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Islamic parents' attitudes and beliefs towards school-based sexual and reproductive health education programmes in Oman

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ABSTRACT

School-based comprehensive sexuality education (CSE) programmes play an important role in reducing young people's sexual risk behaviour and promoting health and well-being. There is limited evidence regarding the attitudes and beliefs of parents towards the implementation of school-based CSE programmes in Islamic cultural settings, including Oman, which this mixed-method study set out to explore. A convenience sample of 250 parents, with equal numbers of mothers and fathers of children aged 12–14 years (grades 7–9) at two urban public pre-secondary schools in Saham, completed a paper-based self-administered questionnaire in Arabic. We found most parents (72.8%) supported school-based CSE programmes that conformed to Islamic requirements of pre-marital sexual abstinence, but there was some opposition. Almost all parents supported comprehensive age-appropriate CSE being taught to students aged 10–15 years, including topics perceived as controversial in Omani culture, except for birth control and safer sex. Most parents considered themselves, school teachers and school nurses to be important sources of CSE. The study findings which suggest strong parental support for CSE programmes can facilitate education policy, CSE curriculum decision-makers and school healthcare-providers in Oman, other Middle Eastern countries, and countries with Muslim immigrant populations.

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School-based comprehensive sexuality education (CSE) programmes have proved to have a positive impact on adolescent sexual behaviours. In countries where such programmes have been implemented, there has been a significant association with delayed first intercourse, consistent contraceptive use and safer sexual practices (WHO Europe 2010). Moreover, good quality CSE is associated with the prevention of sexually transmitted infections (STIs), including human immunodeficiency virus (HIV), and reductions in sexual abuse and unintended pregnancy (Kingori et al. 2018; Markham et al. 2012; Schalet et al. 2014; UNESCO 2018; Collier-Harris and Goldman 2017).

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School-based CSE programmes have also proven effective in improving parents' competence, knowledge, and skills related to parent-adolescent sexual and reproductive health communication (Grossman et al. 2014), which has been shown to be minimal and delayed even in high-income countries (Collier-Harris and Goldman 2017). International guidelines on CSE, particularly the *International Technical Guidance on Sexuality Education* published by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (UNESCO 2018), take a human rights approach in outlining the 'essential components of effective sexuality education programmes' for national authorities. The UNESCO guidelines (2018, 99) reveal that 'in a small and growing number of low and middle-income countries, concerted, government-led efforts are underway and taking hold' to promote comprehensive forms of sexuality education.

Whilst CSE programmes have been established in many secondary schools internationally (Parker, Wellings, and Lazarus 2009; ARCSHS 2016; Haberland and Rogow 2015; Samuels et al. 2013), the socio-cultural sensitivities of some parents create barriers to implementation (Barr et al. 2014). Parental opposition to and support of the delivery of school-based CSE programmes has been highlighted by teachers, school nurses and school administrators in several countries, including Australia (Duffy et al. 2013; Johnson, Sendall, and McCuaig 2014), the USA (Barr et al. 2014), the UK (Turnbull, van Wersch, and van Schaik 2008), Canada (McKay et al. 2014), Iran (Latifnejad Roudsari et al. 2013), Israel (Sinai and Shehade 2018) and Egypt (Farrag and Hayter 2014). Examining parental attitudes towards school-based CSE programmes is therefore essential to assist school curriculum decision-makers, classroom teachers and school healthcare-providers to change policy and foster the development and implementation of these programmes (McKay et al. 2014; Barr et al. 2014; Sinai and Shehade 2018).

Adolescent CSE programmes in the Middle East

The sexual health needs of adolescents in the Middle East, including North Africa and Iran, are poorly understood and provided for (Tabatabaie 2015b; Sinai and Shehade 2018). Significant barriers, particularly religious beliefs, obstruct the implementation of school-based CSE programmes (Tabatabaie 2015a, 2015b; Farrag and Hayter 2014; Roudi-Fahimi and Feki 2011; DeJong et al. 2005; Jaffer et al. 2006; Merghati-Khoei, Abolghasemi, and Smith 2014), despite views in the Holy Quran and Sunna/Hadith concerning sex and sexuality as fundamental aspects of the individual's life, and reinforcing the responsibility of Muslim parents to educate their children on sexual behaviour (Almany 2009; Tabatabaie 2015a; Quran 2018, 2,23,39; Sinai and Shehade 2018).

Across the Middle East, CSE programmes are often considered part of Western social mores and perceived as incompatible with Islamic values and norms that do not condone premarital sexual activity (Farrag and Hayter 2014; DeJong et al. 2005; Merghati-Khoei, Abolghasemi, and Smith 2014). Despite this, a study of a school counsellors in Iran concluded that the introduction of school-based CSE was necessary given contemporary sexual behaviours among young people (Tabatabaie 2015b). Parental assumptions, which contrasted with the counsellors' views, were that their children should abide by the tenets of Islamic faith in line with Iran's strong sociocultural and legal disapproval of, and the family dishonour and shame associated with, premarital sexual activity (Tabatabaie 2015b; Orgocka 2004). In the Middle East, parents rarely talk

to their children regarding sexual matters, and schools rarely provide sufficient sexual health information (Farrag and Hayter 2014; Merghati-Khoei, Abolghasemi, and Smith 2014; Gańczak et al. 2007; Sinai and Shehade 2018) despite schools globally being recommended to do so by UNESCO guidance on the provision of CSE (UNESCO 2018).

Internationally, sexual activity among adolescents is well documented (Mitchell et al. 2014; CDC 2017; WHO 2018a). The assumption that Islamic adolescents in Middle Eastern countries are not sexually active is incorrect (Khalajabadi-Farahani, Cleland, and Mehryar 2011; Mohtasham et al. 2009; Vakilian, Mousavi, and Keramat 2014) and has contributed to a failure to meet the CSE needs of young people. The modernisation of Middle Eastern countries, the growth of social media use and higher education levels are associated with increasing age of marriage and women's greater participation in society, making young people of both sexes more likely to engage in premarital sex (Mosavi et al. 2014; Sinai and Shehade 2018). In Oman, the mean age of marriage for women with university education is 26 years, compared with 17 years for those with no education or high school education (Roudi-Fahimi and El Feki 2011). Moreover, the mass media and advanced communication technology provide plentiful conduits of sexual information. Young people in studies across the Middle East, for example, in Oman (Jaffer et al. 2006; Oman MOH and WHO 2012), Iran (Mosavi et al. 2014), the Kingdom of Saudi Arabia (KSA) (Alquaiz, Almuneef, and Minhas 2012), and the United Arab Emirates (UAE) (UAE MOH and WHO 2012), report receiving most of their sexual and reproductive health information from friends, the social media and the Internet. However, many are vulnerable to receiving incorrect or misleading information from these sources, resulting in inadequate preparation for their sexual lives (Mosavi et al. 2014; Tabatabaie 2015a).

According to the 2018 census, the population of Oman is about 4.5 million, of whom 2.5 million are Omani and 2 million are non-Omani residents (Oman NCSI 2018). In the last 40 years, Oman has undergone rapid development and modernisation, resulting in vast exposure to the social media (Oman NCSI 2018). Whilst young people aged 10 to 19 years account for approximately 50% of the total Omani population (Oman MOH and WHO 2018; Oman NCSI 2018), there are as yet no school-based CSE programmes or services. Most Omani adolescents reported a lack of sexual and reproductive health knowledge including that concerning HIV, STIs and contraception (Oman MOH and WHO 2012). Schools in Oman are segregated by gender. In both boys and girls schools, the sexual and reproductive health curriculum is limited to covering the physiological aspects of the reproductive system (Oman MOE 2018). Omani school nurses do not provide CSE and their activities are limited to general health screening, vaccination, first aid and lectures related to the biology of HIV, smoking, unhealthy diet and physical inactivity (Oman MOH, and WHO 2018).

Viral hepatitis A, B and C are among the most common communicable diseases in Oman, and significant increases in HIV have been reported among young people aged 18 to 35 years (Oman CDSC 2018). For example, a total of 1,250 HIV cases were reported among Omanis at the end of 2011, a figure which had risen to 2,506 by the end of 2014 (Oman NCSI 2018). The HIV prevalence rate among Omani adults aged 15 to 49 was estimated to be around 0.16% in 2017, which may be considered a high rate for a small population, suggesting that Oman would benefit from immediate interventions focusing on high-risk sexual behaviours (Oman MOH, and WHO 2018).

This paper reports on the quantitative results for parents from a larger mixed-methods study of the attitudes and beliefs of parents, school nurses, and school teachers on implementation of school-based CSE programmes in Oman. As fathers in Oman are influential in educating their young sons about sexual matters, and similarly mothers for their daughters, exploring the attitudes and beliefs of mothers and fathers regarding school-based CSE programmes is key to assessing the barriers and socio-cultural challenges to the provision of these programmes. It is also central to creating secondary school-based policy for the future design and implementation of CSE programmes in countries of predominantly Islamic faith.

Materials and methods

Study design and participants

The methodology for this study drew on methods applied in other recent research conducted in Oman (Jaffer et al. 2006; Oman MOH and WHO 2012), the KSA (Alquaiz, Almuneef, and Minhas 2012), the UAE (Gańczak et al. 2007) and Iran (Mohtasham et al. 2009). To date, in the Middle East studies of parental attitudes towards school-based CSE programmes have been mainly conducted in Iran (Latifnejad Roudsari et al. 2013; Merghati-Khoei, Abolghasemi, and Smith 2014; Khalajabadi-Farahani et al. 2007; Mosavi et al. 2014; Ramezankhani et al. 2014) using small sample sizes and are generally limited to the attitudes and beliefs of mothers. This mixed-methods study, comprising quantitative and qualitative research using a two-phase sequential explorative design, was conducted in the large urban district of Saham, Oman, beginning in May 2016. The district of Saham has a large population and more public schools (n = 30) than other districts (Oman MOE 2018; Oman NCSI 2018), including 15 public secondary schools (8 boys' schools and 7 girls' schools). Each school has one female school nurse, approximately 8 to 14 science teachers, and an average of 350 to 400 students in grades 7 to 9 (Oman MOE 2018).

Sampling

Two public pre-secondary schools (grades 5 to 10),[1] one for male students, the other for females, were selected from the Saham district using the convenience sampling approach common in CSE quantitative studies (Barr et al. 2014; McKay et al. 2014). Time and cost restrictions ruled out probability sampling approaches. A convenience sample of 250 parents comprising an equal number of mothers and fathers of children aged 12 to 14 years was then drawn from each of the two schools. A statistical power analysis was performed for sample size estimation. The effect size in this 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. Participants were invited through the school administration to complete a self-administered questionnaire in Arabic (see online appendix 1), the national language of Oman. SMS and letter reminders were sent to parents who had not completed the survey three weeks after the first invitation. Classroom teachers distributed the surveys sealed in envelopes for privacy 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 survey in an

attached enveloped through their children or return it in another way to the school administration. The completed surveys were then passed on to the researcher.

Measurement

The Survey on Parent Attitudes towards Sexual Health Education developed by Weaver et al. (2002), informed the design of the survey and was translated into Arabic. Further modifications were made following a review of the relevant CSE literature for the Middle East as well as the qualitative results of an earlier phase of this study, which involved focus group discussions with parents, teachers, and school nurses. Forward- and back-translation was used to check the accuracy of the Arabic version of the survey and avoid changes of meaning (WHO 2018b). The school grades associated with the original survey were modified so as to be consistent with those in Oman. In addition, two new questions related to Islamic beliefs and gender were added into the survey: 1) parental attitudes towards aligning CSE programmes with Islamic beliefs, and 2) parental comfort toward discussing sexual matters with the opposite gender (see online appendix 2).

School-based CSE was defined at the beginning of the questionnaire, which comprised 15 questions in five parts. Part A examined parents' attitudes and beliefs toward school-based CSE programmes using 5-point Likert scales (1 = strongly disagree to 5 = strongly agree), exploring issues such as whether CSE should be provided in schools; whether CSE should accord with Islamic rules and regulations; and whether the school and parents should share responsibility for providing adolescents with CSE. In addition, parents were asked to indicate the grade level at which they thought CSE should begin (1–4, 5–10, 11–12, or should not be provided); the quality of the CSE that their adolescents have received in school; and the extent to which they were comfortable with their children receiving CSE from six different sources (Table 1).

In Part B, parents were asked to rate on a 5-point scale (1 = not at all important to 5 = extremely important) the importance of including each of eight different topics in the CSE curriculum (Table 2). In Part C, parents were asked to indicate the grade level at which they thought schools should begin teaching each of 13 CSE topics (1–4, 5–10, 11–12, or should not be included) (Table 3). Part D required parents to evaluate their level of comfort and sexual health knowledge in conducting CSE with their children at home. Additionally, parents were asked to evaluate the depth of discussion of items on the same list of eight CSE topics as in part B with their children at home using a 4-point scale (1 = not at all to 4 = in great detail). Finally, in Part E, parents were asked to provide relevant demographic information (gender, age, religion, the age of children and their own education level).

Prior to piloting, the content of the parental survey was assessed by two independent expert assessors with experience and knowledge of Middle Eastern culture regarding youth CSE programmes. The assessors considered the study highly relevant to Omani culture in terms of its clarity, appropriateness and relevance (1 = not relevant to 4 = very relevant). Reliability statistics for the survey items following minor modifications showed good internal consistency with Cronbach's $\alpha = 0.8$. The earlier Weaver survey has an internal consistency of 0.86 and 0.90 (Byers, Sears, and Weaver 2008), and it has been validated and used in other CSE studies (McKay et al. 2014) including with Muslim parents (O'Sullivan, Byers, and Mitra 2018).

Table 1. Parental rating by source of CSE.

Sources	Parents [N]	Not at all important	Somewhat important	Important	Very important	Extremely important	Means [Standard Deviation]	*t-test p value [Sig. 2-tailed]*
Parents	Fathers [114]	0%	9.6%	15.8%	29.8%	44.7%	4.10 [0.995]	t = −2.87 [0.004]
	Mothers [125]	0%	3.2%	10.4%	26.4%	60%	4.43 [0.807	
	Total Parents [239]	0%	6.3%	13%	28%	52.7%	4.27 [0.915]	
School nurses	Fathers [114]	6.1%	13.2%	15.8%	36%	28.9%	3.68 [1.200]	t = −0.30 [0.760]
	Mothers [125]	1.6%	8.8%	29.6%	35.2%	24.8%	3.73 [0.987]	
	Total Parents [239]	3.8%	10.9%	23%	35.6%	26.8%	3.71 [1.091]	
School teachers	Fathers [114]	3.5%	8.8%	16.7%	39.5%	31.6%	3.87 [1.069]	t = 0.87 [0.381]
	Mothers [125]	0.8%	5.6%	28%	48%	17.6%	3.76 [0.837]	
	Total Parents [239]	2.1%	7.1%	22.6%	43.9%	24.3%	3.81 [0.954]	
Friends/Peers	Fathers [114]	7.9%	33.3%	5.3%	1.8%	1.8%	1.56 [0.820]	t = −0.13 [0.891]
	Mothers [125]	57.6%	32%	6.4%	3.2%	0.8%	1.58 [0.816]	
	Total Parents [239]	57.7%	32.6%	5.9%	2.5%	1.3%	1.57 [0.816]	
Religious leaders	Fathers [114]	6.1%	11.4%	28.1%	23.7%	30.7%	3.61 [1.208]	t = −1.19 [0.235]
	Mothers [125]	4.8%	8%	20%	37.6%	29.6%	3.79 [1.102]	
	Total Parents [239]	5.4%	9.6%	23.8%	31%	30.1%	3.71 [1.155]	
Media (Internet, magazines, videos, movies)	Fathers [114]	44.7%	33.3%	11.4%	4.4%	6.1%	1.94 [1.139]	t = −0.19 [0.846]
	Mothers [125]	48%	26.4%	12%	8%	5.6%	1.97 [1.198]	
	Total Parents [239]	46.4%	29.7%	11.7%	6.3%	5.9%	1.95 [1.168]	

Table 2. Importance parents assigned to possible topics within the CSE curriculum.

Topics	Parents [N]	Not at all important	Somewhat important	Important	Very important	Extremely important	Means [Standard Deviation]	*t-test p value [Sig. 2-tailed]*
B1. Components of reproductive systems	Fathers [114]	7%	13.2%	36%	18.4%	25.4%	3.42 [1.204]	t = −0.62 [0.535]
	Mothers [125]	4%	12.8%	29.6%	35.2%	18.4%	3.51 [1.060]	
	Total Parents [239]	5.4%	13%	32.6%	27.2%	21.8%	3.47 [1.129]	
B2. Puberty	Fathers [114]	0.9%	3.5%	33.3%	25.4%	36.8%	3.94 [0.962]	t = −0.64 [0.519]
	Mothers [125]	0%	4%	26.4%	33.6%	36%	4.02 [0.889]	
	Total Parents [239]	0.4%	3.8%	29.7%	29.7%	36.4%	3.98 [0.923]	
B3. Reproduction	Fathers [114]	17.5%	27.2%	28.1%	8.8%	18.4%	2.83 [1.336]	t = 0.39 [0.696]
	Mothers [125]	18.4%	25.6%	27.2%	18.4%	10.4%	2.77 [1.245]	
	Total Parents [239]	18%	26.4%	27.6%	13.8%	14.2%	2.8 [1.287]	
B4. Birth control methods & safer sex practices	Fathers [114]	38.6%	27.2%	17.5%	2.6%	14%	2.26 [1.370]	t = 1.57 [0.117]
	Mothers [125]	44.8%	29.6%	13.6%	4.8%	7.2%	2.0 [1.198]	
	Total Parents [239]	41.8%	28.5%	15.5%	3.8%	10.5%	2.13 [1.287]	
B5. HIV/AIDS and others sexually transmitted	Fathers [114]	0%	2.6%	26.3%	17.5%	53.5%	4.22 [0.929]	t = 0.72 [0.472]
	Mothers [125]	0%	8.8%	20%	20.8%	50.4%	4.13 [1.024]	
	Total Parents [239]	0%	5.9%	23%	19.2%	51.9%	4.17 [0.979]	
B6. Abstinence	Fathers [114]	6.1%	6.1%	26.3%	15.8%	45.6%	3.89 [1.232]	t = −0.45 [0.650]
	Mothers [125]	7.2%	8.8%	13.6%	21.6%	48.8%	3.96 [1.279]	
	Total Parents [239]	6.7%	7.5%	19.7%	18.8%	47.3%	3.92 [1.255]	
B7. Personal Safety (to prevent child sexual abuse)	Fathers [114]	0%	4.4%	11.4%	20.2%	64%	4.44 [0.863]	t = −1.83 [0.068]
	Mothers [125]	0%	3.2%	7.2%	12.8%	76.8%	4.63 [0.757]	
	Total Parents [239]	0%	3.8%	9.2%	16.3%	70.7%	4.54 [0.13]	
B8. Sexual Decision-making skills	Fathers [114]	4.4%	7.9%	26.3%	20.2%	41.2%	3.86 [1.174]	t = −0.83 [0.406]
	Mothers [125]	2.4%	11.2%	16.8%	24.8%	44.8%	3.98 [1.136]	
	Total Parents [239]	3.3%	9.6%	21.3%	22.6%	43.1%	3.92 [1.153]	

Table 3. Grade level at which parents thought specific topics should be introduced within the school curriculum.

Topics:	Parents [N]	1–4	5–10	11–12	This topic should not be included	Means [Standard Deviation]	*t-test p value [Sig. 2-tailed]*
C1. Components of reproductive systems	Mothers [125]	11.2%	58.4%	26.4%	4%	2.23 [0.697]	t = 1.31
	Fathers [114]	7%	57%	29.8%	6.1%	2.35 [0.704]	[0.191]
	Total parents [239]	9.2%	57.7%	28%	5%	2.29 [0.71]	
C2. Puberty	Mothers [125]	4.8%	91.2%	3.2%	0.8%	2.00 [0.336]	t = 2.39
	Fathers [114]	0.9%	88.6%	8.8%	1.8%	2.11 [0.394]	[0.057]
	Total parents [239]	2.9%	90%	5.9%	1.3%	2.05 [0.368]	
C3. Nocturnal emissions	Mothers [125]	1.6%	49.6%	38.4%	10.4%	2.80 [0.699]	t = −2.11
	Fathers [114]	0%	63.2%	33.3%	3.5%	2.40 [0.560]	[0.036]
	Total parents [239]	0.8%	56%	36%	7.1%	2.49 [0.641]	
C4. Menstruation	Mothers [125]	3.2%	92%	3.2%	1.6%	2.03 [0.358]	t = 2.51
	Fathers [114]	1.8%	81.6%	14.9%	1.8%	2.50 [0.459]	[0.013]
	Total parents [239]	2.5%	87%	8.8%	1.7%	2.18 [1.352]	
C5. Reproduction	Mothers [125]	0.8%	15.2%	64%	20%	3.03 [0.621]	t = −0.78
	Fathers [114]	0%	14.9%	72.8%	12.3%	2.97 [0.523]	[0.436]
	Total parents [239]	0.4%	15.1%	68.2%	16.3%	3 [0.576]	
C6. Birth control methods & safer sex practices	Mothers [125]	0%	7.2%	47.2%	45.6%	3.38 [0.619]	t = −1.95
	Fathers [114]	0%	9.6%	57.9%	32.5%	3.23 [0.610]	[0.051]
	Total parents [239]	0%	8.4%	52.3%	39.3%	3.31 [0.619]	
C7. Abstinence	Mothers [125]	0%	26.4%	64.8%	8.8%	2.82 [0.569]	t = −0.55
	Fathers [114]	1.8%	28.9%	58.8%	10.5%	2.78 [0.648]	[0.583]
	Total parents [239]	0.8%	27.6%	61.9%	9.6%	2.80 [0.607]	
C8. HIV/AIDS and others Sexually transmitted diseases	Mothers [125]	5.6%	58.4%	35.2%	0.8%	2.31 [0.588]	t = −0.30
	Fathers [114]	3.5%	65.8%	28.9%	1.8%	2.29 [0.560]	[0.762]
	Total parents [239]	4.6%	61.9%	32.2%	1.3%	2.30 [0.574]	
C.9 Teenage pregnancy	Mothers [125]	0%	30.4%	48%	21.6%	2.91 [0.719]	t = −0.56
	Fathers [114]	0.9%	30.7%	50%	18.4%	2.86 [0.715]	[0.573]
	Total parents [239]	0.4%	30.5%	49%	20.1%	2.89 [0.716]	
C10. Personal safety to prevent child sexual abuse	Mothers [125]	61.6%	30.4%	8%	0%	1.46 [0.642]	t = 2.74
	Fathers [114]	47.4%	36%	13.2%	3.5%	1.73 [0.823]	[0.007]
	Total parents [239]	54.8%	33.1%	10.5%	1.7%	1.59 [0.744]	
C11. Homosexuality	Mothers [125]	0.8%	46.4%	28.8%	24%	2.76 [0.827]	t = −1.25
	Fathers [114]	0.9%	50%	34.2%	14.9%	2.63 [0.744]	[0.210]
	Total parents [239]	0.8%	48.1%	31.4%	19.7%	2.7 [0.789]	
C12. Masturbation	Mothers [125]	1.6%	49.6%	29.6%	19.2%	2.66 [0.803]	t = −1.44
	Fathers [114]	1.8%	58.8%	25.4%	14%	2.52[0.755]	[0.149]
	Total parents [239]	1.7%	54%	27.6%	16.7%	2.59 [0.782]	
C13. Sexuality in the media	Mothers [125]	7.2%	43.2%	32.8%	16.8%	2.59 [0.853]	t = −3.42
	Fathers [114]	19.3%	50%	21.1%	9.6%	2.21 [0.867]	[0.001]
	Total parents [239]	13%	46.4%	27.2%	13.4%	2.41 [0.879]	

Data analyses

Data were analysed using SPSS version 24.0. Descriptive statistics were calculated for each variable. Independent samples *t*-tests were used to compare the mean and *SD* between fathers and mothers regarding their attitudes and beliefs towards school-based CSE programmes.

Ethical considerations

Ethical approval was granted by the RMIT University Science Engineering & Health College Human Ethics Advisory Network (Reference No. BSEHAPP 40–15) and by the Oman Ministry of Education. Parents were provided with an information form and instructed that informed consent would be given by submission of the completed survey. They were assured of confidentiality and that no identifiable information would be collected.

Results

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 years. In this 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 Islamic faith and Omani citizens, and generally had high levels of education (Table 4).

Parental support for school-based CSE programmes in Oman

Most parents (72.8%) supported the provision of school-based scientific CSE programmes, with 22% somewhat agreeing, 52.7% agreeing, and 20.1% strongly agreeing.

Table 4. Characteristics of total sample.

Characteristic	Category	n	%
Sex	Male	114	47.7%
	Female	125	52.3%
Age (years)	Under 30	12	5%
	30–39	144	60.3%
	40–49	69	28.9%
	50+	14	5.9%
Type of children	A boy/boys only studying in class 7 to 9	60	25.1%
	A girl/girls only studying in class 7 to 9	65	27.2%
	Both boys and girls studying in class 7 to 9	114	47.7%
Educational level	Less than high school	45	18.8%
	High school	85	35.6%
	University/undergraduate Diploma degree	41	17.2%
	University/undergraduate Bachelors degree	55	23%
	University/postgraduate degree	13	5.4%
Religion	Muslim	239	100%
Nationality	Omani	239	100%

However, a small number of parents (4.6%) did not support the provision of CSE in school. Almost all parents (95.8%) agreed that CSE should be provided in accordance with Islamic rules and regulations requiring abstinence from pre-marital sexual activity, with 33.9% agreeing and 61.9% strongly agreeing. Most parents (89.2%) indicated that the school and parents should share responsibility for providing young people with CSE, with 42.3% agreeing and 46.9% strongly agreeing. One-fifth of parents (20.5%) stated that CSE should start in primary school (i.e. at grades 1 to 4, with students aged 6 to 9 years), almost half of the parents (46.4%) indicated it should start in middle school (i.e. at grades 5 to 10, with students aged 10 to 15 years), and 28.5% indicated it should start in high school (i.e. at grades 11 to 12, with students aged 16 to 17 years). Importantly, an independent-sample *t*-test showed no significant difference in these results between the attitudes of mothers and fathers. However, the results of a one-way analysis of variance (ANOVA) showed that there was a significant difference between the attitudes of parents with higher and lower education levels towards the importance of CSE in school ($F(4, 234) = 4.097$, $p = .003$) and the appropriate age to start teaching it ($F(4, 234) = 2.991$, $p = .020$). Parents with higher education were more supportive of introducing CSE in school and wanted it to be introduced earlier in grades 1 to 4. In addition, a one-way ANOVA found a significant difference between age groups regarding the appropriate age to start teaching CSE ($F(3,235) = 3.36$, $p = .019$) such that young parents preferred that CSE be introduced earlier in grades 1 to 4 (Table 5).

Parental comfort with different sources of CSE

Parents were asked to indicate the extent to which they were comfortable with their children receiving CSE from each of six different sources (Table 1). 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 parent as a source of CSE ($t(237) = -2.87$, $p= 0.004$). An independent-samples *t*-test indicated that mothers rated parents as an extremely important source of CSE significantly more than fathers did.

Importance of different sexual and reproductive health topics

Parents were asked to rate the importance of including each of eight different sexual health topics in CSE (see Table 2). An independent-samples *t*-test found no significant difference between the attitudes and beliefs of mothers and fathers towards the importance of the eight topics suggested. Many parents rated five topics (puberty, HIV and other sexually transmitted diseases, abstinence, personal safety to prevent child sexual abuse, and sexual decision-making skills) as 'very important' or 'extremely important' ($M = 4$–5). The mean ($M = 3$) responses to the topics of reproduction and components of reproductive systems suggested that parents viewed these two topics as 'important', while the mean ($M = 2$) 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'.

Table 5. Parental attitudes towards introduction of school-based CSE by age and education level.

	Age			Education Group		
Variables	≤39 (n = 156) *M* (SD)	40–49 (n = 69) *M* (SD)	≥50 (n = 14) *M* (SD)	High secondary or less (n = 130) *M* (SD)	Diploma or Bachelors degree (n = 96) *M* (SD)	Post-graduate Degree (n = 13) *M* (SD)
Importance of CSE in school[a]	3.96 (0.76)	3.80 (0.77)	3.64 (1.08)	3.87 (0.76)	4.05 (0.73)	4.46 (0.66)
CSE should be matched with Islamic rules and regulations[a]	4.59 (0.56)	4.61 (0.57)	4.64 (0.49)	4.56 (0.5)	4.67 (0.47)	4.69 (0.63)
The school and parents should share responsibility[a]	4.17 (0.71)	4.12 (0.88)	4.07 (0.82)	4.27 (0.83)	4.40 (0.71)	4.62 (0.65)
CSE should start in:[b]	1.80 (0.78)	2.30 (0.81)	2.64 (0.84)	2.47 (0.78)	2.09 (0.75)	1.69 (0.63)

Note. CSE = Comprehensive sexuality education.
[a]Mean scores vary from 1 (*strongly disagree*) to 5 (*strongly agree*).
[b]Mean scores vary from 1 (*grades 1–4*), 2 (*grades 5–10*), 3 (*grades 11–12*) to 4 (*there should be no CSE in school*).

Parents' preferences regarding the grade level for introducing specific CSE topics

Parents were asked to indicate the grade level at which they thought schools should start teaching each of the thirteen CSE topics (Table 3). There was strong support for the inclusion of all thirteen topics in the CSE curriculum, with 80% and 99% of parents supporting the inclusion of each topic at some grade level from 1 to 12, except for birth control methods and safer sex practices, supported by only 61% of parents for inclusion at some grade level.

The mean (M = 1) responses of parents' preferences indicated that more than half of the parents (54.8%) preferred personal safety to be introduced in grades 1 to 4 (students aged 6 to 9 years), with, a third (33.1%) responding in favour of grades 5 to 10 (students aged 10 to 15 years). The mean (M = 2) responses for topics considered controversial in Omani culture such as components of reproductive systems, puberty, nocturnal emissions, menstruation, HIV and others sexually transmitted diseases, homosexuality, masturbation, and sexuality in the media suggest that parents wanted these topics introduced later, in grades 5 to 10 (students aged 10 to 15 years), with percentages ranging between 90% and 47%.

The mean (M = 3) responses for four other topics (reproduction, control methods and safer sex practices, abstinence, and teenage pregnancy) showed that many parents wanted these topics to be introduced later in grades 11 to 12 (students aged 16–17), with percentages ranging between 68% and 49%. An independent-samples t-test found a significant difference between mothers and fathers in their preference for starting grade level only on the topics of nocturnal emissions, menstruation, personal safety to prevent child sexual abuse, and sexuality in the media. Descriptive statistics indicated that mothers preferred the topics of nocturnal emissions and sexuality in the media to be introduced later in grades 11 to 12, and the topics of menstruation and personal safety to prevent child sexual abuse to be introduced earlier in 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 (Table 3).

Discussion

This study is so far as we know the first of its kind to examine parental attitudes and beliefs toward a school-based CSE programme in Oman (Oman MOH, and WHO 2018). The participant response rate of 95.6% was comparable to those reported in other Middle Eastern CSE studies, which report response rates of between 90 and 98% and attrition rates between 5 and 10% (Jaffer et al. 2006; Oman MOH and WHO 2012; Alquaiz, Almuneef, and Minhas 2012; Gańczak et al. 2007).

Findings show strong parental support for introducing school-based CSE programmes in Oman, which is aligns with those of previous studies conducted among parents both in Middle Eastern countries, especially Iran (Merghati-Khoei, Abolghasemi, and Smith 2014; Mosavi et al. 2014), and in non-middle Eastern countries such as Canada (McKay et al. 2014; Weaver et al. 2002), the USA (Barr et al. 2014), the UK (Turnbull, van Wersch, and van Schaik 2008), Australia (Department of Health, Western Australia 2010) and India (O'Sullivan, Byers, and Mitra 2018). This level of parental support contrasts with

the fear reported among school teachers, school nurses and counsellors towards the delivery of CSE in school due to parental and community opposition (Duffy et al. 2013; Farrag and Hayter 2014; Sinai and Shehade 2018).

Of particular note is that the majority of Omani parents from the Saham District want CSE to comply with Islamic rules and regulations, particularly in relation to premarital sexual activity. Parental support for school-based CSE programmes that do not subvert Islamic values clearly indicates that discussion of sexual matters is not taboo but is acknowledged and respected in the Islamic religion. Moreover, parents' ratings of the inclusion of controversial sexual health topics such as sexual abstinence and homosexuality as 'very important' or 'extremely important' indicate a contemporary shifting sociocultural landscape in Oman. This cohort of parents was strongly aware of their children's exposure to sexual information through social media and held that a CSE programme could not ignore topics that were traditionally considered controversial and taboo. That said, and despite parents' overall enthusiasm for school-based CSE programmes, a significant proportion (40%) were not in favour for schools educating their children on safe sex and birth control. Parents also expressed anxiety about topics such as contraception and safe sex being taught about at a young age.

Omani parents were in favour of the inclusion of topics such as personal safety to prevent child sexual abuse early on, in grades 1 to 4 (i.e. with students aged 6 to 9 years). Support for the introduction of other topics in grades 5 to 10 suggests that parents want their children to receive education about these topics near or during the period of puberty, and to be provided with age-appropriate information.

This study also reveals parents' preferences for a shared responsibility with respect to CSE, with trained school personnel educating their children about sexual issues. Similar preferences have been shown by parents in other Middle Eastern contexts (Mosavi et al. 2014; Sinai and Shehade 2018). School teachers and school nurses must however, be adequately trained and resourced to deliver build trusted relationships and tailor discussion so as to align with adolescents' cognitive, social, emotional and physical development (Borawski et al. 2015).

Limitations

Although this study provides timely data regarding parental attitudes and beliefs in Oman, it has several limitations. First, the small and adventitious nature of the sample reduces the generalisability of the findings. However, this study was conducted in a district which has both a rural and urban population. In addition, as socioeconomic status and culture are fairly uniform throughout Oman and public schools have similar facilities and services (Oman MOE 2018), the two schools selected might be considered representative of schools in other regions of Oman. Second, inclusion in the study was limited to parents with children in grades 7 to 9 (ages 12–14) and thus, the attitudes of parents with younger and older students towards CSE programmes is unknown. Third, in Oman, the majority of people (60%) have high school or less than high school education (Oman NCSI 2018). The sample of this study had higher levels of education than this, and therefore participants' views may not be representative of parents with a lower level of education.

Conclusion

This study provides first-time baseline data regarding parental support for the provision of school-based CSE programmes in Oman. Parents supported the inclusion of a wide range of CSE topics, including controversial subjects. However, parents strongly recommended that the contents of the curriculum conform to Islamic religious beliefs and supported a shared responsibility between themselves and schools in delivering CSE to their children. Further qualitative studies of the attitudes and barriers of parents, teachers, and school nurses towards the implementation of school-based CSE covering birth control and safe sex will help strength the findings of this study and provide additional guidance and support to school administrators, school healthcare-providers, and teachers when designing the future CSE curriculum.

Note

1. Grades 1 to 4 include students aged 6–9 years; grades 5–10 include students aged 10–-15 years; and grades 11–12 include students aged 16–17 years.

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