

Research Paper

Exploring Sexual Behaviour and Associated Factors among Adolescents in Saudi Arabia: A Call to End Ignorance

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Accepted 6 April 2018*Keywords*Adolescent behavior
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Little is known about sexual behaviour, attitudes, and associated factors among adolescents in Saudi Arabia. A cross-sectional study using a multistage sampling technique was conducted among 453 male adolescents selected from high schools in Riyadh, Saudi Arabia. About 54.1% of the adolescents practiced masturbation daily and 38% had experienced sexual contact, while 67% had friends who had experienced sexual contact. The majority of adolescents (72.2%) believed men engage in sexual experience before marriage, and only 11.5% discussed sexual health issues with their parents. Most adolescents believed in the effectiveness of sex education (92.3%) and the need for school-based sex education (85.6%). The logistic regression analyses showed adolescent sexual activity was independently associated with age [adjusted odds ratio (AOR) = 1.5, 95% confidence interval (CI): 1.3–1.8, $p < 0.001$], daily masturbation (AOR = 2.1, 95% CI: 1.3–3.2, $p < 0.004$), friends who engaged in sexual activity (AOR = 2.8, 95% CI: 1.4–4.6, $p < 0.001$), and belief that men experience sexual contact before marriage (AOR = 5.1, 95% CI: 2.8–9.3, $p < 0.001$). The findings indicated that male adolescents had negative attitudes toward sexual activity and were involved in risky sexual behaviour. To mitigate these issues, schools and community networks should be involved in the delivery of a culturally sensitive sexual health-promoting programme.

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Adolescence refers to the stage of transition from childhood to adulthood in which many physiological and psychological changes are experienced, including puberty, which greatly influence adolescents' choices, decisions, and health. One of the primary aspects of adolescence is the development of sexuality. Adolescents habitually engage in behaviour that puts their current and future health at risk, including unsafe sexual activities. Almost all adolescents are at risk for contracting sexually transmitted infections (STIs), such as human immunodeficiency virus (HIV) infection, and are more prone to spreading them due to the lack of accurate health information, engagement in risky behaviour, regional and national conflicts, and the lack of adequate reproductive health services [1]. Over 40% of new infections worldwide occur in young people aged 15–25 years [2]. Every day, an estimated 5000 young people are infected with HIV worldwide, which results in nearly 2 million new infections per year [3]. The reported number of HIV infections within Saudi Arabia has increased over the last few years [4], indicating that conservative communities are not immune to STIs [5]; however, STI data in Islamic states, where nonmarital sexual activities are forbidden for religious reasons, are notably limited [6].

Sexual health is a crucial component of public health and an essential element of adolescents' physical, psychological, and social well-being.

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Adolescent sexual behaviour is influenced by multiple, complex sets of factors and determinants [7–12]. Adolescents in Saudi Arabia face immense challenges due to increasing globalisation, urbanisation, digital communications, economic challenges, and other external forces; and like other adolescents, they are approaching adulthood in a world that is vastly different from that of previous generations [13]. However, data on sexual behaviour in Saudi Arabia and other Arab countries are limited, likely because of religious and cultural condemnation of premarital sex, nonmarital sex, and homosexuality.

Many communities and families are uncomfortable with discussing adolescent sexuality, and prefer to remain in ignorance or deny its importance. In countries such as Saudi Arabia, it is difficult to openly discuss sexual issues and sexuality. Recognition and investigation of sexual health is impractical at times, if not completely unattainable, due to a variety of social, political, and cultural factors. Saudi society is different from Western societies in many respects, as it is a conservative country with strong Islamic values, and adolescent issues are expected to differ from those in the West. For example, adolescent pregnancies are common in the Western world but occur significantly less often in Saudi Arabia. Such beliefs have had a negative impact on Saudi public health by impeding any investigation into risky and harmful behaviour and phenomena, including adolescent sexuality. There are few data published on issues related to sexual and reproductive health in Saudi Arabia, especially research on risky sexual behaviour among adolescents.

The scope of the present research was to explore the sexual behaviour and attitudes of male adolescents in Riyadh, Saudi Arabia. The aim was to fill the current gap in knowledge about these issues and provide evidence that can inform policymakers, families, and communities in tackling challenges related to adolescent sexual health.

2. MATERIALS AND METHODS

This was a cross-sectional study using a multistage, stratified sampling technique. The populations selected for this survey included adolescents aged 15–20 years and attending all-male high schools in Riyadh, Saudi Arabia. A representative sample of three to six classes was randomly selected from each of the selected schools. A total of 477 adolescents were invited to participate in the study, and 453 completed the questionnaire.

The survey tool was based on insights gained from validated instruments used to assess sexual experiences among youth worldwide: the Youth Risk Behavior Surveillance, administered by the Centers for Disease Control [14], and the Health Behaviour in School-aged Children, conducted by the World Health Organization (WHO) [15]. Both questionnaires are similar; however, we selected the main socially acceptable equations from both questionnaires to explore adolescents' sexual behaviour. The questionnaire was developed in English, translated into Arabic, back-translated into English, and translated again into Arabic to ensure its validity, and there were no skips or filters. The questionnaires were distributed by the researcher in a classroom setting. The researcher began by introducing the study and its purpose and content, stressing that there were no right or wrong answers, and went over the consent procedures. The respondents were informed that they could refuse to respond to the entire questionnaire or any of its constituents, and they were requested to spread out across the classroom to ensure privacy. The researcher remained in the classroom while the respondents filled in the questionnaire and encouraged them to seek clarifications for any issues or concerns related to the terminology. It took about 30 minutes for the respondents to complete their questionnaires and check their responses.

To attract a greater number of respondents and increase the validity of the data, and due to the sensitivity of the topic, the survey was designed for anonymous and voluntary participation to protect the respondents' rights and privacy. The questionnaires were self-administered in the respondents' respective classrooms, thereby offering them privacy and confidentiality befitting the sensitive subject matter. The most sensitive questions were placed toward the end of the questionnaire, while the cover-page explained the purpose of the study, emphasised the importance of honest responses, assured strict confidentiality of the information supplied, and provided instructions for completing the questionnaire.

To ensure the questionnaire's validity and reliability and better inform its design, the questionnaire was piloted and pretested among small groups of high school students. Twelve students were interviewed to gain a better understanding of adolescent sexual behaviour, practices, terminology, and perceptions. Subsequently, a pilot study was conducted with 17 students, who did not participate in the main study, to confirm the appropriateness of the questionnaire and examine where the study might fail.

Current research on adolescent sexual behaviour focuses on one of two outcomes: pointing out risky sexual behaviour and identifying

related attitudes. In the present study, the dependent variable of premarital sex among adolescents was examined against several independent factors, such as sociodemographic background, attitudes toward sex, and sexual behaviour among peers. The respondents were asked if they ever had a sexual experience, which was defined as any sexual activity, such as deep kissing, genital touching, oral sex, and anal sex, and not only sexual penetration involving the genitals.

The Research Committee of the Ministry of Education in Riyadh authorised the study and approved the questionnaire. An official letter was issued to verify these permissions. The research protocol was reviewed by the Ethics Committee and Scientific Department at the Saudi Ministry of Education. Ethical approval was obtained from the Riyadh Department of the Saudi Ministry of Education. The students were also briefed about the confidentiality of their responses and that participation was completely voluntary.

Data completeness and accuracy were ensured by double-checking records upon completion of data entry. Descriptive analyses and binary regression analyses were conducted to examine the independent associations between adolescents' risky sexual behaviour, sexual-related attitudes, and sociodemographic factors. Adjusted odds ratios (ORs) and their 95% confidence intervals (CIs) were used as indicators for associative strength. A p -value <0.05 was considered statistically significant.

3. RESULTS

A total of 477 students from four all-male high schools in Riyadh, Saudi Arabia were invited to participate in the study. The final sample size included 453 male adolescents, as only 24 did not complete the questionnaire and were excluded from the study. The total response rate was 96%.

As shown in Table 1, the age of the respondents was 15–20 years, with a mean and median age of 17 years and standard deviation of 1.33. Of the 453 respondents, 183 (41%) were aged 15–16 years, 203 (45%) were aged 17–18 years, and 65 (14%) were aged 19–20 years.

In addition to the previous series of questions, students were also surveyed on their sexual behaviour and attitudes (Table 2). A total of 327 respondents (72.2%) believed that most men experience sexual intercourse before marriage. The number of respondents whose friends had engaged in sexual intercourse totalled about 303 (67%). Among the respondents, 245 (54.1%) regularly practiced masturbation at least once a day, whereas 208 (45.9%) did not practice masturbation regularly. A total of 172 (38%) reported having a sexual experience.

Most respondents (387, 85.6%) believed that adolescents needed school-based sex education, with 418 (92.3%) citing that sex education was effective and required for protection against STIs and establishing healthy sexual behaviour. The majority (422, 93.2%) also believed that religion played a crucial role in discouraging sexual behavioural problems. Among the respondents, 401 (88.5%) shared that they could not discuss sexual issues (i.e., sexual health and problems) with their parents.

The associations between the respondents' sexual experiences and sociodemographic variables were investigated via binary logistic regression. Table 3 shows that the only variable that was

Table 1 | Distribution of demographic characteristics in 453 respondents

Variables	n	Percentage (%)
Age (years)		
15–16	185	40.8
17–18	203	44.8
19–20	65	14.3
Father's education level (years)		
≤12	216	47.9
>12	235	51.2
Mother's education level (years)		
≤12	323	71.3
>12	130	28.7
Family style (living with...)		
Both parents	410	91.5
One parent	34	7.6
Relatives	4	0.9
School type		
Public school	270	60
Private school	183	40

Table 2 | Sexual attitudes, beliefs, and behaviour among 453 respondents

Attitudes and behaviour	n (%)
Regularly practice masturbation (at least once daily)	
Yes	245 (54.1)
No	208 (45.9)
Have had sexual experiences	
Yes	172 (38)
No	281 (62)
Have friends who have had sexual experiences	
Yes	303 (67)
No	150 (33)
Most men experience sexual intercourse before marriage	
Yes	327 (72.2)
No	126 (27.8)
Can discuss issues related to sexual health with my parents	
Yes	52 (11.5)
No	401 (88.5)
Believe in the effectiveness of sex education	
Yes	418 (92.3)
No	45 (6.7)
Religion is effective in protecting against risky sexual behaviour	
Yes	422 (93.4)
No	30 (6.6)
Need for school-based sex education	
Yes	387 (85.6)
No	66 (14.4)

independently and positively associated with sexual experience was age ($p < 0.001$, OR = 1.5, 95% CI: 1.3–1.8). Type of school, parental education level, and family style were not associated with the respondents' sexual experiences.

The associations between the respondents' sexual experiences and sexual behaviour, attitudes, and beliefs were also investigated (Table 4). The regression values, adjusted for the respondents' sociodemographic variables, show that regular masturbation at least once daily) was significantly associated with sexual experience ($p = 0.004$). The respondents' sexual experiences were also independently associated with peers who had sexual experiences ($p < 0.001$) and the belief that most men have sexual experiences before marriage ($p < 0.001$). The variables of "Sex education is effective for protecting against risky sexual behaviour," "Religion plays an effective role in protecting against risky sexual behaviour," "Male

Table 3 | Logistic regression for relationships between respondents' sexual experiences and sociodemographic variables

Variables	OR (95% CI)	p-Value
Age (years)	1.5 (1.3–1.8)	<0.001
School type		
Private school (ref)	–	–
Public school	1.1 (0.7–1.6)	0.772
Family style (living with...)		
One parent (ref)	–	–
Both parents	0.71 (0.3–1.5)	0.361
Fathers' education level (years)		
≤12 (ref)	–	–
>12	0.9 (0.7–1.5)	0.907
Mother's education level (years)		
≤12 (ref)	–	–
>12	1.3 (0.8–2.1)	0.301

ref, reference.

Table 4 | Adjusted logistic regression for relationship between respondents' sexual experiences and factors related to their sexual behaviour

Variables	AOR	95% CI	p-Value
Practicing masturbation			0.004
Not every day (ref)	–	–	–
≥Once a day	2.1	0.3–3.2	<0.001
Have friends who have had sexual experiences			<0.001
No (ref)	–	–	–
Yes	2.8	10.4–4.6	<0.001
Most men have sexual experiences before marriage			<0.001
No (ref)	–	–	–
Yes	5.1	2.8–9.3	0.187
Discuss sexual issues with parents			0.187
No (ref)	–	–	–
Yes	0.6	0.3–1.3	–0.355
Male adolescents need sex education			–0.355
No (ref)	–	–	–
Yes	1.4	0.7–2.8	0.269
Religion is effective for protecting against risky sexual behaviour			0.269
No (ref)	–	–	–
Yes	0.6	0.3–1.5	0.927
Sex education is effective for protecting against risky sexual behaviour			0.927
No (ref)	–	–	–
Yes	0.9	0.4–2.4	

The model was adjusted to participants' background; AOR, adjusted odds ratio; CI, confidence interval; ref, reference.

adolescents need sex education," and "I discuss sexual issues with my parents" were not significantly associated with sexual experiences.

4. DISCUSSION

The results of this study were unexpected. Most striking was the report that 38% had sexual experiences, and the majority of adolescents had friends who had sexual experiences, practiced masturbation daily, and believed that most men have sexual experiences before marriage. These findings indicated that adolescents in Saudi Arabia engaged in risky sexual behaviour and had negative attitudes, although premarital sexual contact is totally

forbidden and unacceptable in Saudi Arabia. These findings are important in many ways. First, regardless of religious instruction and cultural stigma against premarital sexuality, adolescents still engage in sexual risky behaviour. Second, due to socioeconomic development, globalisation and digital communications, adolescents in Saudi Arabia are like other adolescents in the world. They face similar challenges and engage in risky behaviour. Also, it may indicate that many of them do not take appropriate precautions to prevent the spread of STIs.

Unfortunately, no similar studies are available from surrounding Arabian Gulf countries, which limit accurate comparison. However, data from a nationwide study in the United States revealed that the prevalence of sexual intercourse among male high school students was 43.2% [16]. In Ireland, it was reported that 30.5% of all 15–17-year-old male adolescents had experienced sexual intercourse [17]. Data from a study conducted in Cameroon indicated that 41.4% of adolescent respondents had a history of sexual contact [18]. It has been suggested that, in most countries, the cultural shift toward marrying later has led to an increase in premarital sexual experiences [19]. Another interesting finding in the present study was that the percentage of respondents reporting the presence of premarital sexual experiences was significantly less than the percentage reporting they had peers who had sexual experiences. This indicates that the true percentage of male students who have had premarital sexual experiences might be higher.

As shown in Table 3, parental education level was not found to be an important determinant of sexual activity among adolescents. Previous studies have similarly reported that parental education level is not associated with the presence of sexual experiences among adolescents in Saudi Arabia [20]. This can be explained by the indication that adolescents and parents do not communicate about sexual health and behaviour, as shown by the present study (i.e., 11.5% of respondents confirmed that they discuss sexual issues with their parents). Similarly, it has been reported that only 15.8% of female students discuss these matters with their mothers in Saudi Arabia [21].

Regarding students' attitudes concerning premarital sex, the majority of respondents believed that most men have sexual experiences before marriage and had friends who had sexual experiences. As shown in Table 4, the binary logistic regression analyses revealed that individuals who had sexual experiences were nearly three times as likely to have a friend who had sexual experiences, and five times as likely to hold the belief that most men have sexual experiences before marriage. This finding indicates a negative attitude among the respondents towards sex, which may influence their sexual decisions and behaviour. Adolescents are influenced by their friends and others around them; it has been documented that peer pressure and social norms influence sexual behaviour among adolescents [22–24]. Although all major religions prohibit premarital sexual contact, Islam has the greatest documented influence on premarital and extramarital sex [25]. However, the present study revealed that holding the belief that religion protects against risky sexual behaviour was not significantly associated with sexual behaviour among Saudi adolescents. The prevalence of this belief among the respondents therefore seems passive and may be based on the desire to conform to social norms. As recommended in a previous study [19], comprehensive behavioural interventions that consider social and cultural contexts are needed to modify social norms and tackle other structures that contribute to risky sexual behaviour.

Given the lack of sex education in Saudi schools, it is not surprising that most students recognise the need for school-based sex education. In the present study, nine out of every 10 respondents reported a need for school-based education. School presents a good opportunity for students to gain direct knowledge and learn about healthy attitudes. It has been reported that sexual health education provides young people with the knowledge and skills to make healthy choices about sex and can prevent negative consequences to sexual health [26]. To ensure this educational experience is successful and effective, we should pay attention to the entire school environment. We should also identify the problems and needs of young people and explore how to reduce potential risks. It has been suggested that national policies and comprehensive strategies for modifying and promoting healthy behaviour among adolescents are urgently needed in Saudi Arabia [27–29].

There were some potential limitations to the present study. The main limitation was related to cultural taboos. Due to political and cultural constraints, adolescent female students were not included in this study; however, there is no doubt that their future role in promoting family health is fundamental. The study was also limited by the sensitivity of the research topic, and some important questions were not included in the questionnaire due to their sensitive and/or inappropriate nature. For example, questions about the age at which respondents' first experienced sexual intercourse, the presence of multiple sexual partners, lifetime partner activities, and gender double standards were avoided. Another limitation was that because the study design was cross-sectional, the results can only be considered as exploratory, and causality cannot be confirmed. Finally, as premarital sex is prohibited by Islam and culturally unacceptable in Saudi Arabia, it is impossible to determine whether the adolescents in this study under-reported their sexual experiences.

Despite these limitations, one of the strengths of this study was that it was a novel investigation of sexual behaviour and attitudes among adolescents in Saudi Arabia. This study highlighted the critical need for sexual interventions among Saudi adolescents and could serve as a baseline for more extensive research on this topic in the future.

5. CONCLUSION

The present study provides evidence that a considerable number of Saudi adolescents engage in risky sexual behaviour and have unhealthy attitudes and beliefs toward sexual health and behaviour. It is clear that sexual activity is common among adolescents, and many of the behaviours that they engage in put them at risk for contracting STIs. This study also has important programmatic and policy implications. School-based interventions are widely seen as the most appropriate strategy for promoting adolescent sexual health. Schools are not only tasked with teaching traditional subjects, but also play a vital role in delivering fundamental health education programs to youth. Sexual education should be addressed and reinforced from an early age to safeguard students' lives and promote health. The development of effective interventions must take social, cultural, and religious influences into account. Encouragement and support for future research investigating risky sexual behaviour and other unsafe activities among adolescents is urgently needed. There is a need for a better understanding of the social and cultural determinants behind adolescents' engagement in risky sexual behaviour, as well as the protective factors, so that

sexual interventions can be comprehensive and target the most influential stakeholders in adolescent sexual health.

CONFLICTS OF INTEREST

The author declares no conflict of interest.

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