at which they thought schools should start teaching each of the 13 SRHE topics (See Table 7.6). There was strong support for the inclusion of all 13 topics in the SRHE curriculum, with 80% and 99% of parents supporting the inclusion of each topic at some grade level from 1 to 12. There was an exception with the topic of birth control methods and safer sex practices, which was supported by 61% of parents to be included at a particular grade level. The mean responses of parents’ preference indicated that more than half of parents (54.8%) preferred personal safety to be introduced in grades 1 to 4 (students aged 6 to 9), with a third (33.1%) responding in favour of grades 5 to 10 (students aged 10 to 15). The mean responses for topics considered controversial in Omani culture, such as components of the reproductive systems, puberty, nocturnal emissions, menstruation, HIV/AIDS and other sexually transmitted diseases, homosexuality, masturbation and sexuality in the media suggested that parents wanted these topics introduced later, in grades 5 to 10 (students aged 10 to 15), with a percentage ranging between 47% and 90%. The mean responses for the four other topics (reproduction, birth control methods and safer sex practices, abstinence, and teenage pregnancy) showed that many parents wanted these topics to be introduced in the later grades (11 to 12; students aged 16 to 17), with percentages ranging between 49% and 68%.

An independent-samples t-test found a significant difference between mothers and fathers in their preference for introducing certain topics at certain grade levels for nocturnal emissions (t (233.2) = -2.11, p = 0.036), menstruation (t (213.1) = 2.51, p = 0.013), personal safety to prevent child sexual abuse (t (213.2) = 2.74, p = 0.007) and sexuality in the media (t (237) = -3.4, p = 0.001). Descriptive statistics indicated that mothers preferred the topics of nocturnal emissions and sexuality in the media to be introduced later (grades 11 to 12) and the topics of menstruation and
personal safety to prevent child sexual abuse to be introduced earlier (grades 1 to 4). In contrast, fathers preferred the topics of nocturnal emissions, sexuality in the media, menstruation and personal safety to prevent child sexual abuse to be introduced in grades 5 to 10. Regarding other topics, the p value of an independent-samples t-test was greater than 0.05 indicating no significant difference (See Table 7.6).
<table>
<thead>
<tr>
<th>Topics:</th>
<th>Parents [N]</th>
<th>1-4</th>
<th>5-10</th>
<th>11-12</th>
<th>This topic should not be included</th>
<th>Means [Standard Deviation]</th>
<th>t-test</th>
<th>p value [Sig. 2-tailed]</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1. Components of reproductive systems</td>
<td>Mothers [125]</td>
<td>11.2%</td>
<td>58.4%</td>
<td>26.4%</td>
<td>4%</td>
<td>2.23 [0.697]</td>
<td>t = -1.31 [0.191]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>7%</td>
<td>57%</td>
<td>29.8%</td>
<td>6.1%</td>
<td>2.35 [0.704]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>9.2%</td>
<td>57.7%</td>
<td>28%</td>
<td>5%</td>
<td>2.29 [0.71]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2. Puberty</td>
<td>Mothers [125]</td>
<td>4.8%</td>
<td>91.2%</td>
<td>3.2%</td>
<td>0.8%</td>
<td>2.00 [0.336]</td>
<td>t = 2.39 [0.057]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>0.9%</td>
<td>88.6%</td>
<td>8.8%</td>
<td>1.8%</td>
<td>2.11 [0.394]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>2.9%</td>
<td>90%</td>
<td>5.9%</td>
<td>1.3%</td>
<td>2.05 [0.368]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3. Nocturnal emissions</td>
<td>Mothers [125]</td>
<td>1.6%</td>
<td>49.6%</td>
<td>38.4%</td>
<td>10.4%</td>
<td>2.80 [0.699]</td>
<td>t = -2.11 [0.036]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>0%</td>
<td>63.2%</td>
<td>33.3%</td>
<td>3.5%</td>
<td>2.40 [0.560]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>0.8%</td>
<td>56%</td>
<td>36%</td>
<td>7.1%</td>
<td>2.49 [0.641]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4. Menstruation</td>
<td>Mothers [125]</td>
<td>3.2%</td>
<td>92%</td>
<td>3.2%</td>
<td>1.6%</td>
<td>2.03 [0.358]</td>
<td>t = 2.51 [0.013]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>1.8%</td>
<td>81.6%</td>
<td>14.9%</td>
<td>1.8%</td>
<td>2.50 [0.459]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>2.5%</td>
<td>87%</td>
<td>8.8%</td>
<td>1.7%</td>
<td>2.18 [1.352]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C5. Reproduction</td>
<td>Mothers [125]</td>
<td>0.8%</td>
<td>15.2%</td>
<td>64%</td>
<td>20%</td>
<td>3.03 [0.621]</td>
<td>t = -0.78 [0.436]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>0%</td>
<td>14.9%</td>
<td>72.8%</td>
<td>12.3%</td>
<td>2.97 [0.523]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>0.4%</td>
<td>15.1%</td>
<td>68.2%</td>
<td>16.3%</td>
<td>3 [0.576]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C6. Birth control methods &amp; safer sex practices</td>
<td>Mothers [125]</td>
<td>0%</td>
<td>7.2%</td>
<td>47.2%</td>
<td>45.6%</td>
<td>3.38 [0.619]</td>
<td>t = -1.95 [0.051]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>0%</td>
<td>9.6%</td>
<td>57.9%</td>
<td>32.5%</td>
<td>3.23 [0.610]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>0%</td>
<td>8.4%</td>
<td>52.3%</td>
<td>39.3%</td>
<td>3.31 [0.619]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C7. Abstinence</td>
<td>Mothers [125]</td>
<td>0%</td>
<td>26.4%</td>
<td>64.8%</td>
<td>8.8%</td>
<td>2.82 [0.569]</td>
<td>t = -0.55 [0.583]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>1.8%</td>
<td>28.9%</td>
<td>58.3%</td>
<td>10.5%</td>
<td>2.78 [0.648]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>0.8%</td>
<td>27.6%</td>
<td>61.9%</td>
<td>9.6%</td>
<td>2.80 [0.607]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C8. HIV/AIDS and others Sexually transmitted diseases</td>
<td>Mothers [125]</td>
<td>5.6%</td>
<td>58.4%</td>
<td>35.2%</td>
<td>0.8%</td>
<td>2.31 [0.588]</td>
<td>t = -0.30 [0.762]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>3.5%</td>
<td>65.8%</td>
<td>28.9%</td>
<td>1.8%</td>
<td>2.29 [0.560]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>4.6%</td>
<td>61.9%</td>
<td>32.2%</td>
<td>1.3%</td>
<td>2.30 [0.574]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C9. Teenage pregnancy</td>
<td>Mothers [125]</td>
<td>0%</td>
<td>30.4%</td>
<td>48%</td>
<td>21.6%</td>
<td>2.91 [0.719]</td>
<td>t = -0.56 [0.573]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>0.9%</td>
<td>30.7%</td>
<td>50%</td>
<td>18.4%</td>
<td>2.86 [0.715]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>0.4%</td>
<td>30.5%</td>
<td>49%</td>
<td>20.1%</td>
<td>2.89 [0.716]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C10. Personal safety to prevent child sexual abuse</td>
<td>Mothers [125]</td>
<td>61.6%</td>
<td>30.4%</td>
<td>8%</td>
<td>0%</td>
<td>1.46 [0.642]</td>
<td>t = 2.74 [0.007]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>47.4%</td>
<td>36%</td>
<td>13.2%</td>
<td>3.5%</td>
<td>1.73 [0.823]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>54.8%</td>
<td>33.1%</td>
<td>10.5%</td>
<td>1.7%</td>
<td>1.59 [0.744]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C11. Homosexuality</td>
<td>Mothers [125]</td>
<td>0.8%</td>
<td>46.4%</td>
<td>28.8%</td>
<td>24%</td>
<td>2.76 [0.827]</td>
<td>t = 1.25 [0.210]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>0.9%</td>
<td>50%</td>
<td>34.2%</td>
<td>14.9%</td>
<td>2.63 [0.744]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>0.8%</td>
<td>48.1%</td>
<td>31.4%</td>
<td>19.7%</td>
<td>2.7 [0.789]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C12. Masturbation</td>
<td>Mothers [125]</td>
<td>1.6%</td>
<td>49.6%</td>
<td>29.6%</td>
<td>19.2%</td>
<td>2.66 [0.803]</td>
<td>t = 2.44 [0.149]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>1.8%</td>
<td>58.8%</td>
<td>25.4%</td>
<td>14%</td>
<td>2.52 [0.755]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>1.7%</td>
<td>54%</td>
<td>27.6%</td>
<td>16.7%</td>
<td>2.59 [0.782]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C13. Sexuality in the media</td>
<td>Mothers [125]</td>
<td>7.2%</td>
<td>43.2%</td>
<td>32.8%</td>
<td>16.8%</td>
<td>2.59 [0.853]</td>
<td>t = 2.42 [0.001]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fathers [114]</td>
<td>19.3%</td>
<td>50%</td>
<td>21.1%</td>
<td>9.6%</td>
<td>2.21 [0.867]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total parents [239]</td>
<td>13.3%</td>
<td>46.4%</td>
<td>27.2%</td>
<td>13.4%</td>
<td>2.41 [0.879]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean scores vary from 1 (grades 1-4), 2 (grades 5-10), 3 (grades 11-12) to 4 (This topic should not be included).
7.3.5 Sexual and Reproductive Health Education at Home

This section discusses section D of the survey (Items D1-7). Parents were asked to indicate the quality of SRHE they had provided to their children at home and if they encouraged their children to ask them questions about sexual and reproductive health matters (See Table 7.7). The results showed that the majority of parents (77.5%) felt that the SRHE they had provided to their children at home was ‘poor’ or ‘fair’. Furthermore, only 22% of parents felt that they had done a ‘good’, ‘very good’ or ‘excellent’ job in providing SRHE to their children. When parents were asked if they had encouraged their children to ask them questions about sexual and reproductive health matters, more than two-thirds (67%) of parents indicated that they had ‘not at all’, ‘once or twice’ or ‘few times’ encouraged their children. Moreover, parents were also asked to indicate if they had adequate scientific and Islamic sexual knowledge to provide SRHE for their adolescents. Only 20% of parents ‘agreed’ or ‘strongly agreed’ that they had adequate scientific sexual knowledge. In contrast, most parents (70%) ‘agreed’ or ‘strongly agreed’ that they had adequate Islamic sexual knowledge to provide SRHE for their children. An independent-samples t-test and descriptive statistics showed no significant difference between the attitudes and beliefs of mothers and fathers towards the quality of SRHE they had provided to their children at home and their Islamic and scientific sexual information (p > 0.05). There was a significant difference between mothers ($M = 3.13$, $SD = 1.391$) and fathers ($M = 2.64$, $SD = 1.344$) in their encouragement for their adolescents to ask them questions about sexual and reproductive health matters ($t (237) = -2.750$, $p = 0.00$). Mothers were more likely to encourage their adolescents to ask them questions about sexual matters (See Table 7.7).
When parents were asked about the level of detail that they had provided their children on the eight sexual topics at home, overall parents indicated they had not discussed any of these topics in great detail (See Table 7.8). The mean suggested that parents discussed the topics of puberty, components of the reproductive systems, HIV/AIDS and other sexually transmitted diseases,
reproduction, abstinence, birth control methods and safer sex practices and sexual decision-making in ‘general terms’ or had ‘not discussed it at all’. Parents discussed only the topic of personal safety in ‘some detail’. Conversely, 48.5% of parents discussed this topic in ‘general terms’ or had ‘not discussed it at all’. An independent-samples $t$-test and descriptive statistics showed that there was only a significant difference between mothers and fathers in the level of detail that they had provided their adolescents on the topics of puberty ($t (235.0) = -6.38, p = 0.001$); components of the reproductive systems ($t (237) = -3.76, p = 0.001$); and personal safety ($t (237) = -2.62, p = 0.009$). Descriptive statistics suggested that mothers were more likely to discuss these topics with their children (See Table 7.8).
Furthermore, parents were also asked to indicate their own comfort in discussing sexual and reproductive matters with their children. About 55.3% of fathers were comfortable to discuss sexual matters with their sons only and 40% of mothers were comfortable to discuss sexual matters...
with their daughters only. An independent-samples $t$-test showed that there was a significant difference between mothers ($M = 2.58$) and fathers ($M = 1.89$) in their own comfort in having sexual and reproductive health discussions with their children ($t (164.8) = -6.62, p = 0.001$). The results suggested that mothers were more comfortable with providing SRHE for their daughters, whereas fathers were more comfortable with providing SRHE for their sons (See Table 7.9).

### Table 7.9 Responses to Survey Section D (Items D6-7): SRHE at Home

<table>
<thead>
<tr>
<th>Item D6</th>
<th>Parents [N]</th>
<th>Boys</th>
<th>Girls</th>
<th>Both Boys and Girls</th>
<th>Means [Standard Deviation]</th>
<th>$t$-test</th>
<th>$p$ value [Sig. 2-tailed]</th>
</tr>
</thead>
<tbody>
<tr>
<td>D6. Parents’ level of comfort having sexual and reproductive health discussions with boys or girls $^a$.</td>
<td>Fathers [114]</td>
<td>55.3%</td>
<td>0%</td>
<td>44.7%</td>
<td>1.89 [0.99]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>0.8%</td>
<td>40%</td>
<td>59.2%</td>
<td>2.58 [0.51]</td>
<td>$t = -6.620 [0.00]$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>26.8%</td>
<td>20.9%</td>
<td>52.3%</td>
<td>2.26 [0.85]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item D7</th>
<th>Parents [N]</th>
<th>Yes</th>
<th>No</th>
<th>Not sure</th>
<th>Means [Standard Deviation]</th>
<th>$t$-test</th>
<th>$p$ value [Sig. 2-tailed]</th>
</tr>
</thead>
<tbody>
<tr>
<td>D7. Parents’ interest to attend a SRHE workshop $^b$.</td>
<td>Fathers [114]</td>
<td>64.9%</td>
<td>12.3%</td>
<td>22.8%</td>
<td>1.58 [0.84]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mothers [125]</td>
<td>58.4%</td>
<td>12.8%</td>
<td>28.8%</td>
<td>1.70 [0.88]</td>
<td>$t = -1.115 [0.266]$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Parents [239]</td>
<td>61.5%</td>
<td>12.6%</td>
<td>25.9%</td>
<td>1.64 [0.86]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^a$ Mean scores vary from 1 (boys), 2 (girls) to 3 (both boys and girls).

$^b$ Mean scores vary from 1 (yes), 2 (no) to 3 (not sure).

Regarding parents’ willingness to attend a SRHE workshop if it was offered at their adolescents’ school, the vast majority of parents reported that they would attend. An independent-sample $t$-test and descriptive statistics showed no significant difference between mothers and fathers in their willingness to attend a SRHE workshop (See Table 7.9).
7.4 Results: The Impact of Education Level on Parental Attitudes and Beliefs towards School-Based SRHE Programs

A one-way analysis of variance (ANOVA) was used to assess the influences of education level on parental attitudes and beliefs towards school-based SRHE programs by determining whether there was any significant difference between the means of five independent groups (five education levels: less than high school; high school; diploma degree; bachelor’s degree; and postgraduate degree) (Heiberger & Neuwirth, 2009; International Business Machines Corporation [IBM], 2018). Normally distributed data is a requirement of the one-way ANOVA. However, the one-way ANOVA can tolerate data that is non-normal (skewed or kurtotic distributions) and will still provide valid results if the sample is large enough (Heiberger & Neuwirth, 2009; IBM, 2018).

The Shapiro-Wilk test was used to test the normality of the data. The dependent variables were normally distributed for each category of the independent variable (p > 0.05). In order to determine which specific groups differed from each other, a post hoc test was conducted. One of two types of the post hoc test was used (Tukey and Games-Howell tests) based on the results of homogeneity of variances.

If the assumption of homogeneity of variances has not been violated (the results of Levene’s test for homogeneity of variances showed that there was no significant difference (p > 0.05) between groups), the results of the ANOVA are used to determine if there are any significant differences between the means of the groups. However, if the results of the ANOVA show that there is a significant difference (p < 0.05) between groups, a Tukey post hoc test is conducted to determine which specific groups differ from each other (Heiberger & Neuwirth, 2009; IBM, 2018).

However, if the assumption of homogeneity of variances have been violated (the results of Levene’s test for homogeneity of variances showed that there was a significant difference (p < 0.05) between groups), the Welch test is used to determine if there are any significant differences between the means of groups instead of the ANOVA result. If the results of Welch test show there
is a significant difference between groups (p < 0.05), a Games-Howell post hoc test is conducted to determine which specific groups differ from each other (Heiberger & Neuwirth, 2009; IBM, 2018). The results of the one-way ANOVA from in this current study are discussed below.

7.4.1 The Impact of Education Level on the Parental Support towards Introduction of School-Based SRHE Programs

This section presents the analysis of the one-way ANOVA for section A of the survey (Items A1-A5). The assumption of homogeneity of variances was violated in item A2 and therefore, this item was examined based on the Welch test. The results of the ANOVA, Welch test and descriptive statistics (See Table 7.10) showed no significant difference between the group means of education level regarding: parental agreement that SRHE should be linked with Islamic rules and regulations (Item A2, p = 0.478), parental agreement that the school and parents should share responsibility for providing adolescents with SRHE (Item A3, F(4,234) = 1.115, p = 0.350) and parental attitudes towards the quality of the SRHE that their adolescents have received in school (Item A5, F(4,234) = 1.190, p = 0.316). The results of the ANOVA showed that there was a significant difference between the group means of education level on parental support for SRH to be provided in schools (Item A1, F(4,234) = 4.097, p = 0.003) and parental attitudes towards the appropriate time to start SRHE (Item A4, F(4,234) = 2.991, p = 0.020).
<table>
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<th>Items</th>
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<th>Std. Deviation</th>
<th>P value [ Sig. ]</th>
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*P value is based on Welch test
According to the Tukey post hoc test (See Table 7.11), there was a significant difference on the parental support for the provision of school-based SRHE between parents with less than a high school education and parents with a bachelor’s degree (p = 0.049); between parents with less than high school education and a postgraduate degree (p = 0.007); and between parents with diploma degree and a postgraduate degree (p = 0.029). Descriptive statistics indicated that parents with higher education levels were more supportive and agreed for the provision of school-based SRHE. Furthermore, the Tukey post hoc test showed that there was only a significant difference on parental attitudes towards the age level of starting SRHE between parents with less than high school education and a postgraduate degree (p = 0.018). Descriptive statistic indicated that parents with postgraduate degrees preferred to start SRHE in primary school, whereas parents with less than a high school education preferred to start SRHE in middle school.
Table 7.11 One-Way ANOVA (Tukey Test) of Impact of Education Level (Section A, Items A1-5): Parental Support Towards Introduction of School-Based SRHE Programs.

<table>
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<th>Dependent Variable</th>
<th>(I) Education Level</th>
<th>(J) Education Level</th>
<th>P value</th>
<th>Sig.</th>
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<td></td>
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<td>University/Undergraduate Bachelor’s degree</td>
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</table>

The mean difference is significant at the 0.05 level.
7.4.2 The Impact of Education Level on the Parental Comfort with Different Sources of SRHE

This section presents the analysis of the one-way ANOVA for section A of the survey (Item A6). This item evaluated parental comfort with six sources of SRHE: ‘parents’, ‘school nurses’, ‘school teachers’, ‘friends’, ‘religious leaders’ and ‘media’. The assumption of homogeneity of variances was violated with the source ‘school teachers’ and therefore, this source was examined based on the Welch test. The results of the ANOVA, Welch test and descriptive statistics (See Table 7.12) showed no significant differences between group means of education level on parental comfort with: parents ($F(4,234) = 1.161, p = 0.329$); school nurses ($F(4,234) = .134, p = 0.970$); school teachers ($p = 0.387$); and friends ($F(4,234) = 1.779, p = 0.134$). The results showed that there was a significant difference between group means of education level on parental comfort with religious leaders ($F(4,234) = 2.677, p = 0.033$) and the media ($F(4,234) = 3.323, p = 0.011$) as sources of SRHE.
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<th>P value [ Sig. ]</th>
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</tbody>
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*P value is based on Welch test
According to the Tukey post hoc test (See Table 7.13), there was only a significant difference on the parental comfort with religious leaders as sources of SRHE between parents with a high school education and a bachelor’s degree (p = 0.025). Descriptive statistics indicated that parents with a bachelor’s degree were comfortable with religious leaders as sources of SRHE compared to parents with a high school education. Additionally, the Tukey post hoc test showed that there was a significant difference on parental comfort with the media as a source of SRHE between parents with a bachelor’s degree and parents with less than a high school education (p = 0.008) as well as between parents with a bachelor’s degree and a high school education (p = 0.077). Descriptive statistics indicated that parents with a bachelor’s degree were comfortable with the media as a source of SRHE compared to parents with a high school education or less than a high school education.
Table 7.13 One-Way ANOVA (Tukey Test) of Impact of Education Level (Section A, Item A6): Sources of SRHE

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(I) Education Level</th>
<th>(II) Education Level</th>
<th>P value [ Sig. ]</th>
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<tr>
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<td>.926</td>
</tr>
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</tr>
<tr>
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<td>University/Postgraduate degree</td>
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<tr>
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<td>Less than high school</td>
<td>.997</td>
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<tr>
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<td>University/Postgraduate degree</td>
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<td>University/Undergraduate Diploma degree</td>
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<td>.926</td>
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<td>Media</td>
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<td>High school</td>
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<td>.945</td>
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<td>University/Postgraduate degree</td>
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<td>.997</td>
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<td>High school</td>
<td>Less than high school</td>
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<td>University/Undergraduate Bachelor’s degree</td>
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7.4.3 The Impact of Education Level on the Importance of Different SRHE Topics

This section presents the analysis of the one-way ANOVA for section B of the survey (Item B1-B8). This item evaluated parental rating on the importance of eight sexual health topics: ‘the components of reproductive systems’, ‘puberty’, ‘reproduction’, ‘birth control methods and safer sex practices’, ‘HIV/AIDS and other sexually transmitted diseases’, ‘abstinence’, ‘personal safety to prevent child sexual abuse’ and ‘sexual decision-making skills’. The assumption of homogeneity of variances was violated for two topics: ‘reproduction’ and ‘birth control methods & safer sex practices’. These two topics were examined based on the Welch test. The results of the ANOVA, Welch test and descriptive statistics (See Table 7.14) indicated no significant difference between the group means of education level on the parental ratings of the importance of the eight sexual topics (p > 0.05).
Table 7.14 One-Way ANOVA of Education Level (Section B, Items B1-8): Importance Parents Assigned to Possible Topics in the Sexual and Reproductive Health Curriculum.

<table>
<thead>
<tr>
<th>Topics: Topics:</th>
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<th>Mean</th>
<th>Std. Deviation</th>
<th>P value [ Sig. ]</th>
</tr>
</thead>
<tbody>
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<td>3.51</td>
<td>1.141</td>
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<td>University/Undergraduate Bachelor's degree</td>
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<td>University/Postgraduate degree</td>
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<td>3.62</td>
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<td>Total</td>
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<td>1.129</td>
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<td>.910</td>
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<tr>
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<td>High school</td>
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<td>.941</td>
</tr>
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<td>University/Undergraduate Diploma degree</td>
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<td>4.00</td>
<td>.922</td>
</tr>
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<td>University/Undergraduate Bachelor's degree</td>
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<td>.923</td>
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<td>1.287</td>
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<td><strong>B4. Birth control methods &amp; safer sex practices</strong></td>
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<td>University/Postgraduate degree</td>
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<td>1.481</td>
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<td>Total</td>
<td>239</td>
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<td>1.287</td>
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</table>

*P value is based on Welch test
7.4.4 The Impact of Education Level on Parents’ Preference Regarding the Grade Level for Introducing Specific SRHE Topics

This section presents the analysis of the one-way ANOVA for section C of the survey (Items C1-C13). These items evaluated parents’ preferences regarding the grade level to start teaching the 13 SRHE topics. The assumption of homogeneity of variances was violated for three topics: ‘nocturnal emissions’, ‘menstruation’ and ‘personal safety to prevent child sexual abuse’. Hence, these topics were examined based on the Welch test. The results of the ANOVA, Welch test and descriptive statistics (See Table 7.15) showed that there was only a significant difference between the group means of education level on the parents’ preferences to start teaching the topics of HIV/AIDS and other sexually transmitted diseases ($F(4,234) = 2.520, p = 0.042$) and personal safety to prevent child sexual abuse ($p = 0.007$).
Table 7.15 One-Way ANOVA of Impact of Education Level (Section C, Items C1-13): Grade Level at which Parents Thought Specific Topics Should be Introduced in School Curriculum

<table>
<thead>
<tr>
<th>Topics</th>
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<th>Std. Deviation</th>
<th>P value [ Sig. ]</th>
</tr>
</thead>
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According to the Tukey post hoc test (See Table 7.16), there was only a significant difference on parents’ preferences to start teaching the topics of HIV/AIDS and other sexually transmitted diseases between parents with less than a high school education and parents with a post-graduate degree (p = 0.048). The descriptive statistics indicated that parents with post-
graduate degrees preferred to start this topic in middle school, whereas parents with less than a high school education preferred to start this topic in high school. Additionally, the Games-Howell post hoc test (See Table 7.16) showed that there was a significant difference in parents’ preferences to start teaching the topic of personal safety to prevent child sexual abuse between parents with less than a high school education and parents with a post-graduate degree (p = 0.030) and between parents with diploma degrees and parents with post-graduate degrees (p = 0.044). The descriptive statistics indicated that parents with post-graduate degrees preferred to start this topic in primary school, whereas parents with less than a high school education and diploma degree preferred to start this topic in middle school.
Table 7.16 One-Way ANOVA of Impact of Education Level (Section C, Items C1-13): Grade Level at which Parents Thought Specific Topics Should be Introduced in school curriculum

**Tukey Test**

<table>
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<th>Dependent Variable</th>
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<th>(J) Education Level</th>
<th>P value [ Sig.</th>
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<td></td>
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<td>High school</td>
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**Games-Howell Test**

Dependent Variable: C10. Personal safety to prevent child sexual abuse

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</tr>
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<td>University/Undergraduate Bachelor's degree</td>
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<td>University/Postgraduate degree</td>
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</tr>
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<tr>
<td>High school</td>
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<td>.925</td>
</tr>
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<td>University/Postgraduate degree</td>
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<tr>
<td>High school</td>
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<td>University/Postgraduate degree</td>
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283
7.4.5 The Impact of Education Level on the Sexual Health Education at Home

This section presents the analysis of the one-way ANOVA for section D of the survey (Items D1-D7) regarding parental attitudes and beliefs towards the provision of SRHE at home. The results of the ANOVA and descriptive statistics (See Table 7.17) showed no significant difference (p > 0.05) between the group means of education level on: the quality of SRHE parents provided to their adolescents at home (Item D1); parents’ encouragement for their adolescents to ask them sexual questions (Item D2); and parents’ Islamic and scientific knowledge regarding sexual matters (Items D3-4).

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<th>N</th>
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<th>Std. Deviation</th>
<th>P value</th>
<th>Sig.</th>
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<td>1.013</td>
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<tr>
<td>D2. I have encouraged my adolescents to ask me questions about sexual and reproductive health matters.</td>
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<td>1.505</td>
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Item D5 examined the level of detail that parents had provided their children on eight sexual and reproductive health topics at home. The assumption of homogeneity of variances was violated with the topic of ‘reproduction’. This topic was examined based on the Welch test. The results of the ANOVA and descriptive statistics showed no significant difference (p > 0.05) between the group means of education level on the level of detail that parents had provided their children on the eight topics (See Table 7.18).
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*P value is based on Welch test
Items D6-7 examined parental comfort in providing SRHE to their sons or daughters and parental interest in attending SRHE workshops. The assumption of homogeneity of variances was violated (p < 0.05) for these two items and hence, significant differences among the group means were examined based on the Welch test. The results of the Welch test and descriptive statistics (See Table 7.19) showed no significant difference in these results (p > 0.05).

| Table 7.19 One-Way ANOVA of Impact of Education Level (Section D, Items D6-7): SRHE at Home |
|-----------------------------------------------|-----------------|---------|---------|---------|
| D6. Parents are comfortable to provide SRHE to (boys or girls). | N | Mean | Std. Deviation | P value [ Sig. ] |
| Less than high school | 45 | 2.33 | .826 | |
| High school | 85 | 2.18 | .928 | |
| University/Undergraduate Diploma degree | 41 | 2.05 | .835 | 0.168* |
| University/Undergraduate Bachelor’s degree | 55 | 2.42 | .762 | |
| University/Postgraduate degree | 13 | 2.46 | .776 | |
| Total | 239 | 2.26 | .854 | |
| D7. Interested to attend a SRHE workshop for parents. | N | Mean | Std. Deviation | P value [ Sig. ] |
| Less than high school | 45 | 1.89 | .935 | |
| High school | 85 | 1.75 | .898 | |
| University/Undergraduate Diploma degree | 41 | 1.41 | .774 | 0.055* |
| University/Undergraduate Bachelor’s degree | 55 | 1.51 | .791 | |
| University/Postgraduate degree | 13 | 1.38 | .768 | |
| Total | 239 | 1.64 | .867 | |

*P value is based on Welch test
7.5 Results: The Impact of Age on Parental Attitudes and Beliefs towards School-Based SRHE Programs

The one-way ANOVA was used to assess the influence of age on parental attitudes and beliefs towards school-based SRHE programs by determining whether there were any significant differences between the means of the four independent groups (under 30 years; 30-39 years; 40-49 years; and 50+ years). In addition, in order to determine which specific groups differed from each other, a post hoc test was conducted. The dependent variables were normally distributed for each category of the independent variable (p value of the Shapiro-Wilk test > 0.05).

7.5.1 The Impact of Age on the Parental Support towards School-Based SRHE Programs

This section presents the analysis of the one-way ANOVA for section A of the survey (Items A1-A5) regarding parental support towards SRHE. The results of the ANOVA and descriptive statistics (See Table 7.20) showed no significant difference (p > 0.05) between the group means of age on parental agreement that: SRHE should be provided in schools (Item A1), that SRHE should be linked with Islamic rules and regulations (Item A2) and on parental attitudes towards the quality of SRHE that adolescents have received in school (Item A5). The results of the ANOVA showed that there were significant differences between the group means of age on parental agreement about sharing the responsibility of school-based SRHE between parents and schools (Item A3, p = 0.012) and the age to start SRHE (Item A4, p = 0.019).
According to the Tukey post hoc test (See Table 7.21), there was only a significant difference on parental agreement about sharing the responsibility of SRHE between parents aged 30-39 and parents aged 40-49 (p = 0.016). The descriptive statistics indicated that parents aged 30-39 were more supportive of sharing the responsibility of school-based SRHE with the school. The Tukey post hoc test also showed that there was only a significant difference in parental attitudes towards the age to start SRHE between parents aged 30-39 and parents aged above 50 (p = 0.043).
The descriptive statistic showed that parents aged 30-39 preferred that SRHE should be started in primary school, whereas parents aged above 50 preferred that SRHE should be started in high school.

| Table 7.21 One-Way ANOVA (Tukey Test) of Impact of Age (Section A, Items A1-5): Parental Support Towards Introduction of School-Based SRHE Programs. |
|---|---|---|
| Dependent Variable | (I) Participants' age | (J) Participants' age | P value [ Sig. ] |
| A3. The school and parents should share responsibility for providing adolescents with SRHE. | Under 30 | 30-39 | .602 |
| | | 40-49 | .997 |
| | | above 50 | .989 |
| | 30-39 | Under 30 | .602 |
| | | 40-49 | .016 |
| | | above 50 | .288 |
| | 40-49 | Under 30 | .997 |
| | | 30-39 | .016 |
| | | above 50 | .997 |
| | above 50 | Under 30 | .989 |
| | | 30-39 | .288 |
| | | 40-49 | .997 |
| A4. SRHE that is appropriate for adolescents’ age and developmental level should start in: | Under 30 | 30-39 | .847 |
| | | 40-49 | .996 |
| | | above 50 | .589 |
| | 30-39 | Under 30 | .847 |
| | | 40-49 | .142 |
| | | above 50 | .043 |
| | 40-49 | Under 30 | .996 |
| | | 30-39 | .142 |
| | | above 50 | .465 |
| | above 50 | Under 30 | .589 |
| | | 30-39 | .043 |
| | | 40-49 | .465 |
7.5.2 The Impact of Age on the Parental Comfort with Different Sources of SRHE

This section presents the analysis of the one-way ANOVA regarding parental comfort with the six sources of sexual information (Item A6). The results of the ANOVA, Welch test and descriptive statistics showed no significant difference (p > 0.05) between the group means of age on parental comfort with the six sources: ‘parents’, ‘school nurses’, ‘school teachers’, ‘friends’, ‘religious leaders’ and ‘the media’ (See Table 7.22).

<table>
<thead>
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<th>Sources</th>
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<th>Std. Deviation</th>
<th>P value [ Sig. ]</th>
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<td>.778</td>
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<td>4.35</td>
<td>.796</td>
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<td>1.098</td>
<td>0.436*</td>
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<td>1.61</td>
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*P value is based on Welch test
7.5.3 The Impact of Age on the Importance of Different SRHE Topics

This section presents the analysis of the one-way ANOVA for section B of the survey (Item B1-B8) regarding parental preferences of eight SRHE topics. The results of the ANOVA, Welch test and descriptive statistics (See Table 7.23) showed no significant difference between the group means of age on parental preferences of six SRHE topics (p > 0.05): ‘the components of reproductive systems’; ‘reproduction’; ‘birth control methods and safer sex practices’; ‘abstinence’; ‘personal safety’; and ‘sexual decision-making skills’. The results showed that there was a significant difference between the group means of age on parental preferences regarding the topics of ‘puberty’ (p = 0.038) and ‘HIV/AIDS and other sexually transmitted diseases’ (p = 0.019).
Table 7.23 One-Way ANOVA of Impact of Age (Section B, Items B1-8): Importance Parents Assigned to Possible Topics in the Sexual and Reproductive Health Curriculum.

<table>
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*P value is based on Welch test
According to the Tukey post hoc test (See Table 7.24), there was a significant difference on parental preference regarding the topic of puberty: between parents aged under 30 and parents aged 30-39 (p = 0.024); and between parents aged under 30 and parents aged 40-49 (p = 0.039). The descriptive statistics showed that parents aged 30-49—compared to parents aged under 30—rated the topic of puberty as very important and should be included in the SRHE curriculum. Additionally, a Tukey post hoc test showed that there was a significant difference in parental preference regarding the topic of HIV and STIs: between parents aged under 30 and parents aged 30-39 (p = 0.020); between parents aged under 30 and parents aged 40-49 (p = 0.012); and between parents aged under 30 and parents aged above 50 (p = 0.037). The descriptive statistics showed that parents above 30—compared to parents aged under 30—rated the topic of HIV and STIs as very important and should be included in the SRHE curriculum.

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7.5.4 The Impact of Age on Parents’ Preference Regarding the Grade Level for Introducing Specific SRHE Topics

This section presents the analysis of the one-way ANOVA of section C for the survey (Items C1-C13) in relation to parents’ preference regarding the grade level for introducing the 13 SRHE topics. The results of the ANOVA, Welch test and descriptive statistics (See Table 7.25) showed that there was a significant difference between the group means of age on the parents’ preferences regarding two topics: ‘personal safety to prevent child sexual abuse’ ($F(3,235) = 4.995$, $p = 0.002$); and ‘masturbation’ ($F(3,235) = 3.600$, $p = 0.014$). According to the Tukey post hoc test (See Table 7.26), there was a significant difference between the parents’ preference to the topic of personal safety to prevent child sexual abuse: between parents aged above 50 and parents aged under 30 ($p = 0.014$); between parents aged above 50 and parents aged 30-39 ($p = 0.001$); and between parents aged above 50 and parents aged 40-49 ($p = 0.011$). The descriptive statistics indicated that parents aged above 50 preferred to introduce this topic in middle school, whereas parents aged under 50 preferred to introduce this topic in primary school. Regarding the topic of masturbation, the Tukey post hoc test showed that there was only a significant difference between parents aged 30-39 and parents aged above 50 ($p = 0.015$). The descriptive statistics indicated that parents aged 30-39 preferred to introduce this topic in middle school, whereas parents aged above 50 preferred to introduce this topic in high school.
Table 7.25 One-Way ANOVA of Impact of Age (Section C, Items C1-13): Grade Level at which Parents Thought Specific Topics Should be Introduced in School Curriculum

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<th>Std. Deviation</th>
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*P value is based on Welch test
The Impact of Age on the Sexual Health Education at Home

This section presents the analysis of the one-way ANOVA for section D of the survey (Items D1-D7) regarding SRHE at home. The results of ANOVA and descriptive statistics (See Table 7.27) showed no significant difference ($p > 0.05$) between the group means of age regarding parents’ encouragement for their children to ask them sexual questions (Item D2) and parental agreement of having adequate Islamic and scientific sexual knowledge (Items D3-4). There was a significant difference between the group means of age regarding the quality of SRHE that parents provided their adolescents (Item D1, $p = 0.017$).

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According to the Games-Howell post hoc test (See Table 7.28), there was only a significant difference in the quality of SRHE parents that provided their adolescents between parents aged under 30 and parents aged 30-39 ($p = 0.038$). The descriptive statistics showed that parents aged 30-39 provided better quality SRHE to their adolescents than parents under 30.

<table>
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*P value is based on Welch test
Moreover, the results of the ANOVA, Welch test and descriptive statistics (See Table 7.29) showed that there was only a significant difference ($p < 0.05$) on the level of detail that parents had provided their children at home regarding the topics of ‘reproduction’ and ‘puberty’. The Games-Howell post hoc test and descriptive statistics revealed that parents aged 30-39—compared to parents aged above 50—provided more detail to their adolescents regarding the topic of puberty. The Games-Howell post hoc test and descriptive statistics also indicated that parents aged 40-49—compared to parents aged under 30—provided a greater level of detail to their adolescents about reproduction (See Tables 7.29 and Table 7.30).
<table>
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*P value is based on Welch test*
Regarding Items D6-7, the results of the ANOVA and the descriptive statistics (See Table 7.31) showed no significant difference between the group means of age on parental comfort towards the provision of SRHE to their sons or daughters (p = 0.221) and parental interest in attending SRHE workshops (p = 0.296).

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<th>(J) Participants' age</th>
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<td></td>
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<td>.998</td>
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</table>
This chapter presented the quantitative results of Phase two of this study. Almost all the parents supported a comprehensive age-appropriate SRHE program being taught to students aged 10 to 15 (grades 5-10) including topics perceived as controversial in Omani culture (except for the topics of birth control and safer sex which were supported by 61% of the parents). However, parents strongly recommended that contents of the SRHE curriculum be aligned with Islamic beliefs and they supported shared responsibility with schools in delivering SRHE to their male and female adolescents. Furthermore, the majority of parents reported that their adolescents had not received good SRHE in school. Parents also reported that they did not have adequate scientific sexual health information to educate their adolescents at home and would like to attend SRHE training sessions at their adolescents’ schools. The results of the independent-samples t-tests showed that mothers were more comfortable with providing SRHE to their daughters, whereas fathers were more comfortable with providing SRHE to their sons. Additionally, the results of the

### Table 7.31 One-Way ANOVA of Impact of Age (Section D, Items D6-7): SRHE at Home

<table>
<thead>
<tr>
<th>D6. Parents are comfortable to provide SRHE to (boys or girls).</th>
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<table>
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<th>D7. Interested to attend a SRHE workshop for parents.</th>
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<th>Std. Deviation</th>
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</table>

### 7.6 Summary

This chapter presented the quantitative results of Phase two of this study. Almost all the parents supported a comprehensive age-appropriate SRHE program being taught to students aged 10 to 15 (grades 5-10) including topics perceived as controversial in Omani culture (except for the topics of birth control and safer sex which were supported by 61% of the parents). However, parents strongly recommended that contents of the SRHE curriculum be aligned with Islamic beliefs and they supported shared responsibility with schools in delivering SRHE to their male and female adolescents. Furthermore, the majority of parents reported that their adolescents had not received good SRHE in school. Parents also reported that they did not have adequate scientific sexual health information to educate their adolescents at home and would like to attend SRHE training sessions at their adolescents’ schools. The results of the independent-samples t-tests showed that mothers were more comfortable with providing SRHE to their daughters, whereas fathers were more comfortable with providing SRHE to their sons. Additionally, the results of the
ANOVA showed that young parents and parents with higher education levels were more supportive for comprehensive school-based SRHE programs to be introduced in primary schools than older parents and parents with less education. The study’s findings suggest that the evidence of strong parental support for SRHE programs can facilitate education policy, SRHE curriculum decision-makers and school healthcare-providers in Oman, other Middle Eastern countries and even countries with Muslim immigrant populations.
Chapter 8: Discussion

8.1 Introduction

This chapter presents a discussion of the key findings from the triangulation of the major themes generated from the three data sources (parents, school teachers and school nurses). These themes were also compared with the quantitative data. This process contributes to a philosophical understanding of the attitudes and beliefs of parents, school teachers, and school nurses towards implementing school-based SRHE programs in Oman. The key qualitative and quantitative results that informed the research questions (supported by comparative and contrasting literature both regionally and internationally) are summarised. In addition, significant differences in the participants’ attitudes towards school-based SRHE programs based on their gender, education level and age are discussed. In Phase one of this current study (qualitative), age and education level were not associated with any significant differences in the participants’ attitudes and beliefs as participants had similar age groups and education levels. The key findings that will be discussed are: support for school-based SRHE in Oman, designing SRHE curriculum and school-based SRHE programs’ facilitators and barriers. In addition, a critique of the theoretical framework within the context of this study is presented. Lastly, the limitations of this study are examined.

8.2 Support for School-Based SRHE in Oman

This section discusses the support and benefits for the introduction of school-based SRHE programs in Oman from the perspectives of parents, school teachers, and school nurses.

This current study is the first of its kind to have examined the attitudes and beliefs of parents, school teachers, and school nurses towards a school-based SRHE program in Oman (Oman MOH & WHO, 2018). In Phase two, the participant response rate of 95.6% was comparable with data reported in previous Middle Eastern SRHE studies, which reported response rates of 90
to 98% (Jaffer et al., 2006; Oman MOH & WHO, 2015, 2012; Alquaiz et al., 2012; Gańczak et al., 2007). Both the qualitative and quantitative findings showed strong support from parents, school teachers, and school nurses for introducing school-based SRHE programs in Oman. This result is consistent with previous studies conducted among parents, school teachers, and school nurses from other Middle Eastern countries, especially Iran (Ganji, Emamian, Maasoumi, Keramat, & Merghati-Khoei, 2018; Khadijeh et al., 2015; Merghati-Khoei et al., 2014; Mosavi et al., 2014), Egypt (Farrag & Hayter, 2014) and non-Middle Eastern countries such as Canada (Cohen et al., 2012; McKay et al., 2014; Weaver et al., 2002), USA (Barr et al., 2014; Eisenberg et al., 2013; Howard-Barr et al., 2011; Lagus et al., 2011), the UK (Turnbull et al., 2008; Westwood & Mullan, 2006, 2007), Australia (Department of Health, Western Australia, 2010; Duffy et al., 2013; Johnson et al., 2014), Tanzania (Mkumbo & Ingham 2010), Austria (Depauli & Plaute, 2018), Netherlands (Schutte et al., 2014), Thailand (Thammaraksa et al., 2014) and India (Nair et al., 2012; O’Sullivan et al., 2018). In Phase two, the quantitative results showed that there was a significant difference between the attitudes of parents with higher and lower education levels towards the importance of SRHE in school. The results indicated that parents with higher education levels were more supportive of introducing SRHE in schools. These results are consistent with previous SRHE studies conducted among parents in India (O’Sullivan et al., 2018) and Austria (Depauli & Plaute, 2018). This may be because parents with higher education levels are more aware of risky adolescent sexual behaviours, such as engaging in unprotected sex and acquiring STIs and HIVs. Thus, they are more aware of the benefits of school-based SRHE for adolescents.

This level of parental support contrasts with the fear reported among school teachers, school nurses and counsellors towards the delivery of SRHE in schools due to parental and community opposition (Cohen et al., 2012; Duffy et al., 2013; Eisenberg et al., 2013; Farrag & Hayter, 2014; Sinai & Shehade, 2018). Therefore, gaining parental support towards school-based
SRHE programs is considered an effective approach for the development and implementation of school-based SRHE (Department of Health, Western Australia, 2008; McKay et al., 2014; UNESCO, 2018). The findings of this study can help both the Oman MOE and Oman MOH to boost support for implementing school-based SRHE programs resulting in improvements in adolescents’ sexual and reproductive health.

8.2.1 Benefits of School-Based SRHE Programs for Adolescents

8.2.1.1 Improve Adolescent Sexual and Reproductive Health Knowledge

In Phase one, parents, school teachers, and school nurses that were interviewed believed that the provision of school-based SRHE programs would improve adolescent sexual and reproductive health knowledge and promote adolescent health and well-being. Therefore, school-based SRHE programs have been established in many secondary schools internationally as it is considered an essential step to improving and maintaining the sexual health of young people (ARCSHS, 2017; Barr et al., 2014; UNESCO, 2018). Strong evidence indicates that school-based SRHE programs, which provide adolescents with scientific sexual health information, generally do not encourage early sexual activity and are significantly associated with delayed first intercourse, consistent contraceptive use and safe sexual practices (Demissie, Clayton, & Dunville, 2018; WHO Europe, 2010; UNESCO, 2018). They are also associated with the prevention of HIV, STIs, sexual abuse and coercion and unintended pregnancy (Chin et al., 2012; Kirby et al., 2011; UNESCO, 2009, 2018; WHO Europe, 2010). Thus, SRHE programs can result in improved quality of life for adolescents.

Most parents, school teachers, and school nurses that were interviewed in Phase one, (and parents surveyed in Phase two) were not happy with contents and quality of the current SRHE curriculum in Oman because it is superficial and only related to human biology. These results are consistent with studies conducted in other Middle Eastern countries including Oman (Oman MOH
& WHO, 2015) Iran (Mosavi et al., 2014; Yazdi et al., 2006), the KSA (Alquaiz et al., 2012), UAE (UAE MOH & WHO, 2010) and Lebanon (Mouhanna et al., 2017). For example, in Oman, to date, there are no comprehensive SRHE programs or services designed to meet the sexual and reproductive health needs that address the sexual health risks of adolescents (Jaffer et al., 2006; Oman MOH, 2010; Oman MOH & WHO, 2015, 2018). The current school curriculum only covers the biological and anatomical aspects of reproduction (Oman MOE, 2018; Oman MOH, 2010). In Oman, several school representative surveys showed that Omani adolescents did not receive adequate SRHE at school and the majority of them had poor knowledge of puberty’s physiological changes, HIV, STIs and teenage pregnancy (Jaffer et al., 2006; Oman MOH, 2010; Oman MOH & WHO, 2005, 2012, 2015).

The qualitative data also showed that many parents, school teachers, and school nurses agreed to introduce adolescent school-based SRHE programs in Oman because they believed that many Omani male and female adolescents engaged in premarital sexual activity during puberty and were at a higher risk to acquire HIV and STIs due to lack of knowledge related to safe sexual practice. Internationally, sexual activity among adolescents has been well documented worldwide (CDC, 2017a; Mitchell, 2014; WHO, 2018b). The culture and religion of Muslims prohibit premarital sexual activity (Orgocka, 2004; Smerecnik et al., 2010; Tabatabaie, 2015a). However, a high prevalence of premarital sexual activity has been reported among adolescents in Middle Eastern countries. The assumption that Islamic adolescents in Middle Eastern countries are non-sexually active is incorrect and has contributed to the failure to meet the SRHE needs of young people (Farahani et al., 2011; Mohtasham et al., 2009; Mouhanna et al., 2017; Tabatabaie, 2015a; Vakilian et al., 2014).

In contrast, some parents, school teachers, and school nurses reported that they were worried about the negative outcomes of teaching SRHE, such as adolescents being made aware of
sexual matters and motivating them to engage in premarital sexual activity. This explains why some parents in Phase two indicated that they disagreed with the introduction of school-based SRHE programs. Studies conducted in Middle Eastern countries—including Iran and Egypt—showed some parents, school teachers, and school nurses believed that children were not ready to know about SRHE and assumed that early introduction of SRHE can lead to sexual misbehaviour and early sexual initiation (Farrag & Hayter, 2014; Merghati-Khoei et al., 2014; Mosavi et al., 2014; Latifnejad-Roudsari et al., 2013). This social concern regarding the negative effects of early introduction of school-based SRHE programs is one of the barriers, which inhibits implementing these programs in Middle Eastern countries and causes parents, school teachers, and school nurses to avoid sexual communication with adolescents (Farrag & Hayter, 2014; Merghati-Khoei et al., 2014; Mouhanna et al., 2017). This concern was also reported by parents, school teachers, and school nurses in non-Middle Eastern countries including the UK (Westwood & Mullan, 2006), Thailand (Sridawruang et al., 2010), Ireland (Hyde et al., 2013) and Tanzania (Wamoyi et al., 2010). Therefore, before implementing school-based SRHE programs, it is essential that the Oman MOE, the Oman MOH, policy-makers and law-makers should raise the awareness of parents, school teachers, and school nurses about the significant role of SRHE in improving adolescent scientific sexual and reproductive health knowledge and that it does not lead to an increase in sexual experimentation (UNESCO, 2018).

8.2.1.2 Prevent Child Sexual Abuse

Child sexual abuse is a global and serious public health issue that is associated with physical injury as well as emotional and psychological problems (CDC, 2017c; WHO, 2017b). Evidence has shown that school-based SRHE programs are significantly associated with the prevention of child sexual abuse (Chin et al., 2012; CDC, 2017c; Kirby et al., 2011; UNESCO, 2018; WHO, 2017b). In this current study, the qualitative data indicated that parents, school
teachers, and school nurses agreed to implement school-based SRHE programs because they believed that these programs would be beneficial in educating primary school students about how to protect themselves from sexual abuse inside and outside the school. Similarly, in Phase two, most parents rated the topic of personal safety to prevent child sexual abuse as very important. They also suggested for it to be included in school-based SRHE programs and wanted it to be introduced in primary school. These attitudes were similarly reported by parents and school teachers in Canada (Cohen et al., 2012; Mckay et al., 2014; Weaver et al., 2002) and Australia (Rudolph & Zimmer-Gembeck, 2018; Walsh & Brandon, 2012). Participants indicated this issue maybe because they were aware of the physiological and psychological effects of child sexual abuse or maybe they felt that child sexual abuse occurs frequently in Oman and wanted the Oman MOE to solve this issue.

According to WHO (2017b, p. 15) guidelines, children can be sexually abused by “an adult or another child who by age or stage of development is in a relationship of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other person”. In this current study, many parents, school teachers, and school nurses that were interviewed argued that younger students are at risk of being sexually abused inside the school by older students, school cleaners or bus drivers, and outside the school by an adult or older adolescent from relatives or neighbours. However, studies indicate that sexually abused children are afraid and hesitant to tell anyone that they were sexually abused because they are often worried that they will not be believed and are afraid of what their abuser may do if they tell (CDC, 2017c). Evidence (including systematic reviews and meta-analyses) strongly recommend that SRHE about personal safety to prevent child sexual abuse should be covered in the school curriculum in order to prevent child sexual abuse and encourage children to tell if they are sexually abused (CDC, 2017c; Walsh et al., 2018; WHO, 2017b). The findings of this current study strongly recommended that the issue of child sexual
abuse should be taken into consideration by school policy-makers from the Oman MOE and Oman MOH when implementing school-based SRHE programs. For example, they should consider the provision of basic information in primary school curriculums about personal safety to prevent child sexual abuse. Furthermore, the information should encourage parents to educate their children at home and encourage children to report cases of child sexual abuse.

8.2.1.3 Adolescents’ Sources of Sexual and Reproductive Health Information

In Phase one, most parents, school teachers, and school nurses indicated that Omani adolescents receive most of their sexual and reproductive information from inappropriate sources, such as friends, the Internet, and social media, which provide them with incorrect and inappropriate sexual information. This explains why most parents in Phase two rated friends and social media as not good sources of SRHE. In the last 40 years, Oman has undergone rapid development and modernisation, resulting in many adolescents being exposed to social media and advanced communication technology (Oman NCSI, 2018). Adolescents in studies across the Middle East, for example, in Oman (Jaffer et al., 2006; Oman MOH & WHO, 2012), Iran (Mosavi et al., 2014), the KSA (Alquaiz et al., 2012), and UAE (Gańczak et al., 2007; UAE MOH & WHO, 2012), reported that they received most of their sexual and reproductive health information from their friends, social media, and the Internet. The problem is that adolescents are vulnerable to receiving incorrect or misleading information regarding SRHE from these sources and engaging in unprotected premarital sexual activity, resulting in inadequate preparation for their sexual lives (Brown et al., 2007; Mosavi et al., 2014; Tabatabaie 2015a; UNESCO, 2018). For example, according to the UNESCO international technical guidance on sexuality education, the Internet and social media do not provide age-appropriate and evidence-based sexual health information, do not offer the space for adolescents to discuss, reflect and debate their sexual issues, and to acquire the relevant skills (UNESCO, 2018).
In the Middle East, parents rarely talk to their children regarding sexual matters and schools rarely provide sufficient sexual health information (Farrag & Hayter, 2014; Gańczak et al., 2007; Ganji et al., 2018; Merghati-Khoei et al., 2014; Mouhanna et al., 2017; Oman MOH & WHO, 2018; Sinai & Shehade, 2018) despite schools globally being recommended to do so by the UNESCO guidance on the provision of comprehensive SRHE (UNESCO, 2018). Thus, the importance of school-based SRHE for Middle East adolescents is highlighted (Farrag & Hayter, 2014; Mouhanna et al., 2017; Oman MOH & WHO, 2018) and the Oman MOE, the Oman MOH, policy-makers and law-makers should make clear strategic plans to implement school-based SRHE programs in Omani schools.

Several organisations such as the UNESCO and the UNFPA recommend that comprehensive SRHE should be introduced in the schools to coincide with critical periods of adolescent development and provide them with age-appropriate sexual health information (Kirby et al., 2011; UNESCO, 2018; UNFPA, 2014). Adolescence is a time of curiosity and acquiring knowledge and skills. During this period, adolescents learn how to deal with their sexual feelings and to make sexual health related decisions as well as learning how to avoid sexual health risks. Thus, they should receive scientific sexual health information from appropriate sources, such as through school-based SRHE programs (Kirby et al., 2011; UNESCO, 2018; UNFPA, 2014). A school-based SRHE program can offer a forum for adolescents to understand and make sense of the images, practices, norms and sexual scripts that they observe via the Internet and social media. It can also support children and adolescents to safely navigate the Internet and social media and can assist them to identify accurate and evidence-based sexual health information (UNESCO, 2018).
8.3 Designing the SRHE Curriculum

This section examines the attitudes and beliefs of parents, school teachers, and school nurses in terms of design and the approaches they preferred for implementing school-based SRHE programs in Oman.

Studies show that exploring the views of parents, school teachers, and school nurses towards preferred approaches for teaching school-based SRHE programs for a particular culture before implementation (such as age to start teaching SRHE, topics and contents of SRHE curriculum and educators who should teach SRHE) is an important step for the success of these programs (Barr et al., 2014; Borawski et al., 2015; Kirby et al., 2011; Department of Health, Western Australia, 2008; McKay et al., 2014; Mosavi et al., 2014; Westwood & Mullan, 2009; UNESCO, 2018). In Middle Eastern countries including Oman, school-based SRHE programs are culturally and socially sensitive programs and there are many challenges and barriers related to the design and structure of these programs, which need to be cautiously considered before implementation to avoid rejection of these programs (DeJong et al., 2005; Farrag & Hayter, 2014; Jaffer et al., 2006; Merghati-Khoei et al., 2014; Roudi-Fahimi & El Feki, 2011; Tabatabaie, 2015a). The following sections discuss some of the participants’ preferences related to the design of school-based SRHE programs, which need to be considered by the Oman MOE, the Oman MOH, policy-makers and law-makers.

8.3.1 Aligning SRHE Programs with Islamic Beliefs

Across the Middle East, school-based SRHE programs are often considered as part of Western social mores and perceived as incompatible with Islamic values and norms that do not condone premarital sexual activity (DeJong et al., 2005; Farrag & Hayter, 2014; Merghati-Khoei et al., 2014; Tabatabaie, 2015a). Of note in Phase one and Phase two of this study is that the majority of Omani parents, school teachers, and school nurses from the Saham district wanted...
SRHE to comply with Islamic rules and regulations, and this was true regardless of their gender, education level or age. They indicated that sexual topics of school-based SRHE curriculum should cover both scientific information and Islamic beliefs. This attitude could be explained because participants may have had strong Islamic beliefs. For example, according to Islamic regulations, premarital sexual activity is prohibited (Tabatabaie, 2015b) and hence, school-based SRHE should educate Muslim adolescents about sexual abstinence until marriage. This explains why a high proportion of parents that were surveyed in Phase two, agreed that sexual abstinence is an important topic to be included in school-based SRHE. This finding is consistent with past Iranian and Egyptian studies showing that the conflict between SRHE and Islamic beliefs, norms and values can inhibit the introduction of SRHE in schools (DeJong et al., 2005; Farrag & Hayter, 2014; Latifnejad-Roudsari et al., 2013; Merghati-Khoei et al., 2014; Sinai & Shehade, 2018; Tabatabaie, 2015a, 2015b).

Parental support for school-based SRHE programs that do not subvert Islamic values clearly indicates that discussion of sexual matters is not taboo but is fully acknowledged and respected in Islam (Farrag & Hayter, 2014; Mosavi et al., 2014; Tabatabaie, 2015a). The Oman MOE should involve the Oman Ministry of Endowments and Religious Affairs to review and approve the contents of SRHE according to Islamic beliefs. The Oman Ministry of Endowments and Religious Affairs is accountable for the spiritual and religious values based on Islamic law and controls all things associated with Islam in Oman (Oman Ministry of Endowments and Religious Affairs, 2019). Hence, it can help to provide accurate information and directions to understand Islamic beliefs related to sexual health matters.

8.3.2 Appropriate Age for SRHE Programs and SRHE Topics

The goal of a school-based SRHE program is to facilitate positive sexual and reproductive health among adolescents by providing them with accurate and age-appropriate sexual and
reproductive health information according to their developmental level (Kirby et al., 2011; UNESCO, 2018; WHO, 2018a). According to SRHE guidelines of the WHO (2006), UNESCO (2018), CDC (2018a), and the UNFPA (2014), a comprehensive school-based SRHE program should cover biological, socio-cultural, psychological, and spiritual dimensions of adolescent sexual and reproductive health. It should also include various SRHE topics, such as puberty’s physiological changes, STIs, HIV, teenage pregnancy, contraceptive methods, condom use, intimacy, body image, sexual discussion-making, and gender roles.

This current study showed two different attitudes towards the appropriate age to start teaching school-based SRHE programs. In Phase one, most parents and school teachers that were interviewed preferred that these programs should be started from primary school due to the belief that early SRHE can help to provide children with basic sexual health information, such as personal safety about how to prevent child sexual abuse and avoid receiving incorrect and inappropriate sexual information from the Internet, social media and friends. This attitude is consistent with previous research conducted in Western (Cohen et al., 2012; Depauli & Plaute, 2018; Fentahun et al., 2012; Ito et al., 2006; McKay et al., 2014; Tortolero et al., 2011; Westwood & Mullan, 2006) and Middle Eastern communities (Mosavi et al., 2014; Latifnejad-Roudsari et al., 2013).

In contrast, some female school nurses, fathers, and male school teachers including Islamic and science teachers preferred that SRHE should be started later at secondary school. They believed that, in secondary school, students are mature, had experienced puberty, and were ready to receive SRHE. This attitude was consistent with the quantitative results of Phase two in which half of the parents indicated that SRHE should be started later in secondary with only a few parents wanting SRHE to be started in primary school. Participants from Phase one who did not support the early provision of SRHE programs reported that they were concerned that early SRHE may provide primary students with complex sexual information and motivate them to engage in sexual
activity. Likewise, Middle Eastern parents hold the view that early SRHE can motivate children to misbehave sexually and initiate sexual activities early, and thus, they supported the late introduction of SRHE (Farrag & Hayter, 2014; Latifnejad-Roudsari et al., 2013; Merghati-Khoei et al., 2014; Ramezankhani et al., 2014). However, participants from Phase one who supported early SRHE strongly recommended that school-based SRHE programs should be age-appropriate and start gradually according to the developmental level of the students. This means that they did not want their children to receive complex SRHE at an early age.

Participants’ preferences for SRHE to commence in grades 5 to 10 was similarly reported in Canadian (McKay et al., 2014; Weaver et al., 2002), American (Barr et al., 2014; Howard-Barr et al., 2011) and Indian (O’Sullivan et al., 2018) studies. This suggests that many parents prefer their adolescents to receive SRHE gradually, starting from the onset of puberty and early adolescence, whilst controlling the level of information. In terms of education level and age, the quantitative results (Phase two) indicated that parents with higher education levels and younger parents wanted SRHE to be introduced earlier in grades 1 to 4. This indicates that young parents and educated parents maybe more concerned about the dangers of child sexual abuse, receiving inappropriate sexual information from the Internet and other risky sexual behaviours that their children may be exposed to during childhood.

More importantly, in Phase one and Phase two, most parents, school teachers, and school nurses supported age-appropriate comprehensive school-based programs that covered a variety of SRHE topics. A comprehensive school-based SRHE program that covers a variety of sexual health topics is widely accepted by parents, school teachers, and school nurses in Western (Barr et al., 2014; Cohen et al., 2012; Duffy et al., 2013; Depauli & Plaute, 2018; Howard-Barr et al., 2011; O’Sullivan et al., 2018) and Middle Eastern communities (Farrag & Hayter, 2014; Khadijeh et al., 2015; Latifnejad-Roudsari et al., 2013). It has been established in many secondary schools
internationally as an essential step to reduce teenage pregnancy and STIs and improve adolescent
sexual health (ARCSHS, 2017; Barr et al., 2014; Bleakley et al., 2006; McKay et al., 2014;
UNESCO, 2018). In fact, internationally, many adolescent girls experience teenage pregnancy and
STIs as consequences of unprotected sex due to lack of comprehensive school-based SRHE
programs (CDC, 2017a, 2017b; WHO, 2018b, 2013). In Middle Eastern countries, a high
prevalence of premarital sexual activity has been reported among unmarried adolescents (Farahani
et al., 2011; Mohammodi et al., 2006; Mohtasham et al., 2009; Vakilian et al., 2014). Therefore, it
is very important that the school curriculum decision-makers, policy-makers, law-makers and
school healthcare-providers in Oman and other Middle Eastern countries consider the introduction
of comprehensive school-based SRHE programs with a focus on abstinence and prevention.

In this current study, participants’ preferences regarding the inclusion of comprehensive
SRHE topics in Phase one and Phase two—regardless of their gender, education level or age—
indicated a contemporary shifting socio-cultural landscape in Oman. This cohort of parents, school
teachers, and school nurses were highly aware of the sexual exposure and risks that Omani
adolescents are exposed to—social media particularly—and that a SRHE program needed to be
comprehensive and not ignore topics that were considered controversial and taboo in former times.
Despite participants’ agreement for comprehensive school-based SRHE programs, a significant
proportion of parents (40%) in Phase two were not in favour for schools educating their children
on safe sex and birth control regardless of their gender, education level or age. However, in Phase
one, most parents, school teachers, and school nurses supported the inclusion of safe sex and birth
control in the SRHE curriculum. This difference may be because, in Phase one, the attitudes were
limited to a few parents (15 parents) compared to 239 parents in Phase two. This means that if
many parents were interviewed in Phase one, some of them may have reported that they would not
prefer to cover the topic of safe sex and birth control. In addition, school teachers and school nurses
interviewed in Phase one could have had scientific knowledge about the importance of safe sex and birth control and thus, they supported this topic. Support for the topic of safe sex and birth control has been found to be a contentious point in many conservative societies (Barr et al., 2014; Depauli & Plaute, 2018; Tabatabaie, 2015b). Hence, the Oman MOE and the Oman MOH should educate the community on the value of SRHE in terms of this issue before implementing school-based SRHE programs. In addition, further qualitative studies investigating the attitudes of Omani parents towards the topic of safe sex and birth control should be conducted.

This current study also found parental preference for topics, such as contraception and safe sex to be introduced later in high school due to the tenets of premarital sexual activity in Islamic teachings (Barr et al., 2014; Helmer, Senior, Davison, & Vodic, 2015; Latifnejad-Roudsari et al., 2013; Mosavi et al., 2014; Orgocka, 2004; Tabatabaie, 2015b). However, despite parental wishes, many young adolescents in Middle Eastern and Western communities have requested a comprehensive SRHE that covers information about contraceptives and condom use (Helmer et al., 2015; Mouhanna et al., 2017; Thianthai, 2018; Vanwesenbeeck, Westeneng, de Boer, Reinders, & van Zorge, 2016).

Omani parents, school teachers, and school nurses both in Phase one and Phase two were in favour of the inclusion of topics, such as personal safety to prevent child sexual abuse early on, in grades 1 to 4. Support for the introduction of other topics in grades 5 to 10 suggests that parents, school teachers and school nurses want students to receive education about these topics near or during the stage of puberty, and to be provided with age-appropriate information. These findings are consistent with previous research conducted in Western and Middle Eastern communities (Depauli & Plaute, 2018; Farrag & Hayter, 2014; McKay et al., 2014; O’Sullivan et al., 2018; Weaver et al., 2002; Westwood & Mullan, 2007). Therefore, it is very important that the
curriculum decision-makers, policy-makers, law-makers and school healthcare-providers in Oman, and other Muslim countries, consider age-appropriate school-based SRHE programs.

8.3.3 Appropriate Educators to Teach School-Based SRHE Programs

Research conducted in Middle Eastern and non-Middle Eastern countries recommends that when designing school-based SRHE programs, it is very important that age-appropriate SRHE curriculum is delivered to students through qualified educators for the success of these programs (Barr et al., 2014; Cohen et al., 2012; Kirby et al., 2011; Mosavi et al., 2014; O'Sullivan et al., 2018; Parker et al., 2009; UNESCO, 2018). Similarly, in this current study, the qualitative data showed that there was general agreement among most parents, school teachers, and school nurses that school-based SRHE programs should be conducted through qualified educators, such as school teachers and school nurses who receive SRHE training. These results are consistent with the quantitative results of Phase two in which most parents rated school teachers and school nurses as important sources of SRHE for adolescents, regardless of their gender, education level or age.

A school-based SRHE program delivered through qualified school teachers is considered an important part of the school curriculum and its efficacy is widely acknowledged in the literature (Duffy et al., 2013; Eisenberg et al., 2013; Goldman, 2010; UNESCO, 2018). School teachers and school nurses are seen by parents and adolescents as primary providers for SRHE programs within school environments and as a more trustworthy source of sexual health information than the Internet and friends (Lagus et al., 2011; McKay et al., 2014; O’Sullivan et al., 2018). The participants’ preferences towards school teachers and school nurses to conduct SRHE in this current study maybe because school science teachers can use their knowledge and skills in science and teaching strategies to conduct sexual health information to the students using credible and appealing methods (Borawski et al., 2015; Shepherd et al., 2010). Additionally, school nurses are
often seen as healthcare professionals who are able to provide holistic healthcare for individuals of all ages (Borawski et al., 2015; UNESCO, 2018).

The literature review showed that many school teachers and school nurses lacked comprehensive sexual and reproductive health knowledge and were being asked to provide SRHE for students without adequate preparation including in Middle Eastern countries, such as Iran (Khadijeh et al., 2015; Mosavi et al., 2014) and Egypt (Farrag & Hayter, 2014) and in non-Middle Eastern countries such as Australia (Burns & Hendriks, 2018; Duffy et al., 2013; Goldman, 2011), USA (Eisenberg et al., 2013; Lindau et al., 2008), the UK (Westwood & Mullan, 2007, 2006), and Canada (Cohen et al., 2012; Ninomiya, 2010). Thus, most parents, school teachers, and school nurses that were interviewed stressed that educators who conduct SRHE including school teachers and school nurses should receive SRHE training. Depauli and Plaute (2018) found that parents rated the school teacher’s qualifications and continuing education as important facilitators for successful sexual education. Evidence indicates that well-prepared teachers and school nurses are the key to effective SRHE (Clayton et al., 2018; Kirby, 2007; UNESCO, 2018). Studies clearly show that comprehensive professional development can produce a remarkable outcome on improving the role of school teachers and school nurses in delivering SRHE by improving their sexual health skills and knowledge as well as their confidence, attitudes, and beliefs towards the provision of school-based SRHE programs (Burns & Hendriks, 2018; Clayton et al., 2018; Cohen et al., 2012; UNESCO, 2018).

Some male and female Islamic teachers and female school nurses that were interviewed suggested that school-based SRHE programs should involve Islamic educators such as Islamic teachers or religious leaders due to their Islamic knowledge related to sexual health matters. These findings are consistent with previous research conducted in Western and Middle Eastern communities in which parents, school teachers and school nurses wanted religious leaders to be
involved in delivering school-based SRHE programs (Farrag & Hayter, 2014; McKay et al., 2014; Merghati-Khoei et al., 2014; Thianthai, 2018; UNESCO, 2018). Participants suggested this possibly because they assumed that involving religious leaders will ensure that the contents of SRHE are conducted within Islamic rules and regulations. According to the UNESCO international technical guidance on sexuality education, religious leaders can support school-based SRHE programs developers and providers by including the key values central to the relevant religions and cultures, as people’s religious beliefs will inform what they do with the knowledge they possess (UNESCO, 2018). This is an important suggestion, which should be recognised by the school curriculum decision-makers in Oman and other Muslim countries when implementing school-based SRHE programs.

Notably, both qualitative and quantitative results showed that parents, school teachers and school nurses—regardless of their gender, education level or age—recommended that parents should share responsibility with trained school personnel in educating their children about sexual issues. Similar preferences were shown by parents, school teachers, and school nurses in other Middle Eastern (Mosavi et al., 2014; Sinai & Shehade, 2018) and non-Middle Eastern countries (Depauli & Plaute, 2018; Jerves et al., 2014; McKay et al., 2014; Vanwesenbeeck et al., 2016). This an important recommendation, which needs to be considered by the Oman MOE and the Oman MOH. Evidence shows that the sexuality of adolescents is strongly dependent on their relationship with their parents. For example, American and Australian studies clearly show that parental sexual communication with adolescents plays a significant role in reducing adolescents’ sexual risk-taking (Grossman et al., 2014; Haglund & Fehring, 2010; Schuster et al., 2008). Evidence also indicates that a positive relationship between parents and school personnel including school teachers and school nurses can foster the success of school-based SRHE programs (Kirby et al., 2011; UNESCO, 2018).
In contrast, some male and female science school teachers that were interviewed argued that some parents do not have adequate scientific SRHE knowledge and should first receive SRHE training before providing their adolescents with SRHE. This argument is true as in this study, parents from both Phase one and Phase two indicated that they lacked sexual health knowledge to conduct SRHE for their adolescents and wanted to receive SRHE training. The literature review clearly showed that parents in Middle Eastern and Western countries lacked the scientific sexual health knowledge and comfort to communicate with their adolescents about sexual matters (Barr et al., 2014; Latifnejad-Roudsari et al., 2013; McKay et al., 2014; O’Sullivan et al., 2018). The absence of parent-adolescent sexual communication due to lack of scientific sexual health knowledge or comfort may force adolescents to look elsewhere to answer their sexual inquires, such as the Internet. Nevertheless, school-based SRHE programs have been shown to be effective in improving parents’ communication, competence, knowledge, and skills related to SRHE (Grossman et al., 2014). Therefore, the Oman MOE should also consider this suggestion when designing SRHE programs.

8.4 School-Based SRHE Programs’ Facilitators and Barriers

This section will discuss the facilitators and barriers that face parents, school teachers, and school nurses towards implementing school-based SRHE programs in Oman.

8.4.1 Islamic Religious Views of SRHE Programs

One of the important facilitators that was indicated by most parents, school teachers, and school nurses was that Islam does not conflict with SRHE and is not a barrier for the introduction of school-based SRHE programs in Oman. This is because SRHE is not forbidden in Islam and sexual health matters have been widely discussed in the Holy Quran, and the Sunna and Hadith. This explains why most parents from Phase two of this current study agreed with the introduction
of school-based SRHE programs. It also explains why only a few parents did not support the provision of SRHE in schools.

The discussion of sexual matters is not taboo but is fully acknowledged and respected in Islam (Almany, 2009; Tabatabaie, 2015a; Quran 2018, p. 2, 23, 39; Sinai & Shehade, 2018). Islam highlights the importance of acquiring and pursuing knowledge including sexual and reproductive health knowledge (Quran, 2018, p. 39; Tabatabaie, 2015a). For example, according to Islamic regulations, homosexuality and sex outside marriage (premarital sex) are prohibited and are considered as punishable sins (Quran, 2018, p. 2, 7). Muslim men and women were never hesitant or shy to ask the Prophet Mohammed for His advice regarding their sexual matters (Almany, 2009; Merghati-Khoei et al., 2008; Tabatabaie, 2015a). This evidence is consistent with the current study’s results that Islam is not a barrier to providing SRHE and that implementing school-based SRHE programs is possible in Muslim countries.

8.4.2 Discussing Sexual Matters with the Opposite Gender

This section discusses the issue of gender, which plays a significant role in inhibiting the delivery of school-based SRHE programs. The qualitative results showed that parents, school teachers, and school nurses were uncomfortable and felt shy to discuss sexual health matters with adolescents of the opposite gender. Likewise, in Phase two, the quantitative results suggested that mothers were more comfortable to teach SRHE to their daughters whereas fathers were more comfortable to teach SRHE to their sons. This attitude was true regardless of the participants’ education level or age. These results could be explained by the Middle Eastern culture. Literature from the Middle East has highlighted the issue of gender in providing school-based SRHE programs. For example, in Iran and Egypt, mothers, female school teachers, and female school nurses reported that they were more comfortable providing SRHE for females than males. They also reported that they were more willing to teach SRHE topics—commonly viewed as ‘female
topics’—such as menstruation, due to the role of females in the Middle Eastern culture [females are often expected to be demure and sexually naive and have limited interactions with males, which may be why parents, school teachers and school nurses feel uncomfortable with teaching SRHE to the opposite gender] (Farrag & Hayter, 2014; Mosavi et al., 2014; Latifnejad-Roudsari et al., 2013). However, the issue of teaching SRHE to opposite genders is a global issue among school teachers and school nurses. Fortunately, this can be remedied with SRHE training (Lindau et al., 2008; Thammaraksa et al., 2014; Thianthai et al., 2018).

In Oman, public schools are segregated by gender: boys’ schools with only male teachers and girls’ schools with only female teachers (Oman MOE, 2018) and thus, some male and female science school teachers contended that there would be no gender issues associated with the provision of school-based SRHE programs. However, this still an issue for female school nurses in Oman because female school nurses provide school health care for both boys’ and girls’ schools (Oman MOE, 2018). Hence, the Oman MOE and Oman MOH should consider this barrier prior to implementing school-based SRHE programs by training female school nurses to provide SRHE for male students or by assigning male school nurses to boys’ schools.

8.4.3 Sexual Discussions as a Socio-Cultural Taboo

In Middle Eastern countries including Oman, a culture of silence and taboo towards the discussion of sexual matters is common (Gańczak et al., 2007; Merghati-Khoei et al., 2014; Mouhanna et al., 2017). Likewise, in this current study, socio-cultural taboo was identified as one of the major barriers towards implementing school-based SRHE programs in Oman, which needs to be well-thought-out by the Oman MOE and Oman MOH. There was general agreement among parents, school teachers, and school nurses that communication with children or adolescents about sexual matters is taboo and socially sensitive and hence, they avoided providing SRHE for them. This could explain one of the reasons why most parents that were surveyed in Phase two had not
discussed most of the sexual health topics with their children. These results are consistent with previous studies conducted in Thailand where Thai culture norms inhabit parents’ sexual discussion with their children (Sridawruang et al., 2010; Thianthai, 2018; Vuttanont et al., 2006), and Uganda where school teachers want to teach SRHE but cannot because it is considered immoral in their culture (De Haas & Hutter, 2018). Because of socio-cultural taboos, some school teachers (including Islamic and science school teachers) and school nurses were afraid and felt that they would be blamed and questioned by parents and school administration for providing SRHE for students. This fear of parental and community opposition was identified by school teachers and school nurses as one of the major barriers for delivering school-based SRHE programs in Australia (Duffy et al., 2013; Johnson et al., 2014), USA (Brewin et al., 2014; Eisenberg et al., 2013), and UK (Hayter et al., 2008), Canada (Cohen et al., 2012), Iran (Latifnejad-Roudsari et al., 2013) and Egypt (Farrag & Hayter, 2014). Nevertheless, parents from these countries showed strong support towards implementing these programs including Canada (McKay et al., 2014; Weaver et al., 2002), Australia (Department of Health, Western Australia, 2008), USA (Lagus et al., 2011), the UK (Turnbull et al., 2008) and Iran (Merghati-Khoei et al., 2014; Mosavi et al., 2014). The findings from this current study may help to reduce the cultural taboo and fear towards SRHE by informing school curriculum decision-makers, school teachers and school nurses about parental support towards the introduction of SRHE in Omani schools. This could lead to changes in school policy and foster implementing SRHE in schools. The Oman MOE and Oman MOH should consider the fact that sharing the responsibility of SRHE with parents may also assist in reducing parental opposition. School curriculum decision-makers should consider that parents may wish to take classes so that they can acquire sexual health information to allow them to discuss SRHE topics with their own children once school-based SRHE programs have been introduced.
Literature from the Middle East shows that socio-cultural taboos inhibit implementing school-based SRHE, despite the need for SRHE in Middle Eastern countries (Tabatabaie, 2015a, 2015b). For example, studies conducted in Middle Eastern countries show that there is an absence of sexual communication between parents and their children. This absence of sexual communication also exists between school teachers/school nurses and students because of socio-cultural taboos, embarrassment and shyness surrounding sexual discussions (Farrag & Hayter, 2014; Khadijeh et al., 2015; Merghati-Khoei et al., 2014; Mosavi et al., 2014; Roudi-Fahimi & El Feki, 2011), even though most Middle Eastern adolescents want their parents, school teachers and school nurses to provide them with comprehensive SRHE (Gańczak et al., 2007; Helmer et al., 2015; Mosavi et al., 2014).

Additionally, in Middle Eastern countries, school policymakers ignore implementing school-based SRHE programs because of socio-cultural taboos (Farrag & Hayter, 2014; Roudi-Fahimi & El Feki, 2011; Tabatabaie, 2015b), despite the high prevalence of unprotected premarital sexual activities among adolescents (Farahani et al., 2011; Mohtasham et al., 2009; Vakilian et al., 2014). As mentioned earlier, in Islamic settings, the provision of these programs is a complex and contentious issue and socio-cultural taboos towards SRHE may exist because some conservative Islamic parents and religious leaders hold the belief that SRHE is part of the Western culture that will conflict with Islamic regulations (Farrag & Hayter, 2014; Merghati-Khoei et al., 2014; Tabatabaie, 2015a, 2015b). Parents assume that their children will automatically abide by the tenets of Islamic faith following strong socio-cultural and legal disapproval, because of the associated familial dishonour and shame of premarital sexual activity (Tabatabaie, 2015b). Likewise, societal rejection of premarital sexual activity and lack of public sexual discussion in the Thai culture has resulted in blocking the implementation of school-based SRHE programs (Sridawruang et al., 2010; Thianthai, 2018). Therefore, aligning SRHE programs with religious
and cultural beliefs may help to reduce these socio-cultural taboos and foster implementing these programs in Middle Eastern countries (Farrag & Hayter, 2014; UNESCO, 2018).

The qualitative findings from this current study revealed some useful suggestions on how to overcome these socio-cultural taboos. For example, there was a general agreement among parents, school teachers, and school nurses that public awareness about the importance of school-based SRHE programs—through the Oman MOE and Oman MOH—would facilitate social support and reduce opposition for implementing these programs. According to this suggestion, the Oman MOH and MOE should report cases of child sexual abuse and inform the parents about the importance of school-based SRHE programs in preventing child sexual abuse.

Additionally, some male and female science teachers and female school nurses suggested that these socio-cultural taboos can be overcome by establishing well-defined SRHE policies by both the Oman MOE and Oman MOH. They argued that parents would be more accepting of SRHE if it was regulated by the Oman MOE and Oman MOH. In contrast, some male and female Islamic teachers suggested that socio-cultural taboos towards these programs can be reduced by considering the culture and Islamic religious views and involving Islamic teachers or religious leaders when designing the SRHE curriculum. These suggestions are consistent with the UNESCO international technical guidance on sexuality education [section 6: supporting school-based SRHE programs planning and implementation] (UNESCO, 2018). By considering these findings, the Oman MOE and Oman MOH will play a significant role in implementing school-based SRHE programs and improving the sexual and reproductive health among adolescents in Oman.

8.4.4 Lack of SRHE Knowledge and Policy and The Need for SRHE Training

Although parents, school teachers, and school nurses that were interviewed in Phase one and parents that were surveyed in Phase two considered themselves as important sources of SRHE, most of them lacked the scientific sexual health knowledge to teach SRHE and reported the need
for SRHE training. This was true regardless of their gender, education level or age. In Phase one, this was stated as a reason by most school teachers and female school nurses for avoiding the provision of SRHE for students in school. It was also stated by parents as the reason for the absence of sexual communication with their children or poor provision of SRHE at home. This also could explain why the majority of parents in Phase two had not encouraged their adolescents to ask them questions about sexual and reproductive health matters and why they discussed all SRHE topics superficially. These findings are consistent with previous studies conducted among Middle Eastern adolescents including Oman, indicating that most parents rarely talk to their children regarding sexual matters (Alquaiz et al., 2012; Mosavi et al., 2014; Oman MOH & WHO, 2015, 2012; Sinai & Shehade, 2018). However, the quantitative results in this current study indicated that mothers were more likely to talk about sexual matters with their children at home than fathers. These results are consistent with previous research conducted in Canada (Weaver et al., 2002), Austria (Depauli & Plaute, 2018) and India (O’Sullivan et al., 2018). This maybe because in Oman, mothers often stay with their children more than fathers and have more time to talk with their children. Education level and age were not associated with any significant difference in parents’ attitudes regarding SRHE they provided to their children at home. This could be because most parents who participated in this current study (including young parents, old parents, and parents with higher education levels and lower education levels) lacked scientific SRHE knowledge.

School-based SRHE studies conducted among parents, school teachers and school nurses in Middle Eastern and non-Middle Eastern countries clearly demonstrate that parents, school teachers and school nurses avoid providing SRHE because of lack of SRHE knowledge and skills. This has been demonstrated in Canada (Cohen et al., 2012; Mckay et al., 2014), Australia (Duffy et al., 2013; Johnson et al., 2014), the UK (Hayter et al., 2008; Schutte et al., 2014; Westwood & Mullan, 2007, 2006), USA (Barr et al., 2014; Dake et al., 2014; Eisenberg et al., 2013), India
(O’Sullivan et al., 2018), Thailand (Sridawruang et al., 2010; Thammaraksa et al., 2014), Tanzania (Wamoyi et al., 2010), Uganda (Muhwezi et al., 2015) Iran (Ganji et al., 2018; Khadijeh et al., 2015; Ramezankhani et al., 2014) and Egypt (Farrag & Hayter, 2014). For example, several parents, school teachers and school nurses have reported that they lack scientific SRHE knowledge to teach topics on STIs, HIV and contraceptive methods, and that they wanted to receive SRHE training (Duffy et al., 2013; Farrag & Hayter, 2014; Mckay et al., 2014; Sridawruang et al., 2010).

In this current study, participants stressed the need for SRHE training, which has been shown to be effective in improving communication, competence, confidence and knowledge related to sexual and reproductive health matters (including controversial and sensitive SRHE topics) of parents (Grossman et al., 2014; Martin, Riazi, Firooz, & Nasiri, 2018) as well as school teachers and school nurses (Burns & Hendriks, 2018; Clayton et al., 2018; Cohen et al., 2012; Thammaraksa et al., 2014; UNESCO, 2018). Therefore, the Oman MOE and the Oman MOH should consider this recommendation and provide parents, school teachers, and school nurses with SRHE training. For example, some male and female science school teachers suggested that SRHE should be covered in the bachelor science degree or offer specialised SRHE courses at the College of Education.

More importantly, this current study also showed that the lack of clear school polices and guidelines to teach SRHE was another reason stated by male and female school teachers and female school nurses for avoiding discussing sexual health topics with students. These findings are consistent with previous studies showing that school teachers and school nurses experience challenges in providing school-based SRHE programs due to a lack of SRHE policy (Duffy et al., 2013; Eisenberg et al., 2013; Johnson et al., 2014; Westwood & Mullan, 2006, 2009; UNESCO, 2018). For example, several studies report that school teachers and school nurses are requested by school administration not to cover sensitive SRHE topics, such as homosexuality and condom use.
due to a lack of clear SRHE policy (Eisenberg et al., 2013; Piercy & Hayter, 2008; Westwood & Mullan, 2009, 2006). Likewise, in this current study, some female science teachers and female school nurses reported that they were questioned by the school administration for providing high school girls with information about condom use and contraceptive methods. Therefore, it is crucial that the Oman MOE, Oman MOH, policy-makers and law-makers initiate clear SRHE policies to assist school teachers and school nurses in conducting effective school-based SRHE programs (Rabbitte & Enriquez, 2018; UNESCO, 2018). For example, there should be school policies allowing school teachers and school nurses to:

- Cover information about child sexual abuse in primary school curriculums.
- Deal with and report the cases of child sexual abuse.
- Discuss and answer students’ sexual inquires.
- Cover the information on the prevention of STIs and HIV including information about condom use in secondary school curriculums.

Although both school teachers and female school nurses reported a need for SRHE training, some female school nurses considered themselves better than science teachers in terms of scientific sexual health knowledge. This could be because school nurses often have clinical experience and some sexual health information about HIV, STIs, condom use and contraceptive methods (Borawski et al., 2015; Brunner & Smeltzer, 2010). In contrast, some male and female science school teachers stated that school nurses do not have teaching strategies and skills compared to science school teachers. They suggested that school nurses should receive SRHE training including teaching strategies before conducting school-based SRHE. The school teachers stated this maybe because Omani school teachers are trained in teaching strategies in their bachelor degree or by the Oman MOE before they commence teaching students in schools (Oman MOE, 2018). Borawski et al. (2015) found that students educated by school teachers were more likely to describe their
educator as organised, prepared, delivered information simply, and assisted them to think about their health than students taught by school nurses.

Furthermore, most science and Islamic school teachers and parents reported that they did not have time to conduct SRHE. For example, science school teachers stated that they were overloaded with the science curriculum. These results were similarly reported by school teachers in Western countries (Brewin et al., 2014; Cohen et al., 2012; Eisenberg et al., 2013; Westwood & Mullan, 2006) and Middle Eastern countries (Mosavi et al., 2014) in which SRHE was often conducted at the end of the semester with insufficient time compared to other courses. This suggests that the Oman MOE and Oman MOH should consider allocating sufficient time for school teachers and school nurses to conduct school-based SRHE programs. For example, first, the Oman MOE should include SRHE in school curriculums and, then it may assign two qualified science school teachers per school—who receive preparation and training—to only conduct SRHE curriculum. In term of parents, schools may invite parents with their children to discuss with them about the academic performance of their children and to encourage parents to talk to their children about their sexual inquires and answering them with assistance from a sexual health educator from the school.

The discussion on the above findings has provided valuable recommendations and suggestions for the Oman MOE and the Oman MOH as well as school decision-makers in other Middle Eastern countries for the effective implementation of school-based SRHE programs. Thus, the findings of this study will play an important role in improving adolescent sexual and reproductive health and well-being in Oman and in other Middle Eastern countries. The next section discusses the critique of SCT.
8.5 Critique of Social Cognitive Theory

This section includes a discussion and critique on the utilisation of the SCT applied in this study. This section will also evaluate the guidance that the SCT provided in addressing the research questions and understanding cultural and religion influences in implementing school-based SRHE programs in Oman. The utilisation of the SCT in this study helped to examine implementing these programs based on three factors including personal, behavioural and environmental. These factors were not covered in other theoretical frameworks. Furthermore, the SCT considers many levels of the social ecological model in addressing behaviour change in individuals (Bandura, 1986, 2001) (See Figure 8.1). It provides an exploratory framework that assists in understanding an individuals’ behaviours and the meaning of human actions, that are deeply rooted in religious, social and cultural settings as well as the environment in which that individual is located. School-based SRHE programs face various barriers to their implementation in many Western, African and Asian countries including Middle Eastern countries due to complex social-cultural, factors at play (Barr et al., 2014; Duffy et al., 2013; Latifnejad-Roudsari et al., 2013; Sridawruang et al., 2010). The application of SCT as a framework in this study facilitated the understanding of the environmental factor including facilitators and barriers towards implementing school-based SRHE programs. The barriers included: family norms, the absence of parent-adolescent sexual communication, the fear of parental opposition, and perceptions of sexual discussion as a socio-cultural taboo.
Figure 8.1 Modified Social Cognitive Theory for Implementation of School-Based SRHE Programs in Middle Eastern Countries. The figure shows the three main factors of SCT (personal, behavioural and environmental) with sub-factors identified from analysis of participants’ results. It also shows the emotional factor and sub-factors identified by participants. Based on the study analysis, the emotional factor was added in SCT as a new main factor which needs to be considered when implementing school-based SRHE programs in Middle Eastern Countries.
Moreover, the environmental factor of SCT helped to understand the religious aspects that parents, school teachers, and school nurses in Oman wanted to be incorporated in SRHE programs. It also assisted to understand the Islamic views of SRHE programs. In addition, the environmental factor facilitated the examination of issues within the school environment that obstruct school teachers and school nurses to implement effective SRHE. These factors included: lack of time, SRHE policy and guidelines, as well as the issues outside the school such as the influence of smartphones, social media and the Internet in providing adolescents with incorrect sexual health information (See Figure 8.1). Thus, the Oman MOE, the Oman MOH, policy-makers and lawmakers should consider the environmental factor of the SCT before implementing school-based SRHE programs in Oman. For example, based on the environmental factor of SCT, both the Oman MOE and MOH should consider the following suggestions:

- Align SRHE programs with Islamic beliefs. For example, students should be educated about the Islamic views on homosexuality (forbidden in Islam), premarital sex (avoid engaging in any sexual activities until marriage), breastfeeding (baby should be breastfed for two years), and menstruation (during the days of menstruation, females should not pray and should not have sexual intercourse).

- Involve the Oman Ministry of Endowments and Religious Affairs to approve the contents of the SRHE program according to Islamic beliefs.

- Conduct studies to understand Omani parent-adolescent sexual communication.

- Help parents to discuss sexual matters with their adolescents in order to conduct effective SRHE programs.

- Conduct community education about the importance of school-based SRHE programs.

- Conduct a national survey to assess parental and community opposition.
• Plan clear SRHE polices.
• Use social media to educate parents and adolescents about SRHE.

The application of SCT provided an exploratory framework that assisted to understand the personal factor, which also influences implementing school-based SRHE programs. For example, SCT provided guidance to explore the attitudes and beliefs of parents, school teachers, and school nurses towards these programs (See Figure 8.1). According to school-based SRHE programs’ guidelines of the UNESCO (2018) and Kirby et al. (2011), securing parental support is important for the success of these programs. Parental support is essential in assisting school curriculum decision-makers, classroom teachers, and school healthcare-providers to change policies and foster the development and implementation of these programs (Department of Health, Western Australia, 2008; McKay et al., 2014; UNESCO, 2018). In this current study, most parents, school teachers and school nurses supported comprehensive school-based SRHE programs and held the attitude that these programs would help to improve adolescent sexual health knowledge. In addition, the application of SCT provided guidance to explore the personal factor that influences the design of a SRHE curriculum. For example, this current study showed that parents, school teachers and school nurses wanted age-appropriate SRHE and preferred that SRHE be conducted by qualified school teachers and school nurses. Based on the personal factor of SCT, the Oman MOE, MOH, policy-makers and law-makers should first secure parental support and be aware of their preferences before implementing school-based SRHE programs.

The behavioural factor of SCT directed this current study to examine the participants’ facilitators and barriers, such as lack of sexual health knowledge and a need for SRHE training (See Figure 8.1). It is crucial that intervention efforts towards implementing school-based SRHE programs are based on an understanding of the school teachers’ and school nurses’ facilitators and barriers towards the provision of these programs (UNESCO, 2018). Studies conducted in Canada
(Cohen et al., 2012), USA (Eisenberg et al., 2013; Lindau et al., 2008), and Australia (Duffy et al., 2013) indicated that many school teachers and school nurses were being asked to be involved in the role of teaching SRHE without adequate preparation and training. This current study clearly showed that the Oman MOE and Oman MOH should consider the behavioural factor of SCT before implementing school-based SRHE programs. For example, both the Oman MOE and Oman MOH should train Omani school teachers and school nurses and provide them with adequate SRHE resources before implementing these programs.

Furthermore, the utilisation of the SCT in this current study helped to understand the influences and interactions of these three factors in implementing school-based SRHE programs. Some theories, such as HBM often explain human behaviour based on one-sided determinism (Mosavi et al., 2014). The theoretical framework of SCT provided a model of causation involving triadic reciprocal determinism (Bandura, 1986, 2001). This model of reciprocal causation showed that behavioural, personal and environmental factors all operate as interacting determinants that influence each other bidirectionally (See Figure 8.1). However, reciprocal causation does not indicate that the different sources of influence are of equal strength and all occur simultaneously. Some influences may be stronger than others. It takes time for a causal factor to exert its influence and initiate reciprocal influences (Bandura, 1986, 2001). For example, the personal-environmental segment of reciprocal causation describes the interactive relationship between personal characteristics and environmental influences. For example, individuals’ attitudes and beliefs are shaped and changed by social and cultural influences. Differing attitudes reflect differences in peoples’ social environmental influences, such as culture and religion (Bandura, 1986). In this current study, parents, school teachers and school nurses wanted school-based SRHE programs to be aligned with their religion. Hence, both the Oman MOE and MOH should apply SCT’s model of reciprocal causation to understand the interactions between personal, environmental and
behavioural factors when implementing school-based SRHE programs in Oman. For example, the Oman MOE should consider:

- Community Education/Sexual health knowledge (behavioural factor) about the importance of school-based programs to increase support (personal factor) towards these programs.
- Availability of SRHE polices and guidelines (environmental factor) can increase the confidence of school teachers and school nurses to conduct school-based SRHE programs (behavioural factor).

However, there were some limitations in applying SCT to this study. For example, the theory does not account for the emotional factor, which plays an important role in influencing the attitudes of parents, school teachers, and school nurses towards school-based SRHE programs (Cohen et al., 2012; Duffy et al., 2013). Many psychologists argue that some behaviours occur as the direct result of emotional influences (Pinker, 2009). This current study recommends that the emotional factor should be considered when using SCT in examining the implementation of these programs (See Figure 8.1). In this current study, parents, school teachers, and school nurses felt shy and embarrassed with discussing sensitive sexual matters and therefore, they avoided providing SRHE. Evidence indicates that delivery of SRHE is a sensitive task (Kirby et al., 2011) and many school teachers and school nurses report that they are emotionally uncomfortable and unwilling to teach sensitive SRHE topics (Cohen et al., 2012; Eisenberg et al., 2013; Khadijeh et al., 2015; Westwood & Mullan, 2006). The findings of this current study also highlighted the emotional influence regarding discussing sexual matters with the opposite gender. Several parents, school teachers and school nurses reported that they were emotionally uncomfortable to discuss sexual health matters with the opposite gender. For example, most mothers who were interviewed were comfortable to discuss sexual matters only with their daughters. Similarly, Cohen et al.
(2012) found that female Canadian teachers were more comfortable teaching ‘female topics’, such as menstruation, whereas male Canadian teachers were more comfortable teaching ‘male topics’, such as nocturnal emissions. The study suggested incorporating an emotional factor in SCT in order to obtain a holistic and in-depth understanding of parents, school teachers and school nurses towards implementing school-based SRHE programs (See Figure 8.1).

8.6 Limitations of the Study

This section presents the study’s limitations, with a focus on the limitations of the study’s methodology.

Although this study provided potent timely data regarding the attitudes and beliefs of parents, school teachers and school nurses towards the introduction of school-based SRHE in Oman, it has several limitations. First, the relatively small sample size of two schools may reduce the generalizability of the findings. However, this study was conducted in a large district with a high concentration of rural and urban populations and more public schools than other districts. In addition, as socioeconomic status and culture are uniform throughout Oman and public schools have similar facilities and services (Oman MOE, 2018), the two schools that were selected can be considered representative of schools in other regions of Oman. Second, this study was limited to parents with children in grades 7 to 9 (students aged 12 to 14 years) and thus, the attitudes of parents with younger and older students towards SRHE programs is unknown. Third, in Oman, most people (60%) have a high school or less than high school education (Oman NCSI, 2018). The sample of this study in Phase one and Phase two had higher levels of education than this, and therefore participants’ views may not be representative of parents with lower levels of education.

In this current study, the sample size from Phase one and Phase two was limited solely to convenience sampling. Although the sample size was appropriate for FGDs (Creswell, 2014), a larger more purposive sample may be needed for future research. The consequences related to the
sample design were mitigated by setting inclusion and exclusion criteria and producing a report of the participants’ demographic characteristics in both Phase one and Phase two (Nieswiadomy, 2012; Schneider et al., 2013). The sample size of Phase two was determined using the survey sample size formula based on a confidence level of 95% and a confidence interval of 5% (Fink, 2003).

An additional limitation is that the survey that was used in Phase two of the current study, may fail to capture a complete picture of the religious and cultural influences of parents, school teachers and school nurses towards implementing school-based SRHE programs. This may be because the survey was developed from a Western perspective and as a result, failed to explore the highly salient religious and cultural influences in Middle Eastern countries. However, further modifications were made after a review of the relevant SRHE literature from the Middle East as well as the qualitative results of Phase one of this current study. Two questions related to Islamic beliefs and gender were added to the survey: (1) parental attitudes towards aligning SRHE programs with Islamic beliefs, and (2) parental comfort toward discussing sexual matters with opposite genders. Before the survey was piloted, the content of the parental survey was assessed by two independent expert assessors with experience and knowledge of adolescent SRHE programs in a Middle Eastern context. The assessors considered the study highly relevant to the Omani culture in terms of its clarity, appropriateness, and relevance, assessing the relationship of each question item with a 4-point Likert scale (1 = not relevant to 4 = very relevant). In addition, the use of FGDs and IDIs through mixed-methods facilitated the exploration of the contextual integration of religion and culture in this current study.

The changes that were made in the survey—based on the literature and the qualitative results of Phase one—may have reduced the previously established validity and reliability of the original questionnaire. An appropriate survey designed and validated for specific cultural
backgrounds to examine the attitudes and beliefs of parents, school teachers and school nurses towards implementing school-based SRHE programs in Middle Eastern countries has yet to be developed and validated. Nevertheless, reliability statistics for the survey items following minor modifications showed good internal consistency with Cronbach’s $\alpha = 0.8$. In addition, in this current study, consistency between the results of Phase one and Phase two was both a measure of reliability and validity of the survey. Achieving consistent results with previous research [from Iran and other nations] was also a measure of content validity of the survey.

In this current study, the survey focused on attitudes and was not based on reality and practicalities. Hence, the results of the survey found a positive attitude toward school-based SRHE programs, but it did not address the political viewpoints of the community, the school, and the government. Another limitation of this current study was that it focused on the perspectives of parents, school teachers and school nurses only. The current study did not examine adolescents’ perspectives toward implementing school-based SRHE programs. Thus, the current study might have missed comprehensive evidence regarding the attitudes and beliefs of adolescents towards implementing these programs. This study also lacked comprehensive data from another school curriculum decision-makers and school healthcare-providers, such as school physicians, school social specialists and school managers. In addition, this study was limited to the attitudes of female school nurses. This study was conducted in public secondary schools in the Saham district, which only have female school nurses. Unfortunately, male school nurses only work in public high schools. The other critical stakeholder group that was overlooked in this current study were the government policy makers and legislators. Including these stakeholders is vital, as any implementation of school-based SRHE programs is very dependent on this much broader overview.
The researcher contends that the use of FGDs in Phase one of this study provided valuable data regarding the attitudes and beliefs of parents, school teachers and school nurses towards school-based SRHE, but the method had certain limitations. First, some participants may have been uncomfortable sharing their attitudes and beliefs in front of a group, and FGDs may limit individual comments depending on the dynamics of the group and the topic of discussion (Creswell, 2014). Therefore, following on from the FGDs, IDIs were conducted three months later with one senior female school nurse, two parents and three school teachers who were participants in the FGDs to explore and confirm some of the key FGDs findings.

Moreover, there are risks associated with data collection from FGDs. However, these risks were successfully managed in this study. Improper training of the female school nurse facilitator on how to conduct FGDs is a risk that may affect the study’s results (Creswell, 2008; Stewart et al., 2007). The quality of FGDs with female participants was maintained by ensuring that the same female school nurse facilitator—独立 of the main study—was trained with a PowerPoint presentation and videotape lecture prior to the onset of this current study (See methodology chapter, Section 3.9.1.2: Training of the female school nurse facilitator). The discussion of school-based SRHE programs is a sensitive topic that had a risk of causing inconveniences to the participants (National Health and Medical Research Council, 2007, Sridawruang et al., 2010). Thus, the FGDs were conducted in single-sex groups to make the participants feel less hesitant to explore their perspectives on sensitive issues regarding the research topic. Participants were provided with information on how to (participants’ information form) contact the health professional counsellor at Saham hospital if they experienced anxiety related to this research. In addition, there was a risk that school teachers and female school nurses may experience time pressure and inconvenience due to their participation in the FGDs and IDIs of this current study. This risk was mitigated by the principal researcher who communicated with the Oman MOE (after
obtaining ethical approval) for permission to send letters to the selected schools’ administration about relieving the eligible school teachers and female school nurses from their extra workload so they could take part in the FGDs and IDIs.

8.7 Summary

This chapter discussed the key findings from the triangulation process, which was broadly guided by the key research questions. The first section of this chapter discussed the support for school-based SRHE in Oman, designing a SRHE curriculum and SRHE facilitators and barriers. A triangulated comparison was made between parents, school teachers, and school nurses who attended the FGDs and IDIs in Phase one and the surveyed parents in Phase two to provide methodological rigor. The second section of this chapter included a critique of SCT considering the findings of the study and the study’s limitations. Strengths and weakness of the SCT were discussed and an adaptation of the theory was suggested.

The study findings, which suggest strong support for SRHE programs, can facilitate education policy, SRHE curriculum decision-makers and school healthcare-providers in Oman, other Middle Eastern countries, and countries with Muslim immigrant populations. Utilisation of SCT provided an in-depth understanding of the facilitators and barriers including social, cultural and religious influences towards implementing school-based SRHE programs in Oman.

The next chapter concludes this current study and presents the study’s strengths, recommendations and implications for future research.
Chapter 9: Conclusion

9.1 Introduction

This final chapter provides an overview of the study and a summary of its key findings. The strengths of the study in relation to the research methodology are presented. Recommendations for enhancing effective implementation of school-based SRHE programs in Oman—based on the study findings and guided by the SCT framework—are explored. Finally, future research directions are provided.

9.2 Overview of the Study

School-based SRHE programs play an important role in reducing risky adolescent sexual behaviour and promoting adolescent health and well-being. This current study was undertaken to meet the research gap that was highlighted in the literature review in Chapter 2. To the best of the researcher’s knowledge, no published research has investigated the attitudes and beliefs of parents, school teachers, and school nurses towards implementing school-based SRHE programs in Oman. Furthermore, there is limited evidence regarding these attitudes and beliefs in other Islamic cultural settings. In the Middle East, studies regarding school-based SRHE programs to date have been mainly conducted in Iran (Khadijeh et al., 2015; Latifnejad-Roudsari et al., 2013; Merghati-Khoei et al., 2014; Mohammadi et al., 2007; Mosavi et al., 2014) using small sample sizes and a singular design. These studies were also limited to the attitudes and beliefs of mothers, female school teachers and female school nurses. What is needed is an extension of stakeholders’ fields of influence and in-depth culturally based methodologies. Exploring the attitudes and beliefs of parents, school teachers, and school nurses regarding the barriers and facilitators to providing SRHE programs for adolescents in Middle Eastern countries, specifically Oman is essential. This is because gaining first-time baseline empirical data from all these stakeholders of both genders is
vital for the development and provision of these programs. Such information is also vital in creating SRHE policy for the design, implementation, and sustainability of these programs in Muslim countries. The aim of this study, underpinned by SCT (Bandura, 1997, 2001), was to examine the attitudes and beliefs of parents, school teachers, and school nurses regarding school-based SRHE programs in Oman.

A mixed-method, two-phase sequential explorative descriptive study comprising both quantitative and qualitative research methods design was undertaken. In Phase one, three key stakeholder groups: parents (mothers and fathers of children studying in grades 7-9), school teachers (male and female teachers who teach students grades 7-9) and female school nurses were invited to participate in seven single-sex FGDs. There were between 5-9 persons in each group drawn from two public secondary schools grades 5-10 (one boys’ school and one girls’ school) located in the Saham district using convenience sampling. Each FGD was guided by a pre-piloted set of semi-structured interview questions. Following on from the FGDs, six face-to-face in-depth IDIs were conducted three months later with two parents, three school teachers and one senior female school nurse, all of whom were participants in the original FGDs. The IDIs were conducted to confirm some of the key findings of the FGDs. In Phase one, the data was analysed using a thematic analysis approach.

In Phase two, a convenience sample of 250 parents consisting of an equal number of mothers and fathers of children aged 12 to 14 (grades 7 to 9) were drawn from same two public secondary schools that were used in Phase one (grades 5 to 10; one boys’ school and one girls’ school). Participants were invited through the school administration to complete a self-administered questionnaire in Arabic (the national language of Oman). The response rate for the questionnaires was 95.6% (n = 125 mothers; n = 114 fathers). The analysis of the quantitative data was performed using the Statistical Package for Social Sciences (SPSS) version 24.0.
9.3 Summary of Findings

9.3.1 Phase One (Qualitative Findings):

Four major themes emerged from the thematic analysis of parents’, school teachers’ and school nurses’ responses. Most parents, school teachers, and school nurses that were interviewed in the FGDs and the IDIs, supported a comprehensive age-appropriate SRHE curriculum that addressed various SRHE topics—including controversial topics. They believed that the provision of school-based SRHE programs could help to improve adolescents’ sexual health knowledge and promote adolescent sexual and reproductive health and well-being. In addition, they recommended that the SRHE curriculum should be aligned with Islam and delivered by qualified educators. Many parents, school teachers, and school nurses stated that Islam is not a barrier to providing SRHE. However, they stated that sexual discussions with adolescents outside such programs are taboo in the Omani culture and therefore, such sexual communications are avoided. Finally, they reported there is a current lack of scientific knowledge and clear SRHE policies to conduct SRHE programs in Omani schools and hence, there is a need for SRHE training and SRHE polices.

9.3.2 Phase Two (Quantitative Findings):

The findings revealed that most parents (72.8%) supported school-based SRHE programs that conformed to the Islamic requirements of premarital sexual abstinence, but there was some opposition. Almost all parents supported comprehensive age-appropriate SRHE being taught to students aged 10 to 15 years, including topics perceived as controversial in Omani culture. However, only 61% of parents endorsed including the topics of birth control and safer sex. Most parents considered themselves, school teachers and school nurses to be important sources of SRHE. Nevertheless, more than 90% of parents indicated that their adolescents had not received good SRHE at school. In addition, most parents reported that they did not discuss SRHE with their
adolescents and lacked the scientific knowledge on SRHE to do so. Finally, 85% of parents wished to attend SRHE training.

9.4 Strengths of the Study

This is the first study in Oman to use an in-depth, theoretically driven mixed-methodology to examine the attitudes and beliefs of parents, school teachers, and school nurses towards school-based SRHE programs. The application of FGDs and IDIs in Phase one (qualitative) and a self-administered questionnaire in Phase two (quantitative) also enabled the researcher to examine the theoretical framework deeper and answer the research questions. Hence, this current study has provided important insights regarding implementing these programs in Islamic settings. It has also highlighted important factors related to implementing these programs, such as the high-level of parental support, the preferred design for SRHE curriculum, facilitators and barriers towards effective implementation of these programs including cultural and religious issues. The literature review gap in understanding the attitudes and beliefs of parents, school teachers, and school nurses in Islamic settings was addressed and will contribute to improving adolescent sexual health and well-being in Middle Eastern countries.

Another strength of this current study was its use of follow-up IDIs with some parents, school teachers, and school nurses who were participants in the FGDs. The IDIs provided additional in-depth information on the participants’ attitudes and beliefs towards school-based SRHE. The findings from the IDIs contributed to confirming the data from the FGDs. In addition, the triangulation of the data from multiple sources provided a comprehensive and a greater understanding of the research questions. The data triangulation added credibility and confidence to the study’s findings (Creswell & Miller, 2000; Creswell, 2014). For example, the triangulated convergent and divergent findings from each participant (parents, school teachers, school nurses) confirmed that the themes that emerged from the FGDs and the IDIs represented a comprehensive
and accurate picture of the participants’ views (Creswell, 2014). Moreover, the triangulation of the themes from Phase one, with the quantitative results from Phase two (parental survey) ensured the quality of the research findings.

Finally, another major strength of this current study was the use of SCT to provide plausible explanations and in-depth understanding of the research phenomena. The use of the SCT assisted in understanding the implementation of school-based SRHE programs based on three factors (personal, behavioural and environmental), which were not covered in other theoretical frameworks. It was useful in understanding cultural and religious influences in implementing these programs in Omani schools.

9.5 Implications for School SRHE Programs

The findings of this current study hold implications for future efforts to change policy and implement sustainable school-based SRHE programs for adolescents. The strong parental support that was revealed can assist school curriculum decision-makers, classroom teachers, school administrators, school healthcare-providers, policy-makers, law-makers and researchers in Oman and other Muslim countries. Furthermore, the results of this current study can facilitate implementing SRHE programs globally in countries with Muslim immigrant populations. Other communities may replicate a similar study to document parental support for SRHE in their community.

Use of this data could also help to improve adolescent academic achievements in Oman and other Middle Eastern countries. Sexual and reproductive health education needs to be introduced in the schools coinciding with critical periods of adolescent development (Kirby et al., 2011). Informing school curriculum decision-makers of parental support for school-based SRHE programs coupled with evidence-based information about the contents and cultural structures of these programs is an important strategy in successfully adopting the UNESCO (2018) guidelines.
and designing these programs to support adolescent well-being. In addition, this current study suggests that schools and the media can work to develop more positive public views towards school-based education on safe sex and birth control.

9.6 Recommendations

This current study provides valuable recommendations for the Oman MOE, the Oman MOH, policy-makers, and law-makers for effective implementation of school-based SRHE programs. One of these important recommendations identified in this current study is the provision of SRHE training courses and workshops for parents, school teachers, and school nurses through the Oman MOE and Oman MOH before delivering SRHE for students. The current study also identified a need for continuing SRHE training to increase the quality of school-based SRHE programs and to maintain its effectiveness in improving adolescent sexual and reproductive health and well-being. Ongoing well-structured SRHE training courses including packages, lectures and workshops for parents, school teachers, and school nurses that aim to increase their sexual communication skills and to enable them to conduct high quality, accurate and age-appropriate comprehensive SRHE—including topics perceived as controversial in Middle Eastern culture, such as birth control and safe sex—is recommended. In addition, the ongoing SRHE training should be based on the SCT and utilise optimal learning approaches to ensure participation, comprehension, and understanding. It should enable parents, school teachers, and school nurses to understand the emotional, psychological dimensions of adolescent development and to consider the cultural and religious issues associated with school-based SRHE.

Another important recommendation that was identified in this study, is that members from the Oman MOE and Oman MOH (including curriculum decision-makers, school healthcare-providers, and school administrators), policy-makers and law-makers should develop and implement a standard set of clear and organised SRHE policies and guidelines in schools in order
to implement effective school-based SRHE programs. Prior to implementation, the Oman MOE and Oman MOH must make sure that SRHE educators are aware of their existence and are familiar with the purpose and intent of the SRHE policies and procedures. Policies should focus on teamwork and creating effective school environments for the provision of school-based SRHE programs. This current study also identified other recommendations for the Oman MOH, the Oman MOE, policy-makers and law-makers such as:

1. Conduct dissemination meetings to share this study’s findings with the school policy-makers from the Oman MOE and Oman MOH and law-makers. The dissemination should focus on the implications of the findings for changing school policy and implementing school-based SRHE programs.

2. Include Islamic religious leaders and members of the Oman Ministry of Endowments and Religious Affairs in the dissemination meetings. Not only will their presence increase parental support for school-based SRHE programs, but it will also reassure parents that SRHE is compatible with Islam.

3. Disseminate the study’s findings internationally, via presentations and publications.

4. Increase public awareness about parental support and the importance of school-based SRHE programs through the Oman MOE and the Oman MOH. The purpose of this recommendation is to increase support and reduce opposition and socio-cultural taboo towards implementing these programs. The Oman MOE and Oman MOH can make this awareness through social media, TV programs and their websites.

5. Report the cases of child sexual abuse, HIV, STIs, and teenage pregnancies and use the statistics as advocacy tools to support the introduction of school-based SRHE programs.

6. Conduct national surveys to assess parental and community opposition.
7. Deliver a comprehensive age-appropriate school-based SRHE curriculum including topics of condom use and birth control methods.

8. Cover information about personal safety to prevent child sexual and basic information about the components of the reproductive systems in primary school curriculums.

9. Cover the information of puberty, menstruation, STIs, HIV, abstinence, birth control methods, condom use, teenage pregnancy, masturbation, nocturnal emissions and homosexuality in secondary school curriculums.

10. Cover complex sexual health information about STIs, birth control methods and safe sex practices in high school.

11. Align school-based SRHE curriculum with Islamic beliefs and culture.

12. Involve Islamic teachers or religious leaders when designing the contents of SRHE curriculums.

13. Involve the Oman Ministry of Endowments and Religious Affairs to approve the contents of the SRHE programs according to Islamic beliefs.

14. Conduct SRHE programs using multiple teaching methods, such as lectures, books, stories, videos, and educational CDs.

15. Allocate sufficient time for school teachers and school nurses to conduct school-based SRHE programs.

16. Consider the issue of discussing sexual matters with opposite genders. For example, the Oman MOE and Oman MOH should provide SRHE training for female school nurses to conduct SRHE for male students or should assign male school nurses to boys’ schools.

17. Share the responsibility of school-based SRHE programs with family (parents).
18. The Oman MOH and the Oman MOE should provide workshops for parents on how to discuss sexual matters with their adolescents to ease shyness and discomfort. This will erode the issue of the lack of parent-adolescent sexual communication in Oman.

19. Develop a hotline number to help answer the adolescents’ sexual health inquiries.

20. The Oman MOH should dedicate a section of their website to SRHE.

This current study also recommends the need for an ongoing evaluation process of the effectiveness of the school-based SRHE programs. Such evaluation is important for first time implementation of these programs in Islamic settings. This process should evaluate SRHE educators’ (including parents, school teachers, and school nurses) understanding of the curriculum’s contents and students’ feedback about the SRHE that they receive. This current study also suggests building a comprehensive database of cultural and religious knowledge in relation to SRHE programs. These materials should be made available to SRHE educators, who are often unaware of such resources. Furthermore, this current study recommends developing resources to support self-directed learning that can be easily accessed by SRHE educators to meet their changing needs.

9.7 Future research

The following recommendations are made for future research:

1. This mixed-method study investigated the attitudes, facilitators and barriers of parents, school teachers, and female school nurses towards implementing school-based SRHE programs in Oman. Future qualitative and quantitative research is recommended to explore the attitudes and beliefs of male and female adolescents as well as male school nurses towards these programs in Oman. The adolescents’ views are important because they are able to judge the need for school-based SRHE and express their feelings and preferences about the contents of SRHE curriculums. In addition, male school nurses
may have different attitudes towards school-based SRHE programs compared to female school nurses and therefore, their views need to be explored for effective implementation of these programs in Oman.

2. Further qualitative research should be conducted to explore the attitudes of school physicians, school social specialists, school managers, policy-makers and law-makers towards school-based SRHE programs.

3. This current study used a relatively small sample size of two schools and was limited to the attitudes of educated parents. Further research is needed using more public schools and parents with a lower level of education.

4. In this current study, time and cost restrictions ruled out probability sampling approaches. The sample size of Phase one and Phase two was limited solely to convenience sampling. Further quantitative research should be conducted using probability sampling approaches to support the findings of this current study.

5. The results of this current study were limited to parents with children in grades 7 to 9 (students aged 12 to 14 years) and thus, the attitudes of parents with younger and older students towards SRHE programs is unknown. Future research is needed to investigate the attitudes and beliefs of parents with children in primary school (grades 1-4) or high school (grades 11-12).

6. The survey of Phase two (quantitative) was designed only for parents. Some school teachers and school nurses may be uncomfortable sharing their thoughts using FGDs. Appropriate surveys, designed to explore the attitudes and beliefs of school teachers and school nurses towards implementing school-based SRHE programs in Middle Eastern countries should be developed and validated.
7. Further qualitative studies on the attitudes and barriers of parents, teachers, and school nurses towards implementing school-based SRHE covering birth control and safe sex will help strengthen the findings of this current study and provide additional guidance and support to school administrators, school healthcare-providers, and teachers when designing future SRHE curriculums.

8. Further quantitative and qualitative studies should be conducted to examine the barriers of parent-adolescent sexual communication in Middle Eastern countries. These studies will help to support the findings of this current study and assist parents to provide effective SRHE for their children at home.

9. This current study was based on the SCT. Further qualitative studies based on other cultural theoretical frameworks will help to provide more in-depth information about cultural issues associated with the implementation of school-based SRHE programs.

10. Development of a standardised survey [appropriate for the Omani culture and Islam] that taps into critical issues associated with content and implementation of school-based SRHE programs.

11. Development of standardised evaluation tools that ensure that any school-based SRHE programs that are developed and implemented is effective both in terms of benefits to the Omani society and cost-effective in terms of implementation.

12. After the implementation of school-based SRHE programs, research should be conducted to measure the outcomes of these programs in improving adolescent sexual and reproductive health knowledge and reducing the rate of HIV, STIs, and teenage pregnancy. The data can be used as an advocacy tool to support the maintenance of these programs.
13. Develop studies to assess the benefits of evidence-based online sources and websites to educate adolescents and parents about sexual health matters.

9.8 Conclusion

The final chapter presented an overview of the study, a summary of the findings and a discussion of the study’s strengths. Recommendations and future research were also highlighted. Currently, in Oman, there are no comprehensive school-based SRHE programs. Nevertheless, due to the exposure of Middle Eastern adolescents to sexual health ideas and dialogues through social media technologies, implementing an adolescent school-based SRHE program is gaining priority among Middle East healthcare providers and educators—including Oman. This current study contributes information on school-based sexuality education programs and provides first-time baseline data regarding parental support towards the provision of school-based SRHE programs in Oman.

The results from this current study play an important role in creating SRHE policy for the design and implementation of these programs in Oman and potentially other Muslim countries in the Middle East. The long-term social and behavioural outcome is adolescents having sexual and reproductive health knowledge delivered in a credible and supportive environment. It is hoped that this will contribute to the reduction of risky sexual behaviours among adolescents and therefore, reductions in the prevalence of HIV, STIs, and adolescent pregnancy. The Oman MOH, Oman MOE, policy-makers and law-makers should consider the results and recommendations of this current study for effective implementation of school-based programs in Oman. They should also consider the taboos and cultural issues associated with the implementation of these programs and use the results of this current study as a guide to overcoming these issues. More importantly, they should consider a wide range of SRHE topics and ensure that the contents of the SRHE curriculum
conform to Islamic beliefs. In addition, they should recognise the need for SRHE training and SRHE polices.
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Appendix A:

Invitation to Participate in a Research Project

Invitation Letter

Parents

Group Discussions

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This research is supervised by Professor Eleanor Holroyd from School of Health Sciences and Dr. Margaret Heffernan from School of Business and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Should you agree to participate, we would ask you to attend a small group discussion with other parents lasting about 60-90 minutes, so that we can get a more detailed picture of current situation and what improvements could be made. During the group discussion, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman. With your permission, the group discussion sessions would be tape-recorded (Audio Only) so that we can ensure that we make an accurate record of what you say. You (the participant) have the right to request that recording cease at any stage during the interview. The group discussions will be conducted in separated gender groups in a private room at a convenient location to you.

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. I can assure you that any data or information supplied will be treated in complete confidence. Your participation in this research is totally voluntary and you may withdraw from this interview at any time.

The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. The findings from this study may be presented at conferences or published in scientific journals and will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. A summary of the research findings will be made available to all participants who require it.
The research project is subject to the Ethics policy of RMIT University and any enquiries or concerns about the project can be directed to Mr. Omar Alzaabi, School of Health Sciences, RMIT University: phone number:

I very much appreciate your support

Yours faithfully,

Omar Alzaabi
PhD Student, School of Health Sciences, RMIT University
MANP, DN, BSN, RN

Professor Eleanor Holroyd
School of Health Sciences, RMIT University

Dr. Margaret Heffernan
School of Business, RMIT University
Appendix A:

Invitation to Participate in a Research Project
Project Information Statement
Parents
Group Discussions

Project Title:
Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based sexual and Reproductive Health Education Programs in Oman

Investigators:
Professor Eleanor Holroyd
School of Health Sciences, RMIT University

Dr. Margaret Heffernan
School of Business, RMIT University

Mr. Omar Alzaabi (PhD Candidate)
School of Health Sciences, RMIT University

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.
Who is involved in this research project? Why is it being conducted?

The following members are involved in this research project:

1. Omar Alzaabi is the principal research student of this project. He is a PhD candidate at School of Health Sciences, RMIT University, Australia.

2. Professor Eleanor Holroyd from School of Health Sciences, RMIT University, Australia is the chief investigator of this research project.

3. Dr. Margaret Heffernan from School of Business, RMIT University is the co-investigator of this research project.

This study seeks to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based SRHE programs in Oman. This project will form part of Mr. Omar Alzaabi PhD thesis, and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Why have you been approached?

We are approaching parents (mothers and fathers). Are you:

- Omani male or female parent who has one or more children studying in public pre-secondary schools grade 7-9.
- Literate in Arabic language.

Your contact details were obtained from the school administration.

What is the project about? What are the questions being addressed?

This study aims to examine what you think, feel and understand about school-based SRHE programs in Oman. The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. Primary Research Questions:

1. What are parents’, teachers’ and female school nurses’ beliefs and attitudes regarding school-based SRHE programs in Oman?
2. What are the current barriers and facilitators to provision of school-based SRHE programs in Oman?

If I agree to participate, what will I be required to do?

Should you agree to participate, we would ask you to attend a small group discussion with other parents lasting about 60-90 minutes, so that we can get a more detailed picture of current situation and what improvements could be made. During the group discussion, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman. With your permission, the group discussion sessions would be tape-recorded (Audio Only) so that we can ensure that we make an accurate record of what you say. You (the participant) have the right to request that
recording cease at any stage during the interview. You may choose not to answer any particular question. The group discussions will be conducted in separated gender groups in a private room at a convenient location to you.

What are the risks or disadvantages associated with participation?

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. If you feel concerned about your responses to any of the group discussion questions or if you find participating in the project distressing in any way, you should contact Mr. Omar Alzaabi as soon as convenient that you either want to strike that discussion from the record or discontinue the interview. Additionally, you can contact health professional counsellor at Saham hospital at (phone number ). Please note that loss of anonymity will occur for group discussion participants and all participants are asked to keep names of participants and their contributions confidential. Mr. Omar Alzaabi will discuss your concerns with you confidentially and suggest appropriate follow-up if necessary.

What are the benefits associated with participation?

While there are no direct benefits for participating in this study, your participation will assist to:

- Increase the knowledge of Omani adolescents’ reproductive health and school health needs.
- To inform policy and public health/education service for the design and implementation of school-based SRHE programs in Oman in order to improve the reproductive health behaviours and quality of life of Omani adolescents, and support Omani parents with adolescent development.

Therefore, your contribution is very important. Participating in the interview is a valuable opportunity for you to express your feelings and beliefs regarding school-based SRHE programs in Oman. Outcome of the research will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. The researcher is happy to make available to you, the participant, any results, papers, and other outcomes from this research.

What will happen to the information I provide?

Your anonymity and confidentiality as participants and your contributions will be protected by: ensuring that participant names do not appear on any documentation; restricting access to collected data by the researcher and supervisors only; and ensuring that data is de-identified for anonymity prior to sharing results with others. All information obtained from group discussion will be used for research purposes only, and will be stored in a locked filing cabinet in my office at the university and password-protected computer for a period of five years as prescribed by RMIT University regulations. A USB storage device will be used to back-up study data, and stored in a secure place. The findings from this study may be presented at conferences or published in scientific journals. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. If you have any questions or concerns about this interview, please feel free to contact any of the investigators; their contact information is provided above.
What are my rights as a participant?

As a participant, you have the right to:
- Withdraw your participation at any time, without prejudice.
- Have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for you.
- Have any questions about the interview answered at any time.
- Have time to discuss off-topic issues after concluding the interview.
- Choose not to answer any of the interview questions.
- Request that audio recording be terminated at any stage during the interview.

Whom should I contact if I have any questions?

If you have any questions or would like to receive a copy of the summary of findings of this research please contact Mr. Omar Alzaabi, phone number:

What other issues should I be aware of before deciding whether to participate?

The main constraints in this study are the interview time, which is expected to last for 60-90 minutes. However the researcher is ready to discuss with participants the most convenient time in his/her busy schedule and the participants hold the right to withdraw or to re-schedule the interview if anything came up before the interview time.

Thank you very much for your contribution to this research.

Yours sincerely,

Mr. Omar Alzaabi, PhD Candidate, School of Health Sciences, RMIT University
Principal Researcher
Signature:...........................................

Professor Eleanor Holroyd, PhD, School of Health Sciences, RMIT University
Primary Research Supervisor
Signature: ............................................

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University,

Details of the complaints procedure are available on the ‘Complaints with respect to participation in research at RMIT’ page: http://www.rmit.edu.au/research/human

This information sheet is yours to keep
Appendix A:

Consent Forms
Parents’ Group Discussions

School of
Health science

Name of participant:

Project Title:
Abilities and Beliefs of Parents,
Teachers and School Nurses
Regarding School-Based Sexual and
Reproductive Health Education
Programs in Oman

Name(s) of investigators:

1) Mr. Omar Alzaabi
2) Prof. Eleanor Holroyd

1. I have had the project explained to me, and I have read the information sheet.
2. I agree to participate in the research project as described.
3. I authorise the investigator or his or her assistant to interview me.
4. I give my permission to be audio taped: Yes No
5. I acknowledge that:
   (a) I understand that my participation is voluntary and that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
   (b) The project is for the purpose of research. It may not be of direct benefit to me.
   (c) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (d) The security of the research data will be protected during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to RMIT University. Any information, which will identify me, will not be used.

Participant’s Consent

Participant: ___________________________ Date: _______________
(Signature)

Witness:

Witness: ___________________________ Date: _______________
(Signature)

Participants should be given a photocopy of this PICF after it has been signed.
Appendix A:

Invitation to Participate in a Research Project
Invitation Letter
Teachers
Group Discussions

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This research is supervised by Professor Eleanor Holroyd from School of Health Sciences and Dr. Margaret Heffernan from School of Business and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Should you agree to participate, we would ask you to attend a small group discussion with other Islamic or sciences teachers lasting about 60-90 minutes, so that we can get a more detailed picture of current situation and what improvements could be made. During the group discussion, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman. With your permission, the group discussion sessions would be tape-recorded (Audio Only) so that we can ensure that we make an accurate record of what you say. You (the participant) have the right to request that recording cease at any stage during the interview. The group discussions will be conducted in separated gender groups in a private room at a convenient location to you.

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. I can assure you that any data or information supplied will be treated in complete confidence. Your participation in this research is totally voluntary and you may withdraw from this interview at any time.

The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. The findings from this study may be presented at conferences or published in scientific journals and will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. A summary of the research findings will be made available to all participants who require it.
The research project is subject to the Ethics policy of RMIT University and any enquiries or concerns about the project can be directed to Mr. Omar Alzaabi, School of Health Sciences, RMIT University: phone number:

I very much appreciate your support

Yours faithfully,

Omar Alzaabi
PhD Student, School of Health Sciences, RMIT University
MANP, DN, BSN, RN

Professor Eleanor Holroyd
School of Health Sciences, RMIT University

Dr. Margaret Heffernan
School of Business, RMIT University
Appendix A:

Invitation to Participate in a Research Project

Project Information Statement

Teacher
Group Discussions

Project Title:
Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based Sexual and Reproductive Health Education Programs in Oman

Investigators:
Professor Eleanor Holroyd
School of Health Sciences, RMIT University

Dr. Margaret Heffernan
School of Business, RMIT University

Mr. Omar Alzaabi (PhD Candidate)
School of Health Sciences, RMIT University

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.
Who is involved in this research project? Why is it being conducted?

The following members are involved in this research project:

4. Omar Alzaabi is the principal research student of this project. He is a PhD candidate at School of Health Sciences, RMIT University, Australia.

5. Professor Eleanor Holroyd from School of Health Sciences, RMIT University, Australia is the chief investigator of this research project.

6. Dr. Margaret Heffernan from School of Business, RMIT University is the co-investigator of this research project.

This study seeks to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based SRHE programs in Oman. This project will form part of Mr. Omar Alzaabi PhD thesis, and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Why have you been approached?

We are approaching teacher (male and female). Are you:

- Omani male or female Islamic and sciences teacher who teach students in public pre-secondary grade 7-9 with two years of teaching experience.
- Literate in Arabic language.

Your contact details were obtained from the school administration.

What is the project about? What are the questions being addressed?

This study aims to examine what you think, feel and understand about school-based SRHE programs in Oman. The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. Primary Research Questions:

3. What are parents’, teachers’ and female school nurses beliefs and attitudes regarding school-based SRHE programs in Oman?
4. What are the current barriers and facilitators to provision of school-based SRHE programs in Oman?

If I agree to participate, what will I be required to do?

Should you agree to participate, we would ask you to attend a small group discussion with other Islamic or sciences teachers lasting about 60-90 minutes, so that we can get a more detailed picture of current situation and what improvements could be made. During the group discussion, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman. With your permission, the group discussion sessions would be tape-recorded (Audio Only) so that we can ensure that we make an accurate record of what you say. You (the participant) have the right
to request that recording cease at any stage during the interview. You may choose not to answer any particular question. The group discussions will be conducted in separated gender groups in a private room at a convenient location to you.

**What are the risks or disadvantages associated with participation?**

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. If you feel concerned about your responses to any of the group discussion questions or if you find participating in the project distressing in any way, you should contact Mr. Omar Alzaabi as soon as convenient that you either want to strike that discussion from the record or discontinue the interview. Additionally, you can contact health professional counsellor at Saham hospital at (phone number: ). Please note that loss of anonymity will occur for group discussion participants and all participants are asked to keep names of participants and their contributions confidential. Mr. Omar Alzaabi will discuss your concerns with you confidentially and suggest appropriate follow-up if necessary.

**What are the benefits associated with participation?**

While there are no direct benefits for participating in this study, your participation will assist to:

- Increase the knowledge of Omani adolescents’ reproductive health and school health needs.
- To inform policy and public health/education service for the design and implementation of school-based SRHE programs in Oman in order to improve the reproductive health behaviours and quality of life of Omani adolescents, and support Omani parents with adolescent development.

Therefore, your contribution is very important. Participating in the interview is a valuable opportunity for you to express your feelings and beliefs regarding school-based SRHE programs in Oman. Outcome of the research will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. The researcher is happy to make available to you, the participant, any results, papers, and other outcomes from this research.

**What will happen to the information I provide?**

Your anonymity and confidentiality as participants and your contributions will be protected by: ensuring that participant names do not appear on any documentation; restricting access to collected data by the researcher and supervisors only; and ensuring that data is de-identified for anonymity prior to sharing results with others. All information obtained from group discussion will be used for research purposes only, and will be stored in a locked filing cabinet in my office at the university and password-protected computer for a period of five years as prescribed by RMIT University regulations. A USB storage device will be used to back-up study data, and stored in a secure place. The findings from this study may be presented at conferences or published in scientific journals. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. If you have any questions or concerns about this interview, please feel free to contact any of the investigators; their contact information is provided above.
What are my rights as a participant?

As a participant, you have the right to:

• Withdraw your participation at any time, without prejudice.
• Have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for you.
• Have any questions about the interview answered at any time.
• Have time to discuss off-topic issues after concluding the interview.
• Choose not to answer any of the interview questions.
• Request that audio recording be terminated at any stage during the interview.

Whom should I contact if I have any questions?

If you have any questions or would like to receive a copy of the summary of findings of this research please contact Mr. Omar Alzaabi, phone number:

What other issues should I be aware of before deciding whether to participate?

The main constraints in this study are the interview time, which is expected to last for 60-90 minutes. However the researcher is ready to discuss with participants the most convenient time in his/her busy schedule and the participants hold the right to withdraw or to re-schedule the interview if anything came up before the interview time.

Thank you very much for your contribution to this research.
Yours sincerely,

Mr. Omar Alzaabi, PhD Candidate, School of Health Sciences, RMIT University
Principal Researcher
Signature:..............................................

Professor Eleanor Holroyd, PhD, School of Health Sciences, RMIT University
Primary Research Supervisor
Signature: ...................................................

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University,

Details of the complaints procedure are available on the ‘Complaints with respect to participation in research at RMIT’ page: http://www.rmit.edu.au/research/human

This information sheet is yours to keep
Appendix A:

Consent Forms
Teachers’ Group Discussions

School of Health science
Name of participant:
Project Title: Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based Sexual and Reproductive Health Education Programs in Oman

Name(s) of investigators:
1) Mr. Omar Alzaabi
2) Prof. Eleanor Holroyd

1. I have had the project explained to me, and I have read the information sheet.
2. I agree to participate in the research project as described.
3. I authorise the investigator or his or her assistant to interview me.
4. I give my permission to be audio taped: Yes No
5. I acknowledge that:
   (a) I understand that my participation is voluntary and that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
   (b) The project is for the purpose of research. It may not be of direct benefit to me.
   (c) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (d) The security of the research data will be protected during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to RMIT University. Any information, which will identify me, will not be used.

Participant’s Consent

Participant: ___________________________ Date: ________________
(Signature)

Witness:

Witness: ___________________________ Date: ________________
(Signature)

Participants should be given a photocopy of this PICF after it has been signed.
Appendix A:

Invitation to Participate in a Research Project
Invitation Letter
School Nurses
Group Discussions

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This research is supervised by Professor Eleanor Holroyd from School of Health Sciences and Dr. Margaret Heffernan from School of Business and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Should you agree to participate, we would ask you to attend a small group discussion with other female school nurses lasting about 60-90 minutes, so that we can get a more detailed picture of current situation and what improvements could be made. During the group discussion, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman. With your permission, the group discussion sessions would be tape-recorded (Audio Only) so that we can ensure that we make an accurate record of what you say. You (the participant) have the right to request that recording cease at any stage during the interview. The group discussions will be conducted in separated gender groups in a private room at a convenient location to you.

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. I can assure you that any data or information supplied will be treated in complete confidence. Your participation in this research is totally voluntary and you may withdraw from this interview at any time.

The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. The findings from this study may be presented at conferences or published in scientific journals and will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. A summary of the research findings will be made available to all participants who require it.
The research project is subject to the Ethics policy of RMIT University and any enquiries or concerns about the project can be directed to Mr. Omar Alzaabi, School of Health Sciences, RMIT University: phone number:

I very much appreciate your support

Yours faithfully,

Omar Alzaabi
PhD Student, School of Health Sciences, RMIT University
MANP, DN, BSN, RN

Professor Eleanor Holroyd
School of Health Sciences, RMIT University

Dr. Margaret Heffernan
School of Business, RMIT University
Appendix A:

Invitation to Participate in a Research Project

Project Information Statement

School Nurses
Group Discussions

Project Title:

Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based Sexual and Reproductive Health Education Programs in Oman

Investigators:

Professor Eleanor Holroyd
School of Health Sciences, RMIT University

Dr. Margaret Heffernan
School of Business, RMIT University

Mr. Omar Alzaabi (PhD Candidate)
School of Health Sciences, RMIT University

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.
Who is involved in this research project? Why is it being conducted?

The following members are involved in this research project:

7. Omar Alzaabi is the principal research student of this project. He is a PhD candidate at School of Health Sciences, RMIT University, Australia.

8. Professor Eleanor Holroyd from School of Health Sciences, RMIT University, Australia is the chief investigator of this research project.

9. Dr. Margaret Heffernan from School of Business, RMIT University is the co-investigator of this research project.

This study seeks to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based SRHE programs in Oman. This project will form part of Mr. Omar Alzaabi PhD thesis, and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Why have you been approached?

We are approaching female school nurses. Are you:

- Female school nurses working in public pre-secondary schools grade 5-10 with two years of working experience.
- Literate in Arabic language.

Your contact details were obtained from the school administration.

What is the project about? What are the questions being addressed?

This study aims to examine what you think, feel and understand about school-based SRHE programs in Oman. The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. Primary Research Questions:

5. What are parents’, teachers’ and female school nurses beliefs and attitudes regarding school-based SRHE programs in Oman?
6. What are the current barriers and facilitators to provision of school-based SRHE programs in Oman?

If I agree to participate, what will I be required to do?

Should you agree to participate, we would ask you to attend a small group discussion with other female school nurses lasting about 60-90 minutes, so that we can get a more detailed picture of current situation and what improvements could be made. During the group discussion, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman. With your permission, the group discussion sessions would be tape-recorded (Audio Only) so that we can ensure that we make an accurate record of what you say. You (the participant) have the right to
request that recording cease at any stage during the interview. You may choose not to answer any particular question. The group discussions will be conducted in separated gender groups in a private room at a convenient location to you.

**What are the risks or disadvantages associated with participation?**

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. If you feel concerned about your responses to any of the group discussion questions or if you find participating in the project distressing in any way, you should contact Mr. Omar Alzaabi as soon as convenient that you either want to strike that discussion from the record or discontinue the interview. Additionally, you can contact health professional counsellor at Saham hospital at (phone number: ). Please note that loss of anonymity will occur for group discussion participants and all participants are asked to keep names of participants and their contributions confidential. Mr. Omar Alzaabi will discuss your concerns with you confidentially and suggest appropriate follow-up if necessary.

**What are the benefits associated with participation?**

While there are no direct benefits for participating in this study, your participation will assist to:

- Increase the knowledge of Omani adolescents’ reproductive health and school health needs.
- To inform policy and public health/education service for the design and implementation of school-based SRHE programs in Oman in order to improve the reproductive health behaviours and quality of life of Omani adolescents, and support Omani parents with adolescent development.

Therefore, your contribution is very important. Participating in the interview is a valuable opportunity for you to express your feelings and beliefs regarding school-based SRHE programs in Oman. Outcome of the research will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. The researcher is happy to make available to you, the participant, any results, papers, and other outcomes from this research.

**What will happen to the information I provide?**

Your anonymity and confidentiality as participants and your contributions will be protected by: ensuring that participant names do not appear on any documentation; restricting access to collected data by the researcher and supervisors only; and ensuring that data is de-identified for anonymity prior to sharing results with others. All information obtained from group discussion will be used for research purposes only, and will be stored in a locked filing cabinet in my office at the university and password-protected computer for a period of five years as prescribed by RMIT University regulations. A USB storage device will be used to back-up study data, and stored in a secure place. The findings from this study may be presented at conferences or published in scientific journals. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. If you have any questions or concerns about this interview, please feel free to contact any of the investigators; their contact information is provided above.
**What are my rights as a participant?**

As a participant, you have the right to:

- Withdraw your participation at any time, without prejudice.
- Have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for you.
- Have any questions about the interview answered at any time.
- Have time to discuss off-topic issues after concluding the interview.
- Choose not to answer any of the interview questions.
- Request that audio recording be terminated at any stage during the interview.

**Whom should I contact if I have any questions?**

If you have any questions or would like to receive a copy of the summary of findings of this research please contact Mr. Omar Alzaabi, phone number

**What other issues should I be aware of before deciding whether to participate?**

The main constraints in this study are the interview time, which is expected to last for 60-90 minutes. However, the researcher is ready to discuss with participants the most convenient time in his/her busy schedule and the participants hold the right to withdraw or to re-schedule the interview if anything came up before the interview time.

Thank you very much for your contribution to this research.

Yours sincerely,

Mr. Omar Alzaabi, PhD Candidate, School of Health Sciences, RMIT University
Principal Researcher
Signature:………………………………..

Professor Eleanor Holroyd, PhD, School of Health Sciences, RMIT University
Primary Research Supervisor
Signature: ………………………………………..

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University,

Details of the complaints procedure are available on the ‘Complaints with respect to participation in research at RMIT’ page: [http://www.rmit.edu.au/research/human](http://www.rmit.edu.au/research/human)

**This information sheet is yours to keep**
Appendix A:

Consent Forms
School Nurses’ Group Discussions

School of: Health science
Name of participant: 
Project Title: Attitudes and Beliefs of Parents,
Teachers and School Nurses
Regarding School-Based Sexual and
Reproductive Health Education
Programs in Oman

Name(s) of investigators:
1) Mr. Omar Alzaabi
2) Prof. Eleanor Holroyd

1. I have had the project explained to me, and I have read the information sheet.
2. I agree to participate in the research project as described.
3. I authorise the investigator or his or her assistant to interview me.
4. I give my permission to be audio taped: Yes No
5. I acknowledge that:

(a) I understand that my participation is voluntary and that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
(b) The project is for the purpose of research. It may not be of direct benefit to me.
(a) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
(b) The security of the research data will be protected during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to RMIT University. Any information, which will identify me, will not be used.

Participant’s Consent

Participant: ______________________________ Date: ________________
(Signature)

Witness:

Witness: ______________________________ Date: ________________
(Signature)

Participants should be given a photocopy of this PICF after it has been signed.
Appendix B: Participants’ Demographic Data Form Parents’ Focus Group Discussion

Thank you for indicating you are willing to participate in the study regarding your attitudes and beliefs towards school-based sexual and reproductive health education programs in Oman. Please answer the following questions which will be kept confidential and not used for any other purpose. Circle the category that best describes your situation.

1) **What is your education level?**
   - Primary school
   - High school
   - University/Undergraduate Diploma degree
   - University/Undergraduate Bachelor degree
   - University/Postgraduate degree
   - Others

2) **How many children you have studying in grade 7-9?**
   - One
   - Two
   - More than two

3) **What is your child/children gender studying in grade 7-9?**
   - Male
   - Female
   - Both male and female

4) **What is your monthly household income?**
   - Less than 500 Omani Rail
   - 500-1000 Omani Rail
   - Above 1000 Omani Rail

5) **What is your gender?**
   - Male
   - Female

6) **What is your age range?**
   - 20-29 years
   - 30-40 years
   - Above 40 years

Thank you for your participation
Appendix C:

Participants’ Demographic Data Form
Teachers’ Focus Group Discussion

Thank you for indicating you are willing to participate in the study regarding your attitudes and beliefs towards school-based sexual and reproductive health education programs in Oman. Please answer the following questions which will be kept confidential and not used for any other purpose. Circle the category that best describes your situation.

1) What is your teaching specialty?
   o Science teacher
   o Islamic teacher

2) What is your education level?
   o Primary school
   o High school
   o University/Undergraduate Diploma degree
   o University/Undergraduate Bachelor degree
   o University/Postgraduate degree
   o Others

3) How many years of experience have you worked as a teacher?
   o Two to four years
   o Five to 10 years
   o More than 10 years

4) Do you receive, or have you received training in sexual and reproductive health education for example?
   o Yes
   o No
   o If so state when and what quality

5) If you have received training in sexual and reproductive health education, how recently?
   o Less than one year
   o Two years
   o More than two years
6) Do you provide sexual and reproductive health education to students?
   - Yes
   - No

7) If you provide sexual and reproductive health education to students, how regularly?
   - Weekly
   - Monthly
   - Annually

8) What is your gender?
   - Male
   - Female

9) What is your age range?
   - 20-29 years
   - 30-40 years
   - Above 40 years

Thank you for your participation
Appendix D:

Participants’ Demographic Data Form
School Nurses’ Focus Group Discussion

Thank you for indicating you are willing to participate in the study regarding your attitudes and beliefs towards school-based sexual and reproductive health education programs in Oman. Please answer the following questions which will be kept confidential and not used for any other purpose. Circle the category that best describes your situation.

1) **What is your professional education level?**
   - Bachelor of Nursing
   - Diploma of Nursing
   - Other /Please state …………..

2) **How many years of experience have you worked as a school nurse?**
   - Two to four years
   - Five to 10 years
   - More than 10 years

3) **Do you receive, or have you received training in sexual and reproductive health education for example?**
   - Yes
   - No
   - If so state when and what quality

4) **If you have received training in sexual and reproductive health education, how recently?**
   - Less than one year
   - Two years
   - More than two years

5) **Do you provide sexual and reproductive health education to students?**
   - Yes
   - No

6) **If you provide sexual and reproductive health education to students, how regularly?**
   - Weekly
   - Monthly
   - Annually
7) **What is your gender?**
   - Male
   - Female

8) **What is your age range?**
   - 20-29 years
   - 30-40 years
   - Above 40 years

**Thank you for your participation**
Appendix E:

Invitation to Participate in a Research Project
Invitation Letter
Parents’ Survey

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This research is supervised by Professor Eleanor Holroyd from School of Health Sciences and Dr. Margaret Heffernan from School of Business and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Should you agree to participate, you would be asked to complete 15–20 minutes questionnaire. In the survey, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman.

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. I can assure you that any data or information supplied will be treated in complete confidence. Your participation in this research is totally voluntary and you may withdraw from this study at any time.

The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. The findings from this study may be presented at conferences or published in scientific journals and will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. A summary of the research findings will be made available to all participants who require it.
The research project is subject to the Ethics policy of RMIT University and any enquiries or concerns about the project can be directed to Mr. Omar Alzaabi, School of Health Sciences, RMIT University: phone number:

your support
Yours faithfully,

Omar Alzaabi, PhD Student, School of Health Sciences, RMIT University

Professor Eleanor Holroyd, School of Health Sciences, RMIT University

Dr. Margaret Heffernan, School of Business, RMIT University

I very much appreciate
Appendix E:

Invitation to Participate in a Research Project
Project Information Statement
Parents’ Survey

Project Title:
Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based sexual and Reproductive Health Education Programs in Oman

Investigators:
Professor Eleanor Holroyd
School of Health Sciences, RMIT University

Dr. Margaret Heffernan
School of Business, RMIT University

Mr. Omar Alzaabi (PhD Candidate)
School of Health Sciences, RMIT University

Dear Participant,

I am a PhD student in the School of Health Sciences, RMIT University, Australia. You are invited to participate in a research project being conducted by RMIT University, Melbourne Australia aiming to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health (SRHE) programs in Oman. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.
Who is involved in this research project? Why is it being conducted?

The following members are involved in this research project:

1. Omar Alzaabi is the principal research student of this project. He is a PhD candidate at School of Health Sciences, RMIT University, Australia.

2. Professor Eleanor Holroyd from School of Health Sciences, RMIT University, Australia is the chief investigator of this research project.

3. Dr. Margaret Heffernan from School of Business, RMIT University is the co-investigator of this research project.

This study seeks to examine the attitudes, and beliefs of parents, teachers and school nurses regarding school-based SRHE programs in Oman. This project will form part of Mr. Omar Alzaabi PhD thesis, and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education.

Why have you been approached?

We are approaching parents (mothers and fathers). Are you:

- Omani male or female parent who has one or more children studying in public pre-secondary schools grade 7-9.
- Literate in Arabic language.

Your contact details were obtained from the school administration.

What is the project about? What are the questions being addressed?

This study aims to examine what you think, feel and understand about school-based SRHE programs in Oman. The results of the information you provide will help to inform policy and public health/education service for the implementation of school-based SRHE programs in Oman to improve the health of Omani adolescents, and support Omani parents with adolescent development. Primary Research Questions:

1. What are parents’, teachers’ and female school nurses’ beliefs and attitudes regarding school-based SRHE programs in Oman?
2. What are the current barriers and facilitators to provision of school-based SRHE programs in Oman?

If I agree to participate, what will I be required to do?

Should you agree to participate, you would be asked to complete 15–20 minutes questionnaire. In the survey, you will be asked about your feelings and beliefs regarding school-based SRHE programs in Oman. Once completed kindly return the survey in attached enveloped with your adolescent or submit to the school administration. Informed consent is implied by submission
of the survey. You are encouraged to examine or browse through the questionnaire as it may aide in your decision to participate in the study. You may choose not to answer any particular question.

What are the risks or disadvantages associated with participation?

There are no direct risks or disadvantages involved in your participation in the present study. If any questions may cause you concern, you are free not to answer them. You will not be asked to provide any personal information and personal records. If you feel concerned about your responses to any of the questionnaire items or if you find participating in the project distressing in any way, you should contact Mr. Omar Alzaabi as soon as convenient. Additionally, you can contact health professional counsellor at Saham hospital at (phone number: ). Mr. Omar Alzaabi will discuss your concerns with you confidentially and suggest appropriate follow-up if necessary.

What are the benefits associated with participation?

While there are no direct benefits for participating in this study, your participation will assist to:
• Increase the knowledge of Omani adolescents’ reproductive health and school health needs.
• To inform policy and public health/education service for the design and implementation of school-based SRHE programs in Oman in order to improve the reproductive health behaviours and quality of life of Omani adolescents, and support Omani parents with adolescent development.

Therefore, your contribution is very important. Participating in the survey is a valuable opportunity for you to express your feelings and beliefs regarding school-based SRHE programs in Oman. Outcome of the research will be will be disseminated through Oman Ministry of Health and Oman Ministry of Education website. The researcher is happy to make available to you, the participant, any results, papers, and other outcomes from this research.

What will happen to the information I provide?

Your anonymity and confidentiality as participants and your contributions will be protected by: ensuring that participant names do not appear on any documentation; restricting access to collected data by the researcher and supervisors only; and ensuring that data is de-identified for anonymity prior to sharing results with others. All information obtained from survey will be used for research purposes only, and will be stored in a locked filing cabinet in my office at the university and password-protected computer for a period of five years as prescribed by RMIT University regulations. A USB storage device will be used to back-up study data, and stored in a secure. The findings from this study may be presented at conferences or published in scientific journals. Any outcomes from this research will be of a general nature without any details of specific participants disclosed. If you have any questions or concerns about the questionnaire items, please feel free to contact any of the investigators; their contact information is provided above.
What are my rights as a participant?

As a participant, you have the right to:

- Withdraw your participation at any time, without prejudice.
- Have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for you.
- Have any questions about the survey answered at any time.
- Choose not to answer any of the surveys’ questions.

Whom should I contact if I have any questions?

If you have any questions or would like to receive a copy of the summary of findings of this research please contact Mr. Omar Alzaabi, phone number:

Thank you very much for your contribution to this research.

Yours sincerely,

Mr. Omar Alzaabi, PhD Candidate, School of Health Sciences, RMIT University  
Principal Researcher  
Signature:………………………………..

Professor Eleanor Holroyd, PhD, School of Health Sciences, RMIT University  
Primary Research Supervisor  
Signature: ………………………………………..

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University,

Details of the complaints procedure are available on the ‘Complaints with respect to participation in research at RMIT’ page:  
http://www.rmit.edu.au/research/human

This information sheet is yours to keep
Appendix F:

WHO Semi-Structured Interview Questions

Parents’ Focus Group Discussion

1. In what ways might you see Omani adolescents finding introduction of classes on sexual and reproductive health issues useful? Why? Or why not (What problems or benefits might there be from sexual and reproductive health education?) (Smart Phone/Social Media)

2. When should sexual and reproductive health education be started? At what age?

3. Can you explain how should sexual and reproductive health education be approached? Which teaching methods do you think should be used?

4. Who should teach the classes? Why

5. What sexual and reproductive health issues do you think should be taught at school?

6. In what ways if at all do you discuss any matters related to sexual and reproductive health with your adolescents? If not why? Are there any barriers (religious, family norms or genders issues) that prevent you from delivering effective sexual and reproductive education to your adolescents? Can you explain about these please?

7. Do you think that sexual and reproductive health education can conflict with Islamic religion or family norms, beliefs and values? If yes why?

8. Whom or what are the most important sources of sexual information to adolescents?

9. How do see parents’ roles as sources of sexual and reproductive health information to adolescents in Oman?

10. Who or from where would you like to learn more about sexual and reproductive health issues?

Closing question: Do you have any other comments or remarks about the focus group questions?

Adapted from:

Appendix F:

WHO Semi-Structured Interview Questions

Teachers’ Focus Group Discussion

1. In what ways might you see Omani adolescents finding introduction of classes on sexual and reproductive health issues useful? Why? Or why not (What problems or benefits might there be from sexual and reproductive health education?) (Smart Phone/Social Media)
2. When should sexual and reproductive health education be started? At what age?
3. Can you explain how should sexual and reproductive health education be approached? Which teaching methods do you think should be used?
4. Who should teach the classes? Why
5. What sexual and reproductive health issues do you think should be taught at school?
6. In what ways if at all do you discuss any matters related to sexual and reproductive health with students? If not why? Are there any barriers (religious, family norms or genders issues) that prevent you from delivering effective sexual and reproductive health education in schools? Can you explain about these please?
7. Do you think that sexual and reproductive health education can conflict with Islamic religion or family norms, beliefs and values? If yes why?
8. Does the school policy support the school teachers carrying sexual and reproductive health education in schools? What are the challenges in this area?
9. Whom or what are the most important sources of sexual information to adolescents?
10. How do see teachers’ roles as sources of sexual and reproductive health information to adolescents in Oman?
11. Do you feel that you have enough knowledge and skills to enable you to be able to handle adolescent sexual and reproductive health problems? What training and support do you think is required?

Closing question: Do you have any other comments or remarks about the focus group questions?

Adapted from:
Appendix F:

WHO Semi-Structured Interview Questions

School Nurses’ Focus Group Discussion

1. In what ways might you see Omani adolescents finding introduction of classes on sexual and reproductive health issues useful? Why? Or why not (What problems or benefits might there be from sexual and reproductive health education?) (Smart Phone/Social Media)

2. When should sexual and reproductive health education be started? At what age?

3. Can you explain how should sexual and reproductive health education be approached? Which teaching methods do you think should be used?

4. Who should teach the classes? Why

5. What sexual and reproductive health issues do you think should be taught at school?

6. In what ways if at all do you discuss any matters related to sexual and reproductive health with students? If not why? Are there any barriers (religious, family norms or genders issues) that prevent you from delivering effective sexual and reproductive health education in schools? Can you explain about these please?

7. Do you think that sexual and reproductive health education can conflict with Islamic religion or family norms, beliefs and values? If Yes why?

8. Does the school policy support the school nurses carrying sexual and reproductive health education in schools? What are the challenges in this area?

9. Whom or what are the most important sources of sexual information to adolescents?

10. How do see school nurses’ roles as sources of sexual reproductive health information to adolescents in Oman?

11. Do you feel that you have enough knowledge and skills to enable you to be able to handle adolescent sexual and reproductive health problems? What training and support do you think is required?

Closing question: Do you have any other comments or remarks about the focus group questions?

Adapted from:

Appendix G:
Survey on Parents’ Attitudes and Beliefs Towards School-Based Sexual and Reproductive Health Education Programs in Oman

Dear Parent

The aim of this survey is to examine the attitudes, and beliefs of parents regarding school-based sexual and reproductive health education (SRHE) programs in Oman in collaboration with Oman Ministry of Education and RMIT University, Australia. This study will help to inform policy and public health/education service for the design and implementation of school-based SRHE programs in Oman and to improve the reproductive health behaviours and quality of life of adolescents, and support parents with adolescent development.

To assist us, we would like you to take a few minutes and fill out our questionnaire. It is important that you answer each question honestly. All the information you provide is confidential and anonymous, so please do NOT put your name on the survey. Once you have completed the questionnaire, please seal it in the envelope provided and send it back to school with your adolescent. Please complete only one questionnaire per family.

While completing our survey, please keep in mind that SRHE program is aim to improve adolescents’ reproductive health and prevent reproductive health problems such as unintended pregnancy, AIDS/STIs and other sexually transmitted diseases, or sexual exploitation. The curriculum tries to accomplish this by providing students in each grade with reproductive health information that that is appropriate for their age and developmental level and builds on the information they received in previous years.

We appreciate your participation. The information we receive will help us to better understand how parents feel about reproductive health education. If you have any questions about the survey, please contact Mr. Omar Ali Alzaabi, PhD student RMIT University Australia

Thank you for your help
Survey on Parents’ Attitudes and Beliefs Towards School-Based Sexual and Reproductive Health Education Programs in Oman

Part A. We are interested in your general feelings about School-Based SRHE programs. For each of the following questions, please mark the ONE response that best describes your opinion.

A1. Sexual and reproductive health education should be provided in the schools.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

A2. Sexual and reproductive health education should be matched/link with Islamic rules and regulations.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

A3. The school and parents should share responsibility for providing adolescents with sexual and reproductive health education.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

A4. Sexual and reproductive health education that is appropriate for adolescents’ age and developmental level should start in:
   - Grades 1-4
   - Grades 5-10
   - Grades 11-12
   - There should be no sexual and reproductive health education in schools
A5. Overall, please rate the quality of the sexual and reproductive health education that your adolescent/adolescents has/have received in your school.

- Excellent
- Very Good
- Good
- Fair
- Poor
- Don’t know
- My adolescent/adolescents has/have not received any sexual and reproductive health education.

A6. The following are sources of sexual and reproductive health information. Please indicate how important each source. For each source below, please mark the option/number that best represents your opinion.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>School Nurses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>School teachers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Friends/Peers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Religious leaders</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Media (Internet, magazines videos, movies)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**Part B.** There are many topics that could be covered in the sexual and reproductive health curriculum. We would like to know how important you feel it is for each of the following topics to be covered in the sexual and reproductive health education curriculum. For each topic below, please mark the option/number that best represents your opinion.

<table>
<thead>
<tr>
<th>Topics</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components of reproductive systems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Puberty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Reproduction</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Birth control methods &amp; safer sex practices</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>HIV/AIDS and others sexually transmitted diseases</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Abstinence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Personal Safety (to prevent child sexual abuse)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sexual Decision-making skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
**Part C.** Below is a list of sexual and reproductive health education topics that could be covered in the classroom. For each topic, put a check mark indicating the grade level at which you think schools should start teaching about that topic. For example, if you feel schools should teach the correct names for the genitals in grades K-3, put a check mark in the K-3 column that corresponds to that topic. If you feel that a topic shouldn't be mentioned until grades 9-12, mark the box for that topic under the 9-12 column. If you feel a topic shouldn’t be mentioned at all, mark the box under the "this topic should not be included" column.

**Grade level at which schools should start teaching this topic**

<table>
<thead>
<tr>
<th>Topics</th>
<th>1-4</th>
<th>5-10</th>
<th>11-12</th>
<th>This topic should not be included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components of reproductive systems</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Puberty</td>
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<td></td>
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<tr>
<td>Wet dreams</td>
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<tr>
<td>Menstruation</td>
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<tr>
<td>Reproduction</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Birth control methods &amp; safer sex practices</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Abstinence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV/AIDS and others Sexually transmitted diseases</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teenage pregnancy</td>
<td></td>
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<td></td>
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<tr>
<td>Personal safety to prevent child sexual abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Homosexuality</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Masturbation</td>
<td></td>
<td></td>
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<tr>
<td>Sexuality in the media</td>
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</tbody>
</table>

**Part D.** In order for us to better understand the kind of sexual and reproductive health education parents are providing at home, please respond to the following questions.

D1. In your opinion, how good a job do you think you or your spouse have done in providing sexual and reproductive health education for your adolescent/adolescents?

- Excellent
- Very Good
- Good
- Fair
- Poor
D2. I have encouraged my adolescent/adolescents to ask me questions about sexual and reproductive health matters?

- Not at all
- Once or twice
- A few times
- Quite often
- Very often

D3. I have adequate scientific knowledge/information to provide sexual and reproductive health education for my adolescent/adolescents?

- Strongly Agree
- Agree
- Not Sure/Neutral
- Disagree
- Strongly Disagree

D4. I have adequate Islamic knowledge/information to provide sexual and reproductive health education for my adolescent/adolescents?

- Strongly Agree
- Agree
- Not Sure/Neutral
- Disagree
- Strongly Disagree

D5. Please indicate the extent to which you have talked about each of the following topics with your adolescent/adolescents. For each topic below, please mark the option/number that best represents your choose.

**How much you talked to your adolescents about:**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Not at all</th>
<th>In general term only</th>
<th>In some detail</th>
<th>In a lot of detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components of reproductive systems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Puberty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Reproduction</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Birth control methods &amp; safer sex practices</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Abstinence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>HIV/AIDS and others sexually transmitted diseases</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Personal Safety (to prevent child sexual abuse)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexual decision-making skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
D6. I am comfortable to provide sexual and reproductive health education to
   o Boys
   o Girls
   o Both boys and girls

D7. Would you be interested in attending a sexual and reproductive health education workshop for parents if it was offer at your adolescents’ school?
   o Yes
   o No
   o Not sure

**Part E.** Although we do not wish to know who you are, it is important that we know some of the characteristics of the people who complete this questionnaire. Please provide the following information about yourself by marking the appropriate answer.

E1. What is the highest level of education you have completed?
   o Less than high school
   o High school
   o University/Undergraduate Diploma degree
   o University/Undergraduate Bachelor degree
   o University/Postgraduate degree

E2. Are you male or female?
   o Male
   o Female

E3. How old are you?
   o Under 30
   o 30-39
   o 40-49
   o 50+

E4. I am parent who have
   o A boy/Boys only studying at class 7-9
   o A girl/Girls only studying at class 7-9
   o Both boys and girls studying at class 7-9

**Thank you very much for taking the time to complete our questionnaire. Please seal this questionnaire in the envelope provided and send it back to school with your adolescent.**

If you would like to request a copy of the results of this survey, please contact Mr. Omar Ali Alzaabi, PhD student RMIT University Australia,
Appendix H: Permission to Use Instrument of Phase Two

RMIT UNIVERSITY

Re: Permission to use your instrument

5 July 2015 at 20:49

Omar—

We are happy for you to use our survey. I have attached an electronic copy of it. Are you also interested in the survey we used with teachers? Also please let me know if you’d like copies of any of our other publications related to attitudes and experiences with sexual health education.

Good luck with your research.

E. Sandra Byers
Professor & Chair
Department of Psychology
University of New Brunswick

Dear Prof. Angela D. Weaver

I am Omar Alzaabi: a PhD student at RMIT University, Australia. Currently, I am working in my research proposal with my senior supervisor (Prof. Eleanor Holroyd/ an expert in the field of sexual health). The aim of my study is to examine the knowledge, attitudes, and beliefs of parents, teachers and school nurses regarding school-based sex education programs in Oman. An explorative approach using a 2 phase sequential mixed method design will be used in order
Appendix H

to develop first-time baseline data regarding the barriers and socio-cultural factors and challenges to the provision of these programs in Oman. This study will help to inform policy and public health/education service for the design and implementation of these programs in Oman and potentially other Muslim countries in the MENA region in order to improve the reproductive health of adolescents, and support parents with adolescent development.

I will start conducting study on October 2015. After reviewing your article (Sexual health education at school and at home: Attitudes and experiences of New Brunswick parents/see the attachment), both me and my senior supervisor: Prof. Eleanor, found that your instrument/survey which was used in this article will be very suitable to answer my research questions in phase 2 of the study.

I am very happy to use your survey. I would like to provide me with original soft copy of the survey if possible with your permission to use it. Moreover, I will like to provide me with any information regarding validity and reliability of the instrument. I know that your instrument is a valid and reliable tool which has been used in other sexual health studies. However, I did not find this information in the article.

In future, I will be very happy to provide you with complete thesis of my PhD with publications. Moreover, I am very interested to work and receive your helpful feedback regarding my research in sexual health.

I made cc to my Senior Supervisor: Prof. Eleanor and second author of the article: Prof. Sandra Byers.

Thank you

Omar Alzaabi (PhD student RMIT University), MANP,DN, BSN, RN

Lecturer at Adult Health and Critical Care Department
College of Nursing
Appendix I: Research Approval from CHEAN: Reference No. BSEHAPP 40-15

26th October 2015

Dear Eleanor,

BSEHAPP 40-15 HOLROYD-ALZAABI Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based Reproductive Health Education Programs in Oman

Thank you for submitting your amended application for review.

I am pleased to inform you that the CHEAN has approved your application for a period of 3 Years from the date of this letter to 26th October 2018 and your research may now proceed.

The CHEAN would like to remind you that:

All data should be stored on University Network systems. These systems provide high levels of manageable security and data integrity, can provide secure remote access, are backed up on a regular basis and can provide Disaster Recover processes should a large scale incident occur. The use of portable devices such as CDs and memory sticks is valid for archiving; data transport where necessary and for some works in progress.

The authoritative copy of all current data should reside on appropriate network systems; and the Principal Investigator is responsible for the retention and storage of the original data pertaining to the project for a minimum period of five years.

Please Note: Annual reports are due on the anniversary of the commencement date for all research projects that have been approved by the CHEAN. Ongoing approval is conditional upon the submission of annual reports failure to provide an annual report may result in Ethics approval being withdrawn.

Final reports are due within six months of the project expiring or as soon as possible after your research project has concluded.

Yours faithfully,

Dr Falk Scholer
Deputy Chair, Science Engineering & Health
College Human Ethics Advisory Network

Cc: CHEAN Member: Margaret Lech School of Electrical & Computer Science RMIT University
   Student Investigator(s): Omar Alzahab
   Other Investigator(s): Margaret Heffernan School of Business RMIT University
Appendix J: Research Approval from the Oman Ministry of Health (MOE)

To Whom It May Concern

This is to certify that Oman Ministry of Education has approved the PhD research project titled: Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based Reproductive Health Education Programs in Oman to be conducted at schools in Oman. The following members are involved in this research project:

1. Omar Al-Mohammad Alzuabi is the principal research student of this project. A PhD candidate at School of Health Sciences, RMIT University, Australia.

2. Professor Eleanor Holroyd from School of Health Sciences, RMIT University, Australia is the chief investigator of this research project.

3. Dr. Margaret Helfman from School of Business, RMIT University is the co-investigator of this research project.

Please assist and support Mr. Omar Alzuabi in conducting his research project at schools in Oman.

Should you have any questions, please do not hesitate to contact Oman Ministry of Education.

Thank you

D/Saad Mubarak Al-Fori
Director of the Technical Office for Studies, Development

20 October 2015

To the Ministry of Health and the University,

Concerning the above-mentioned research project, I hereby certify that the research will be conducted in a manner that respects ethical principles.

Signature

[Signature]

[Name]

[Position]

[Institution]
Appendix K:

Assessors' Content Validation Scoring Sheet
WHO Semi-Structured Interview Questions

Project Title:
Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based Sexual and Reproductive Health Education Programs in Oman

Research Aim:

The aim of this study underpinned by the Social Cognitive Theory is to examine the attitudes and beliefs of parents, teachers and school nurses regarding school-based SRHE programs in Oman.

Research Objectives:

The overall objectives of this research study are:
1. Explore the attitudes of male and female parents, male and female teachers and female school nurses toward school-based SRHE programs in Oman.
2. Examine the beliefs of male and female parents, male and female teachers and female school nurses regarding school-based SRHE programs in Oman.
3. Identify the barriers to provision of school-based SRHE programs in Oman.
4. Identify the facilitators to provision of school-based SRHE programs in Oman.
5. Inform policy for the design and implementation of school-based SRHE programs in Oman.
6. Provide recommendations to Oman Department of Health and Department of Education for the design and implementation of reproductive health school-based education of adolescents in Oman.

Potential Significance:

It is intended that this study will help to develop first-time baseline data regarding the barriers and socio-cultural factors and challenges to the provision of these programs in Oman. This analysis then informs school-based health education policy on the development of a curriculum for secondary school-based SRHE programs in Oman and potentially other Muslim countries in the Middle East.

Methodology:

Research Design: A mixed-method, two-phase sequential explorative descriptive design will be applied in this study.

Phase One: In phase one, three key stakeholder groups: female school nurses, teachers (male and female children who teach students grade 7-9), and parents (mothers and fathers of children studying in grade 7-9) will be invited to participate in homogenous seven focus group discussions (FGDs). There will be between 5-6 persons in each group drawn from two public pre-secondary schools grade 5-10 (one boys’ school and one girls’ school) located in Saham district using
convenience sampling approach. Each FGD will be guided by a pre piloted set of semi-structured interview questions.

**Interview Guides and Instrumentation:**

**Phase One:** For the qualitative phase (FGDs), the World Health Organisation (WHO) topics for interviews: “Topics for Individual In-Depth Interviews and Focus Group Discussions: Partner Selection, Sexual Behaviour and Risk Taking” developed by Ingham and Stone (2002) will be adapted to conduct FGDs with further modification by a review of the relevant literature for the Middle East. The FGDs for the parents (mothers and fathers) and teachers (male and female) will be conducted in Arabic language with the remainder of the FGD conducted in English. Therefore, the Ingham and Stone (2002) interview guide will be translated from English to Arabic by the researcher and subjected to back translation to ensure equivalency.

The topics for Individual In-Depth Interviews and Focus Group Discussions: Partner Selection, Sexual Behaviour and Risk Taking” (2002) guide focuses on exploring the SRHE attitudes and beliefs of participants such as parents, nurses and teachers of adolescents in order to provide direction for interventions or advocacy. It has been content validated and used by researchers in MENA countries such as Iran (Mohammodi et al., 2006; Mosavi et al., 2014) as well as other different countries including China (WHO, 2015), India (WHO, 2015), Kenya (WHO, 2015), Nigeria (WHO, 2015), Tanzania (WHO, 2015) Thailand (Sridawruang et al., 2010) with positive feedback that the Ingham and Stone (2002) guide is an effective and suitable means, with adaptation to examine the attitudes and beliefs of parents, teachers and school nurses regarding school-based SRHE programs including Middle East with the addition of questions that relevant to the Middle East culture (Mohammodi et al., 2006; Mosavi et al., 2014; WHO, 2015).

The Ingham and Stone (2002) guide consists of four sub sections: 1) **sources of information**, 2) sexual development, 3) risk taking behaviours and 4) use of sexual health services. In this study, sub **section one** will be used solely with literature and cultural modifications as it consists of questions designed to investigate sources and gap in the sexual and reproductive health knowledge of parents, teachers and school nurses as well as their attitudes and beliefs towards school-based SRHE programs and its barriers and facilitators (Ingham & Stone, 2002). Sub sections 2, 3, 4 include questions designed only for adolescents and therefore they will be excluded in this study as adolescents are not part of the participant sample.

**Instructions for the Assessors:**

Dear Assessors,

Thank you very much for taking your time to assess this guide. After reading through this interview guide, please kindly rate the content construct for clarity, appropriateness and relevance and the relationship of each question item by using a 4 point Likert scale as following: 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = very relevant. Please do write down any comments you have at the remarks column if you choose 1 or 2 as your answers for the survey question. Please kindly provide your full name and assessment date.
### Assessors' Content Validation Scoring Sheet
#### WHO Semi-Structured Interview Questions
**Teachers Focus Group Discussion**

Mark only one oval per row.

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How do you feel about school teaching adolescents about reproductive health education?</td>
<td></td>
<td></td>
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<tr>
<td>2. In what ways might you see Omani adolescents finding introduction of classes on reproductive health issues useful? Why? Or why not (What problems or benefits might there be from reproductive health education?)</td>
<td></td>
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<tr>
<td>3. When should reproductive health education be started? At what age?</td>
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<tr>
<td>4. Can you explain how should reproductive health education be approached?</td>
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<td>5. Which teaching methods do you think should be used?</td>
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<td>6. Who should teach the classes? Why</td>
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Adapted from:

If you score 1 or 2 for any of the questions above, please comment below

Name of Assessor: ___________________________ Date: 11/2015
## Assessor's Content Validation Scoring Sheet

**WHO Semi-Structured Interview Questions**

**Parents Focus Group Discussion**

Mark only one oval per row.

<table>
<thead>
<tr>
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**Adapted from:**

If you score 1 or 2 for any of the questions above, please comment below

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*Date: /11/2015*
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Adapted from:

If you score 1 or 2 for any of the questions above, please comment below

Name of Assessor: 

Date: /11/2015
Appendix L: Assessors' Feedback Regarding Content Validation of Focus Group Interview Questions

Dear Rahma (Head of School Nursing at Saham district),

Thank you for meeting with today and discussing about my PhD research Project.

I am Omar Alzaabi, a PhD student at RMIT University, Australia. As I mentioned to you in our meeting, currently I am conducting my research project aiming to examine the attitudes and beliefs of parents, teachers and school nurses regarding school-based HIV programs in Oman. A mixed-method, two-phase sequential explanatory descriptive design will be applied in this study. In phase one, three key stakeholder groups (female school nurses, teachers (male and female), and parents (male and female)) will be involved to gather information through focus group interviews and the survey. This information is intended to be used in phase two for the development of educational material to support the implementation of school-based HIV programs in Oman. My project is supervised by Dr. Jane Smith (Director, School of Business) and Dr. John Brown (expert in the field of sexual and reproductive health) and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education (see the attachments).

I would like to assess Interview Questions/guide of phase one. Thank you very much for taking your time to assess this guide. After reading through this interview guide, please kindly rate the appropriateness of each question by using the 4 Point Likert Scale, following the filling out the appropriateness column if you choose 1 or 2 as your answers for the survey question. Please kindly provide your full name and assessment date. Please see the attachments (Assessors’ Content Validation Scoring Sheet) for more details.

I made CC to Supervisors

Thank you

Omar Alzaabi (PhD student RMIT University), MAN, BSN, RN

---

3 attachments
Omar Alzaabi Approval Letter.pdf
Assessors’ Content Validation Scoring Sheet.docx
RMITUNIAPP.20.15 HOD/ROBY-ALZAABI Approval letter.pdf

---

Dear Omar

I hope you are well.

I am writing to you to appreciate your efforts in your research project. In addition to that I am sending back to you the Interview Questions after completing.

Thank you

Best Regards

Rahma Almoodiy

---

Dear Rahma

Thank you for assessing my interview questions.

Omar

---

4 November 2016 at 08:04

Dear Omar,

I am unable to open this file, can you able to send it in either Word or as a pdf, please.

I have noted all other recent email communications... please all is made.

https://mail.google.com/mail/u/0/?ui=2&ik=1573c23315&shar=17f0a7bab009b7&permh=1&shar=17f0a7bab009b7&pli=1&shar=17f0a7bab009b7&view=0&compos=0&mfs=0&pg=1&chov=1&rl=0&chov=1&dpt=0/0/0&ei=Kwr0W6D9Lou9KQJeKw

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### Appendix L

**Assessors’ Content Validation Scoring Sheet**

#### WHO Semi-Structured Interview Questions

**Teachers Focus Group Discussion**

Mark only one oval per row:

<table>
<thead>
<tr>
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</thead>
<tbody>
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<tr>
<td>3. Whom should reproductive health education be targeted? At what age?</td>
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<td>4. Can you explain how should reproductive health education be approached?</td>
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<td>5. Which teaching methods do you think should be used?</td>
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<tr>
<td>8. In what ways if at all do you discuss any matters related to reproductive health with students? If not why? (What obstacles (social, cultural, gender, inner) that prevent you from delivering effective reproductive health education in schools? Can you explain about these please?</td>
<td></td>
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<td>✓</td>
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<tr>
<td>9. Do you think that reproductive health education can conflict with family religion or family norms, beliefs and values? If yes why?</td>
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<tr>
<td>10. Does the school policy support the school teachers delivering reproductive health education in schools? What are the challenges in this area?</td>
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<tr>
<td>11. Where or what are the most important sources of sexual information to adolescents?</td>
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**Adapted from:**


If you score 1 or 2 for any of the questions above, please comment below.

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**Dear Oman**

Your PhD research project is worthwhile and will provide baseline data for School Nursing in Reproductive Health. I agree that your interview questions are highly relevant and appropriate for Oman culture. All questions are clear and will help to obtain more in-depth information about school-based Reproductive health education programs in Oman. Moreover, obtaining approval from Oman Ministry of Education indicated that your research project is valuable for school health and interview questions are relevant to Omani culture.

---

**Name of Assessor:**

Balami Abdullah Alshabbi
Head of School Nursing, Sultan Qaboos University

**Date:** 11/11/2015

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### Appendix L

#### Assessors' Content Validation Scoring Sheet

**WHO Semi-Structured Interview Questions**

**Parents Focus Group Discussion**

Mark only one row per row.

<table>
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<td>8. In what ways, if at all, do you discuss any matters related to reproductive health with adolescents? If not, why? (Examples: sexual values, credit, family planning, or gender issues) that prevent you from delivering effective reproductive health education to your adolescents? Can you explain about these please?</td>
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<td>9. Do you think that reproductive health education can conflict with Islamic religion or family norms, beliefs, and values? If yes why?</td>
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**Adapted from:**


If you score 1 or 2 for any of the questions above, please comment below.

Dear Omar

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Name of Assessor:        Date: 11/11/2013

Reema Abdulrahman Alnabidi
Head of School Nursing, Saham District
## Appendix L

### Assessors' Content Validation Scoring Sheet

#### WHO Semi-Structured Interview Questions
School Nurses Focus Group Discussion

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Adapted from:


If you score 1 or 2 for any of the questions above, please comment below.

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Dear Oscar,

Your PhD research project is worthwhile and will provide baseline data for School Nursing in Reproductive Health. I agree that your interview questions are highly relevant and appropriate for Omani culture. All questions are clear and will help to obtain more in-depth information and understanding about adolescent reproductive health issues. The research design was approved by the Omani Ministry of Education, indicating that your research project is valuable for school health and interview questions are relevant to Omani culture.

Name of Assessor: Rahma B. Al-Sabahi
Head of School Nursing, Bahum District

Date: 11/1/2013

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Appendix L

Assessment of Interview Questions/Guide

Dear Mr. Nasser Al Salti (Lecturer at college of Nursing, Sultan Qaboos University)

I am Omar Alahed, a PhD student at RMIT University, Australia. Currently, I am conducting my research project aiming to examine the attitudes and beliefs of parents, teachers, and school nurses regarding school-based RSS programs in Oman. A mixed-method, two-phase sequential exploratory descriptive design will be applied in this study. In Phase one, three key stakeholder groups (female school nurses, teachers, and parents) will be invited to participate in homogeneous sessions. In Phase two, 60 parents, teachers, and students will be invited to participate in interview sessions. This research is supervised by Professor Eleanor Holmberg from School of Health Sciences and Dr. Magaret Silverman from School of Business. In the field of sexual and reproductive health, and has been approved by the RMIT Human Research Ethics Committee, and a special permission was obtained from Oman Ministry of Education (Please see the attachments).

I would like to assess Interview Questions/Guide of phase one. Thank you very much for taking your time to assess the guide. After reading through the interview guide, please kindly rate the content construct for clarity, appropriateness and relevance and the relationship of each question item by using a 4-point Likert scale as following: 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = very relevant. Please do write down any comments you have at the remarks column if you choose 1 or 2 in your answers to the survey questions. Please kindly provide your full name and assessment date. Please see the attachments (Assessment Content Validation Scoring Sheet) for more details.

I made CC to my Supervisor.

Thank you.

Omar Alahed (PhD student RMIT University), MASEF, RBS, WSN

3 attachments

http://melbourne.papers.google.com/attachment?attid=RRI1QfH4FtRZnl2A7xvMzMRU8JzTJpH8sN3L8SwdP86a4Ts87kOjllQ8_8f%3D8f

http://melbourne.papers.google.com/attachment?attid=RRI1QfH4FtRZnl2A7xvMzMRU8JzTJpH8sN3L8SwdP86a4Ts87kOjllQ8_8f

Omar Study Questions

Dear Mr. Al Salti,

I am happy to see my email is not sending emails to outside the country. Thank you for considering me as an examiner for the interview questions. I hope through this questionnaire I can obtain the necessary data to have a comprehensive picture of the problem and the Oman culture. I wish you a good luck in your studied and the best for you and your research team.

BE THE CHANGE YOU WISH TO SEE IN THE WORLD

Omar Alahed

Omar Alahed (PhD student RMIT University, Australia)
## Appendix L

### Assessors’ Content Validation Scoring Sheet

**Assessors’ Content Validation Scoring Sheet**

**WHO-led Interview Questions**

**Parents Focus Group Discussion**

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<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
<tr>
<td>3. What should reproductive health education be taught? At what age?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
<tr>
<td>4. Can you explain how should reproductive health education be approached?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
<tr>
<td>5. Which teaching methods do you think should be used?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
<tr>
<td>6. Who should teach the classes? Why?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
<tr>
<td>7. What reproductive health issues do you think should be taught at school?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
<tr>
<td>8. In what ways (if at all) do you discuss any matters related to reproductive health with students? If not why?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
</tbody>
</table>

### Assessors’ Content Validation Scoring Sheet

**Assessors’ Content Validation Scoring Sheet**

**Interview Questions**

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. How do you feel about the role of parents in the education of reproductive health to adolescents?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
<tr>
<td>13. Do you think that adequate knowledge and skills in relation to cultural values and reproductive health education are important? If so, why?</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>v</td>
</tr>
</tbody>
</table>

### Appendix L

**Assessors’ Content Validation Scoring Sheet**

**Interview Questions**

1. How do you feel about school teaching adolescents about reproductive health education?
2. In what ways might you see Omani adolescents finding information of classes on reproductive health issues useful? Why? Or why not? (What problems or benefits might there be from reproductive health education?)
3. What should reproductive health education be taught? At what age?
4. Can you explain how should reproductive health education be approached?
5. Which teaching methods do you think should be used?
6. Who should teach the classes? Why?
7. What reproductive health issues do you think should be taught at school?
8. In what ways (if at all) do you discuss any matters related to reproductive health with students? If not why?
9. Do you think that adequate knowledge and skills in relation to cultural values and reproductive health education are important? If so, why?

### Appendix L

**Interview Questions**

1. How do you feel about school teaching adolescents about reproductive health education?
2. In what ways might you see Omani adolescents finding information of classes on reproductive health issues useful? Why? Or why not? (What problems or benefits might there be from reproductive health education?)
3. What should reproductive health education be taught? At what age?
4. Can you explain how should reproductive health education be approached?
5. Which teaching methods do you think should be used?
6. Who should teach the classes? Why?
7. What reproductive health issues do you think should be taught at school?
8. In what ways (if at all) do you discuss any matters related to reproductive health with students? If not why?
9. Do you think that adequate knowledge and skills in relation to cultural values and reproductive health education are important? If so, why?
Appendix L

Assessment Content Validation Scoring Sheet

Interview Questions

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How do you feel about school teaching adolescents about reproductive health education?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. In what ways might you see Omran adolescents failing to understand classes on reproductive health issues? Why? Or why not? (What problems or benefits might there be from reproductive health education?)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. What should reproductive health education be taught? At what age?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4. Can you explain how should reproductive health education be approached?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5. Which teaching methods do you think should be used?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6. What should teach the classes? Why?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7. What reproductive health issues do you think should be taught?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8. In what ways (if at all) do you see any current school teaching reproductive health with students? If not why? Are there any barriers (religious, family norms or gender issues) that prevent you from delivering effective reproductive health education in schools? Can you explain about these please?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9. Do you think that reproductive health education can conflict with Islamic religious or family norms, beliefs and values? If yes why?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>10. Does the school policy support the school norms ensuring reproductive health education in schools? What are the challenges in this area?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Adapted from:


If you score 1 or 2 for any of the questions above, please comment below.

The interview questions are highly relevant and are well related to the Omran culture. These kinds of research will help the Omran society to explore and improve the reproductive health education. I strongly believe this research will open the doors for more discussions and other research topics in future. All the best and we are so happy to know the research results.

Name of Researcher:

Date of Visit: 01/01/2013

Assessed in College of Nursing, Qasr, Omran
Appendix M:
Assessors' Content Validation Scoring Sheet
Parents’ Survey

Project Title:

Attitudes and Beliefs of Parents, Teachers and School Nurses Regarding School-Based Sexual and Reproductive Health Education Programs in Oman

Research Aim:

The aim of this study underpinned by the Social Cognitive Theory is to examine the attitudes and beliefs of parents, teachers and school nurses regarding school-based sexual and reproductive health education (SRHE) programs in Oman.

Research Objectives:

The overall objectives of this research study are:
1. Explore the attitudes of male and female parents, male and female teachers and female school nurses toward school-based SRHE programs in Oman.
2. Examine the beliefs of male and female parents, male and female teachers and female school nurses regarding school-based SRHE programs in Oman.
3. Identify the barriers to provision of school-based SRHE programs in Oman.
4. Identify the facilitators to provision of school-based SRHE programs in Oman.
5. Inform policy for the design and implementation of school-based SRHE programs in Oman.
6. Provide recommendations to Oman Department of Health and Department of Education for the design and implementation of reproductive health school-based education of adolescents in Oman.

Potential Significance:

It is intended that this study will help to develop first-time baseline data regarding the barriers and socio-cultural factors and challenges to the provision of these programs in Oman. This analysis then informs school-based health education policy on the development of a curriculum for secondary school-based SRHE programs in Oman and potentially other Muslim countries in the Middle East.

Methodology:

Research Design: A mixed-method, two-phase sequential explorative descriptive design will be applied in this study.

Phase One: In phase one, three key stakeholder groups: female school nurses, teachers (male and female teachers who teach students grade 7-9), and parents (mothers and fathers of children studying in grade 7-9) was invited to participate in homogenous seven focus group discussions (FGDs). There were between 5-9 persons in each group drawn from two public pre-secondary schools grade 5-10 (one boys’ school and one girls’ school) located in Saham district using
convenience sampling approach. Each FGD was guided by a pre piloted set of semi-structured interview questions.

**Phase Two:** In phase two, a convenience sample of approximately 232 parents including equal number of both mothers and fathers (parents of children studying in grade 7-9) will be drawn from the same (Phase one) two public pre-secondary schools grade 5-10 and invited to complete a self-administered questionnaire.

**Instrumentation**

**Phase Two:** Quantitative survey, a self-administered questionnaire: “Survey on Parent Attitudes towards Sexual Health Education” developed by Weaver, Byers, Sears, Cohen and Randall (2002) will be adapted to examine the attitudes and belief of parents towards school-based SRHE programs in phase two with further modification by a review of the relevant literature for the Middle East and the results drawn from phase one (FGDs). Weaver et al.’s (2002) survey will be administered to the parents in Arabic language. The method of forward-translations and back-translations will be used in order to check the accuracy of Arabic version survey (WHO, 2015).

Weaver et al.’s (2002) questionnaire consists of 5 parts. Part one examines the parents’ attitudes and beliefs using 5-point Likert scales (Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree) regarding the following statements:

- Sexual health education should be provided in the schools
- The school and parents should share responsibility for providing children with sexual health education
- Sexual health education should begin at which grade levels (1-3, 4-5, 6-8, 9-12, or should not be provided)

In part two, it ask the parents to indicate on a 5-point scale (1 = not at all important, 2 = somewhat important, 3 = important, 4 = very important, 5 = extremely important) how important it is to include the following ten topics in a sexual health curriculum: personal safety, abstinence, puberty, sexual decision-making in dating relationships, reproduction, sexually transmitted diseases, sexual coercion and sexual assault, birth control methods and safer sex practices, correct names for genitals and sexual pleasure and enjoyment. In Part three, parents is asked to indicate the grade level at which school should introduced the 26 sexual health topics (1-3, 4-5, 6-8, 9-12, or should not be included).

In Part four, the parents are asked to evaluate the level of comfort and the knowledge having discussions with their child about SRHE. Also the parents are provided with the same list of 10 general sexual health topics as in part two and is asked to indicate on a scale from 1 (not at all) to 4 (in a lot of detail) the depth of coverage of theses sexual health topics with their children. In part five, parent is asked about demographic information regarding gender, age and education level.
Validity and Reliability of Instrument: Weaver et al.’s (2002) survey: “Survey on Parent Attitudes towards Sexual Health Education” was validated and used to assess the attitude and beliefs among 4200 Canadian parents of different cultures (Weaver et al., 2002). It has been reported to have an internal consistency of 0.91 (Byers et al., 2008) and 0.92 (Byers & Sears, 2012). Moreover, it was validated and used in other SRHE studies (Advisory Committee on Family Planning, 2008; Byers & Sears, 2012; Byers, Sears, & Weaver, 2008; McKay, Byers, Voyer, Humphreys, & Markham, 2014).

Weaver et al.’s (2002) survey is considered more suitable for this study as it includes questions that culturally relevant, concord with results of focus group discussions of phase one and more comprehensive to examine the parents’ attitudes and beliefs towards school-based SRHE programs in Middle East countries including Oman. However, in this study, this questionnaire will be piloted and was modified according to the finding of FGDs in the phase one and relevant literature before it will be used to collect data with eligible participants in order to test the content reliability of instrument (Creswell & Creswell, 2005).

Instructions for the Assessors:

Dear Assessors,

Thank you very much for taking your time to assess this survey. After reading through this survey questions, please kindly rate the content construct for clarity, appropriateness and relevance and the relationship of each question item for Middle East culture by using a 4 point Likert scale as following: 1 = not relevant, 2 = somewhat relevant, 3 = relevant, and 4 = Highly relevant. Please do write down any comments you have at the remarks column if you choose 1 or 2 as your answers for the survey questions. Please kindly provide your full name and assessment date.
<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1:</strong> Sexual and reproductive health education should be provided in the schools.</td>
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<tr>
<td>o Strongly Agree</td>
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<tr>
<td>o Agree</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>o Not Sure/Neutral</td>
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<tr>
<td>o Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Disagree</td>
<td></td>
<td></td>
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<tr>
<td><strong>Question 2:</strong> Sexual and reproductive health education should be matched/linked with Islamic rules and regulations.</td>
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<tr>
<td>o Strongly Agree</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>o Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Not Sure/Neutral</td>
<td></td>
<td></td>
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<tr>
<td>o Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Disagree</td>
<td></td>
<td></td>
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<tr>
<td><strong>Question 3:</strong> The school and parents should share responsibility for providing adolescents with sexual and reproductive health education.</td>
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<tr>
<td>o Strongly Agree</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>o Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Not Sure/Neutral</td>
<td></td>
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<tr>
<td>o Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Disagree</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Question 4:</strong> Sexual and reproductive health education that is appropriate for adolescents’ age and developmental level should start in:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Grades 1-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>o Grades 5-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>o Grades 11-12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o There should be no sexual and reproductive health education in schools</td>
<td></td>
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</tr>
</tbody>
</table>
### Question 5: Overall, please rate the quality of the sexual and reproductive health education that your adolescent/adolescents has/have received in your school.

- Excellent
- Very Good
- Good
- Fair
- Poor
- Don’t know
- My adolescent/adolescents has/have not received any sexual and reproductive health education.

### Question 6:

A6. The following are sources of sexual and reproductive health information. Please indicate how important each source.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>School Nurses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>School teachers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Religious leaders</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Friends/Peers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Media (Internet, magazine, video, movies)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
**Question 7:**

Part B. There are many topics that could be covered in the sexual and reproductive health curriculum. We would like to know how important you feel it is for each of the following topics to be covered in the sexual and reproductive health education curriculum. For each topic below, please mark the option that best represents your opinion.

<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct names for genitals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Puberty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Reproduction</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Birth control methods &amp; safer sex practices</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Abstinence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexually transmitted diseases</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexual coercion &amp; sexual assault</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Personal Safety (to prevent child sexual abuse)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexual Decision-making skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
**Question 8:**

Part C. Below is a list of sexual and reproductive health education topics that could be covered in the classroom. For each topic, put a check mark indicating the grade level at which you think schools should start teaching about that topic. For example, if you feel schools should teach the correct names for the genitals in grades K-3, put a check mark in the K-3 column that corresponds to that topic. If you feel that a topic shouldn’t be mentioned until grades 9-12, mark the box for that topic under the 9-12 column. If you feel a topic shouldn’t be mentioned at all, mark the box under the “This topic should not be included” column.

<table>
<thead>
<tr>
<th>Grade level at which schools should start teaching this topic</th>
<th>1-4</th>
<th>5-10</th>
<th>11-12</th>
<th>This topic should not be included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct names for genitals</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Body image</td>
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</tr>
<tr>
<td>Puberty</td>
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<tr>
<td>Wet dreams</td>
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<tr>
<td>Menstruation</td>
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<tr>
<td>Reproduction and birth</td>
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<tr>
<td>Birth control methods &amp; safer sex practices</td>
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<tr>
<td>Abstinence</td>
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<tr>
<td>Sexually transmitted diseases/AIDS</td>
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<tr>
<td>Teenage pregnancy</td>
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<tr>
<td>Personal safety to prevent child sexual abuse</td>
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<tr>
<td>Sexual coercion &amp; sexual assault</td>
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<tr>
<td>Homosexuality</td>
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<tr>
<td>Communicating about sexual and reproductive health matters</td>
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<tr>
<td>Masturbation</td>
<td></td>
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<tr>
<td>Sexual and Reproductive problems and concerns</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sexuality in the media</td>
<td></td>
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</tr>
<tr>
<td>Survey Questions</td>
<td>Not relevant</td>
<td>Somewhat relevant</td>
<td>Relevant</td>
<td>Highly relevant</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td><strong>Question 9:</strong> In your opinion, how good a job do you think you or your spouse have done in providing sexual and reproductive health education for your adolescent/adolescents?</td>
<td></td>
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<tr>
<td>o Excellent</td>
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<tr>
<td>o Very Good</td>
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<tr>
<td>o Good</td>
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<tr>
<td>o Fair</td>
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<tr>
<td>o Poor</td>
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</tr>
<tr>
<td><strong>Question 10:</strong> I have encouraged my adolescent/adolescents to ask me questions about sexual and reproductive health matters?</td>
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<tr>
<td>o Not at all</td>
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<tr>
<td>o Once or twice</td>
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<tr>
<td>o A few times</td>
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<tr>
<td>o Quite often</td>
<td></td>
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<tr>
<td>o Very often</td>
<td></td>
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</tr>
<tr>
<td><strong>Question 11:</strong> I have adequate scientific knowledge/information to provide sexual and reproductive health education for my adolescents?</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>o Strongly Agree</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>o Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Not Sure/Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Question 12:</strong> I have adequate Islamic knowledge/information to provide sexual and reproductive health education for my adolescents?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>o Agree</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>o Not Sure/Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Question 13: Please indicate the extent to which you have talked about each of the following topics with your adolescents. How much did you talk to your adolescents about:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Not at all</th>
<th>In general term only</th>
<th>In some detail</th>
<th>In a lot of detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct names for genitals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Puberty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Reproduction</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Birth control methods &amp; safer sex practices</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Abstinence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexually transmitted diseases</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexual coercion &amp; sexual assault</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Personal Safety (to prevent child sexual abuse)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexual decision-making skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Question 14:** I am comfortable to provide sexual and reproductive health education to
- [ ] Boys
- [ ] Girls
- [ ] Both boys and girls
## Question 15

**Question 15:** Would you be interested in attending a sexual and reproductive health education workshop for parents if it was offer at your adolescents’ school?

- Yes
- No
- Not sure

<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from:


If you score 1 = not relevant or 2 = somewhat relevant, for any of the questions above, please comment below.
Appendix N: Assessors' Feedback Regarding Content Validation of Parents' Survey

Dear [Name]

Thanks for the attached survey content validation scoring sheet & for the attached summary of your current research study.

I will be honored to participate in its review & evaluation.

with pleasure

I will look at it as soon as I can & get back to you ....

All my best regards for Prof M. Hegert and to your supervisors: Prof E. Holroyd - Prof M. Hefterman - Prof M. Jackson for their trust.

Best Regards

Shenkar

Dr Shenkar Fereng
Associate Prof in Pediatric Nursing

---

Dear [Name]

I am attaching the word document containing my review & feedback.

However, the columns that were not working (all were relevant) but the typing was not functioning there!

Thanks

Good luck with your study

Dr Shenkar Fereng
Associate Prof in Pediatric Nursing
Appendix N:

Assessors' Content Validation Scoring Sheet

Parents' Survey

Mark only one cell per row.

<table>
<thead>
<tr>
<th>Question 1: Sexual and reproductive health education should be provided in the schools.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Not Sure/Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 2: Sexual and reproductive health education should be mandated with stricter rules and regulations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Not Sure/Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 3: The school and parent should share responsibility for providing information on sexual and reproductive health education.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Not Sure/Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 4: Sexual and reproductive health education that is appropriate for adolescents' age and developmental level should start in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades 1-4</td>
</tr>
<tr>
<td>Grades 5-12</td>
</tr>
<tr>
<td>There should be no sexual and reproductive health education in schools</td>
</tr>
</tbody>
</table>

Survey Questions

<table>
<thead>
<tr>
<th>Question 5: Overall, please rate the quality of the sexual and reproductive health education that your adolescents/adolescents have received in your school:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
<tr>
<td>Excellent</td>
</tr>
<tr>
<td>Very Good</td>
</tr>
<tr>
<td>Good</td>
</tr>
<tr>
<td>Fair</td>
</tr>
<tr>
<td>Poor</td>
</tr>
<tr>
<td>Don't know</td>
</tr>
<tr>
<td>My adolescents/adolescents have not received any sexual and reproductive health education.</td>
</tr>
</tbody>
</table>

Survey Questions

<table>
<thead>
<tr>
<th>Question 6:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
</tbody>
</table>

Survey Questions

<table>
<thead>
<tr>
<th>Question 7:</th>
</tr>
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<tbody>
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</tbody>
</table>

Survey Questions

<table>
<thead>
<tr>
<th>Question 8:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
</tbody>
</table>

Survey Questions

<table>
<thead>
<tr>
<th>Question 9:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
</tbody>
</table>

Survey Questions

<table>
<thead>
<tr>
<th>Question 10:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not relevant</td>
</tr>
</tbody>
</table>
### Appendix N:

<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 18: Your opinion, how good a job do you think you or your spouse have done in providing sexual and reproductive health education for your adolescents' adolescents?</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>o Excellent</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>o Very Good</td>
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<td></td>
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<tr>
<td>o Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Fair</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>o Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question 19: Have you encouraged your adolescents to ask for questions about sexual and reproductive health matters?</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>o Not at all</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>o Once or twice</td>
<td></td>
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<td></td>
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<tr>
<td>o A few times</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>o Quite often</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>o Very often</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Question 20: I have adequate scientific knowledge/information to provide sexual and reproductive health education for my adolescents?</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>o Strongly Agree</td>
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</tr>
<tr>
<td>o Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Not Sure/Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question 21: I have adequate Islamic knowledge/information to provide sexual and reproductive health education for my adolescents?</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>o Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Not Sure/Neutral</td>
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<tr>
<td>o Disagree</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>o Strongly Disagree</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Question 13:

<table>
<thead>
<tr>
<th>Question 13: I am comfortable to provide sexual and reproductive health education to</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Boys</td>
</tr>
<tr>
<td>o Girls</td>
</tr>
<tr>
<td>o Both boys and girls</td>
</tr>
</tbody>
</table>

---

Adapted from:


If you score 1 = not relevant or 2 = somewhat relevant, for any of the questions above, please comment below.

I did enjoy reading through the research tool. I can confirm that it is quite relevant to Arab Middle-Eastern culture and could be easily matched with Islamic communities. I guess it will be a good reference for future researchers who would work in sexual and reproductive health.

Thanks for giving me the opportunity to participate in your study.

Regards

---

Name of Assessor:

Date: 12/16/2016

Dr. Siewmar Paragi

Associate Prof in Pediatric Nursing

Faculty Coordinator for Post-Graduate Studies and Scientific Research

Faculty of Nursing
Appendix N:

Assessing Parents’ self-administered questionnaire/relevance for Middle East culture/Content Validation

1 May 2016 at 11:27

Dear Omar Alzaabi, Prof. Eleanor, Prof. Margaret and Prof. Merv

Thank you for selecting me to assess your study's survey. I am happy to assess it. I believe that surveys' questions are very relevant for Omani culture and do not conflict with Islamic religion. Please see the attached document.

Thank you

Rahma
### Appendix N:

#### Assessors' Content Validation Scoring Sheet

**Parents' Survey**

Mark only one cell per row.

<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
</table>
| Question 1: Sexual and reproductive health education should be provided in the schools.  
  - Strongly Agree  
  - Agree  
  - Not Sure/Neutral  
  - Disagree  
  - Strongly Disagree |              |                   |          | ✔️              |
| Question 2: Sexual and reproductive health education should be described/linked with realistic roles and regulations.  
  - Strongly Agree  
  - Agree  
  - Not Sure/Neutral  
  - Disagree  
  - Strongly Disagree |              |                   |          | ✔️              |
| Question 3: The school and parents should share responsibility for providing adolescents with sexual and reproductive health education.  
  - Strongly Agree  
  - Agree  
  - Not Sure/Neutral  
  - Disagree  
  - Strongly Disagree |              |                   |          | ✔️              |
| Question 4: Sexual and reproductive health education that is appropriate for adolescents' age and developmental level should start in:  
  - Grades 1-4  
  - Grades 5-10  
  - Grades 11-12  
  - There should be no sexual and reproductive health education in schools |              |                   |          | ✔️              |

#### Question 5:

Overall, please rate the quality of the annual and reproductive health education that your adolescent/adolescents have/have received in your school.

- Excellent
- Very Good
- Good
- Fair
- Poor
- Don't know
- My adolescent/adolescents have/have not received any sexual and reproductive health education.

#### Question 6:

- The following is a survey of annual and reproductive health outcomes. Please indicate your perception below.

<table>
<thead>
<tr>
<th>Health Outcomes</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>安全和健康</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>condom</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>sperm</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>testicles</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Roses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sexual Health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Contraception</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix N:

### Assessors' Content Validation Scoring Sheet

#### Question 8:

The child is healthy and physically able to participate in the discussion and provide information. The child can answer questions in simple English. He is well dressed and behaves appropriately. The child is cooperative and does not hesitate to answer questions. The child is comfortable answering questions. The child is able to express his opinions and ideas clearly. The child is able to answer questions about sexual and reproductive health.

<table>
<thead>
<tr>
<th>Question</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### Question 9:

In your opinion, how good a job do you think you or your spouse have done in providing sexual and reproductive health education to your adolescents/adolescents?

- Excellent
- Very Good
- Good
- Fair
- Poor

<table>
<thead>
<tr>
<th>Question</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Question 10:

Have encouraged my adolescents/adolescents to ask me questions about sexual and reproductive health matters?

- Not at all
- Once or twice
- A few times
- Quite often
- Very often

<table>
<thead>
<tr>
<th>Question</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### Question 11:

Have adequate scientific knowledge/information to provide sexual and reproductive health education for my adolescents?

- Strongly Agree
- Agree
- Not Sure/Neutral
- Disagree
- Strongly Disagree

<table>
<thead>
<tr>
<th>Question</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Question 12:

I have adequate scientific knowledge/information to provide sexual and reproductive health education for my adolescents?

- Strongly Agree
- Agree
- Not Sure/Neutral
- Disagree
- Strongly Disagree

<table>
<thead>
<tr>
<th>Question</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Assessors' Content Validation Scoring Sheet

#### Question 13:

Please respond to the questions below by placing check mark beside the following answer with your according to your experience and knowledge of your adolescents.

<table>
<thead>
<tr>
<th>Question</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### Question 14:

I am comfortable to provide sexual and reproductive health education to

- Boys
- Girls
- Both boys and girls

<table>
<thead>
<tr>
<th>Question</th>
<th>Not relevant</th>
<th>Somewhat relevant</th>
<th>Relevant</th>
<th>Highly relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Adapted from:


If you score 1 = not relevant or 2 = somewhat relevant, for any of the questions above, please comment below.

According to my experience in school health, I believe that parent survey is very relevant for Middle East culture including Oman culture. The questions on cultural beliefs do not conflict with Islamic religion or values, norms and beliefs of Oman culture. The survey will help to provide in-depth information regarding parents’ attitude towards sexual health education in Oman schools. In addition, I would like to indicate that obtaining approval from Oman Ministry of Education (MOE) shows that your study including parent’s survey questions has been assessed by MOE ethical department in term of relevancy and appropriateness for Islamic region and Oman culture and considered valuable project. Thank you.

Name of Assessor: [Signature]

Date: 01 May 2016

Bahaa Abdullatif Al-Obaidi
Head of School Nursing, Sultan Qaboos