ORIGINAL ARTICLE

An Exploratory Study of Reproductive Health Awareness and Information Seeking Behavior Among Saudi Female Students

Fehmida Tehsin[1], Walaa Hussain Al Amer,[2] Hamidah Moahmmed Aleid[3], Esha Yasir[4], Fatimah Hassan Almasoud[5], Batool Abdullah Alahmary[6]

ABSTRACT

Objective: To explore sexual reproduction-related awareness and knowledge, information-seeking behavior, and related information resources needed among Saudi female students.

Study Design: Descriptive cross-sectional study.

Place and Duration of Study: The study was conducted in King Faisal University, Al Ahsa Saudi Arabia from 1st September 2023 to 20th November 2023.

Materials and Methods: A questionnaire-based cross-sectional study was conducted at King Faisal University Saudi Arabia. A sample of 328 preparatory-year female students was evaluated on reproductive health awareness through a randomized sampling method. Data was cleaned in Excel and Analyzed in IBM SPSS 29.

Results: The study involved 328 female students and highlights significant findings in reproductive health awareness. Notably, 26.2% (85) experienced irregular menstrual cycles, 99.1% (325) used sanitary pads, and 78.4% (257) and 41.2% (135) discussed their first period, primarily with mothers. TV (17.1%) and news (16.2%) were the primary sources of reproductive health information while 93.9% (307) had contraceptive knowledge, and 84.5% (277) understood reasons for use. Challenges in obtaining information included uncertainty (30.6%) and shame (29.1%). Preferences included information on reproductive/sexual health (21.1%) and sexual/premarital preparation classes (18.3%). The educational status of fathers significantly correlated with sexual and reproductive health awareness and knowledge (p=0.040).

Conclusion: The study revealed gaps in female preparatory year students' awareness of reproductive health. It underscores the importance of enhancing the accessibility of reproductive health knowledge resources and improving communication channels with parents to attain first-hand appropriate knowledge of reproductive health.

Key Words: *Awareness, Adolescent Health, Parental Role, Sexual and Reproductive Health.*

Introduction

Sexual and reproductive health is a critical cornerstone for women's empowerment and overall well-being in the field of health. Understanding one's body, making informed judgments about intimacy and relationships, getting access to quality healthcare, and navigating the process of making reproductive decisions are just a few of the many facets that fall under this broad category.[1] It is in this context that raising females' awareness of sexual and reproductive health issues becomes crucial.[2]

In comparison to other age groups, adolescents and young adults in Western and European countries have disproportionately high rates of avoidable sexual health problems, such as HIV, STIs, and unplanned pregnancies.[3] In this situation, health professionals frequently don't have a thorough grasp of how to provide services that are sensitive to the requirements of teenagers.[4] Studies have shown how important it is for teenage girls to have a greater understanding of sexual and reproductive health since sociocultural norms, healthcare accessibility, educational possibilities, and personal empowerment all have a significant impact on women's health.[5,6]

Adolescent girls frequently have false information or

[1]*Department of Gynecology & Obstetrics/Medical Students*[2,3,5,6]
College of Medicine,
King Faisal University Saudi Arabia.
[4] *Medical student First Faculty of Medicine, Charles University, Prague, Czech Republic.*

Correspondence:
Dr. Fehmida Tehsin
Assistant Professor
Department of Gynecology & Obstetrics
College of Medicine,
King Faisal University Saudi Arabia
E-mail: fehmidatehsin123@gmail.com

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misconceptions about reproductive health topics because of the notable lack of sexual reproductive health (SRH) awareness in rural areas of developing countries. This is primarily due to a lack of educational resources and limited access to information facilities.[7,8]

Women's ability to make educated decisions is hampered by the lack of sexual and reproductive health education in the Middle East and North Africa, particularly Saudi Arabia.[9] In Saudi Arabia, SRH is often framed within the context of morality, tradition, and modesty. Consequently, discussions surrounding SRH are regarded as culturally taboo, particularly for unmarried females, who are less knowledgeable and have limited resources to access such information.[10]

The current study has focused on preparatory-year female students of King Faisal University, Al Ahsa, to evaluate their SRH awareness, knowledge, information-seeking attitude, parental communication, and desire to access information resources. The preparatory-year students being at a transitional stage between secondary school and higher education, may indeed be considered a vulnerable group in terms of their awareness of sexual and reproductive health matters. Recognizing the diverse and evolving needs of young females this initiative seeks into the complexities of sexual and reproductive health, aiming to equip students with knowledge, resources, and a supportive community that facilitates informed decision-making and promotes a sense of awareness of their health.

Materials and Methods

A descriptive cross-sectional study was conducted at the King Faisal University, Al Ahsa Saudi Arabia in the first semester of the academic year from 1st September 2023 to 20th November 2023. Ethical approval was granted by King Faisal University of Al-Ahsa Research Ethic Deanship (KFU-REC-ETHICS536). The study targeted young female students from the preparatory year to evaluate reproductive health awareness. A sample size of 328 girls was extracted from the total number of enrolled students with a 95% Confidence Interval and a 5% margin of error. The students were enrolled through the systematic randomized sampling as per subject class sessions with their free will to respond to the questionnaire.

The questionnaire was retrieved from published studies and tailored to the Saudi culture, religion, and ethics.[9,10] The questionnaire contained a sociodemographic section of participants and their parents and the awareness of any gynecological illness. The second section contained close-ended knowledge questions with yes, no, and don't know choices about the menstrual cycle, puberty body changes, polycystic ovaries, sexually transmitted diseases, contraception, and sexual reproduction. All “Yes” were correct answers and scored as 1, and “No, and Don't know” scored as 0. Participants with scores above the total median were considered to have a high level of awareness and those below to have a low level of awareness. The knowledge obtained from parents was evaluated on 3 scales Nothing, Some, and a Lot. Their behavior or attitude in discussing SRH issues was assessed with a 4 Likert scale of strongly disagree, disagree, agree, and strongly disagree. In addition their sources of sexual and reproductive health information, statements to choose regarding the barriers in the way of SRH awareness, and finally their opinions on the provision of information sources or platforms to improve and enhance knowledge about SRH and pregnancy. Permission from the teaching faculty was retrieved before the teaching session. The researchers distributed the questionnaire to the randomly assigned students. Out of the systematically randomized participants, we received 328 complete voluntary responses.

The data was cleaned in Excel and analyzed in IBM SPSS 29. A thorough statistical analysis was performed on the dataset, incorporating both descriptive and inferential methods. Firstly, a descriptive analysis was conducted to summarize the demographic characteristics of the participants, which include age, gender, and other features. This provided an overview of the study population. Subsequently, inferential analysis such as Fisher's Exact Test was used to see the association between categorical variables. Statistical significance is established at a p-value of < 0.05 and a 95% Confidence Interval. All statistical analyses were performed using IBM's SPSS Software, version 29.0.0.

Results

Among the 328 female students, most (46%) were 18

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years old. The majority of students resided in the city (71.6%). Maternal and paternal education levels varied, with a higher prevalence of university-educated parents. The majority were single (91.2%), and nearly all had not attended sexual/reproductive health courses. A small percentage reported a family history of gynecological issues shown in Table I

Table I: Sociodemographic and Other Features of Female Students

Variables		Frequency (n=328)	Percent
Age	18 Year	151	46.0
	19 Year	119	36.3
	20 Year	38	11.6
	21 Years or Above	20	6.1
Residence	City	235	71.6
	Village	93	28.4
Mother's Education Level	Uneducated	9	2.7
	Primary Education	27	8.2
	Intermediate Stage	55	16.8
	Higer School	109	33.2
	Diploma	16	4.9
	University	112	34.1
Father's Education Level	Uneducated	6	1.8
	Primary Education	32	9.8
	Intermediate Stage	46	14.0
	Higher School	104	31.7
	Diploma	21	6.4
	University	119	36.3
Marital Status	Married	29	8.8
	Single	299	91.2
Have Ever attended Courses in Sexual/Reproductive health as part of compulsory or elective programs	No	318	97.0
	Yes	10	3.0
Family history of any gynecological problem, treatment, or Operation	No	299	91.2
	Yes	29	8.8
Weight (Kg)	Mean (SD)	55.5 (17.8)	
	Range	30-162 Kg	

Various aspects of menstrual cycle were asked and a notable 26.2% experienced irregular menstrual cycles, with 99.1% using sanitary pads. Of those with irregular cycles, 75% had consulted a doctor. Only 3% used cloth as an alternative to pads. The majority 78.4% discussed their first period, and 80.8% noticed hair growth on their face and body. Facial acne was found prevalent, affecting 61.9% of participants.

Figure 1 shows the people with whom female students discussed their first period. The majority (135) talked to their mothers, followed by sisters (71) and friends (70). A smaller percentage sought guidance from the relatives (37), while (16) chose other individuals. Regarding the awareness of STDs/HIV, the majority knew multiple partners can be a cause of these infections. Blood transfusion, sharing needles, unprotected intercourse, and the use of public restrooms were acknowledged as potential transmission routes.

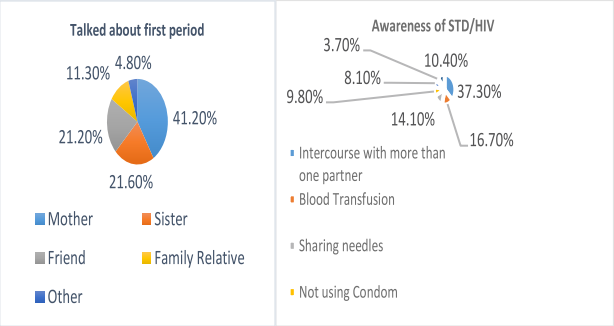

Fig 1: Female Students Talked about their First Period and awareness of STD/HIV

The primary sources of reproductive health included TV 17.1%, followed by news 16.2%, health professionals 12.6%, and friends 11.4%. The top graph in Figure 2 laid out the hurdles faced by female students in obtaining reproductive health information. The most common challenges included uncertainty about where to get information and feelings of shame or shyness. A smaller percentage encountered obstacles such as parental rejection of these topics, limited availability of services, and service providers refusing to discuss these matters. Fear of unreliable sources and other unspecified barriers contribute to the complexities students face in accessing reproductive health information. The graph at the bottom revealed the preferences of female students regarding reproductive and sexual health services. The majority express a desire for information or chapters on reproductive/sexual health issues. Additionally, there was interest in sexual relations/premarital preparation classes and sexual/reproductive health problems clinics. Services related to the treatment/information about transmitted diseases, antenatal/postnatal classes, and contraception/instructions for use were also considered valuable.

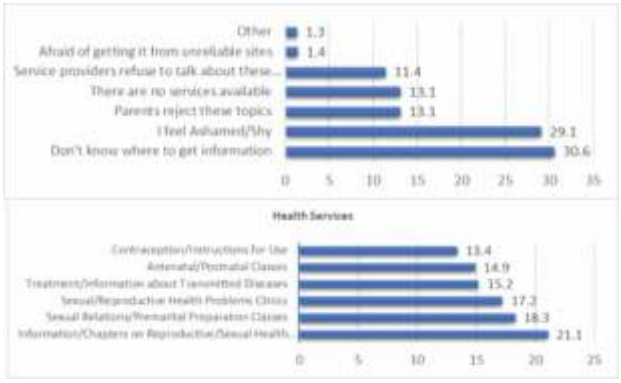

Fig 2: Barriers to access information, and required health services/resources to provide.

Table II shows that 41.8% were aware that irregular menstrual cycles affect fertility. While 91.5% recognized premenstrual symptoms, only 60.4% were familiar with polycystic ovary syndrome. Understanding the consequences of polycystic ovary disease was evident in 62.8% of participants. Awareness of sexually transmitted diseases was high at 81.1%, with 75.9% acknowledging preventive measures. Contraceptive knowledge was known well widespread (93.9%), but 84.5% understood the reasons for contraceptive use. Few married participants reported using contraception (3.4%).

Table II: Knowledge about Reproductive Health Issues/Problems

		No	Don't Know	Yes
Does an Irregular menstrual cycle affect fertility?	N	29	162	137
	%	8.8	49.4	41.8
Do you know about premenstrual symptoms?	N	13	15	300
	%	4.0	4.6	91.5
Do you know about the term polycystic ovary syndrome?	N	83	47	198
	%	25.3	14.3	60.4
Polycystic ovary disease can lead to irregular menstrual cycles, unwanted body hair growth, weight gain, and difficulty getting pregnant	N	5	117	206
	%	1.5	35.7	62.8
Have you heard about sexually transmitted diseases?	N	40	22	266
	%	12.2	6.7	81.1
Is there anything a person can do to avoid STDs and HIV?	N	10	69	249
	%	3.0	21.0	75.9
Have you heard about contraceptives?	N	8	12	308
	%	2.4	3.7	93.9
Do you know why to use contraceptives?	N	25	26	277
	%	7.6	7.9	84.5
If you are married, have you ever used any type of contraception?	N	34	7	11
	%	10.4	2.1	3.4

Table III shows the learning behavior and information-seeking attitude of female students. A large proportion of 57.3% learned a lot about body changes during puberty from their parents. Similarly, 57.9% also acquired a lot of knowledge about menstruation. However, fewer students 15.2% gained extensive information about the male and female reproductive system, 11.3% contraception, and 6.7% sexual relations. While 43.9% have talked about reproductive health matters, 64.3% found it easy to obtain information. About 35.4% expressed interest in attending sexual and reproductive health courses. Communication comfort varied, with higher agreement on discussing these matters with mothers than with fathers.

Table III: Assessment of Knowledge and Information Seeking Attitude of Female Students

Knowledge Obtained from Parents		Frequency (f)	Percent (%)
The body changes during puberty	Nothing	37	11.3
	Some	103	31.4
	Alot	188	57.3
About menstruation	Nothing	31	9.5
	Some	107	32.6
	Alot	190	57.9
About the male and female sexual reproductive system	Nothing	154	47.0
	Some	124	37.8
	Alot	50	15.2
About contraception	Nothing	201	61.3
	Some	90	27.4
	Alot	37	11.3
About sexual relations between males and females	Nothing	230	70.1
	Some	76	23.2
	Alot	22	6.7
Information Seeking Attitude Toward Reproductive Health			
Have you ever talked to anyone about sexual and reproductive health matters?	No	184	56.1
	Yes	144	43.9
Do you think it is easy to get information about sexual and reproductive health?	No	117	35.7
	Yes	211	64.3
Would you like to attend any courses on sexual and reproductive health?	No	212	64.6
	Yes	116	35.4
I feel that I can discuss issues related to sexual reproduction with my mother only.	Strongly Disagree	78	23.8
	Disagree	111	33.8
	Agree	118	36.0
	Strongly Agree	21	6.4
I feel that I can discuss issues related to sexual reproduction with my parents (both mother and father)	Strongly Disagree	208	63.4
	Disagree	98	29.9
	Agree	19	5.8
	Strongly Agree	3	.9

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Table IV explored factors associated with reproductive health awareness among female students. Participants who answered correctly having scores above the total median score had a high level of awareness and those below had a low level of awareness. The educational status of fathers significantly correlated with the awareness of reproductive health among female students (p-value = 0.040). Notably, when fathers were uneducated, the awareness level was 0.0%, contrasting with 78.6% awareness when fathers had a university education. Similarly, the Preparatory year students for the College of Engineering were having the highest awareness (78.3%) with p=0.036. Other factors like age, marital status, residence, and other socio-demographic factors were found non-significant.

Table IV: Association of Reproductive Health Knowledge Level with Demographic Variables

Variables			Knowledge level of Reproductive Health		p-value
			Low Level	High Level	
Educational Status of Father	Uneducated	N	0	6	**0.040**
		%	0.0%	100.0%	
	Primary Education	N	6	26	
		%	18.8%	81.3%	
	Intermediate Stage	N	19	27	
		%	41.3%	58.7%	
	Higher School	N	38	66	
		%	36.5%	63.5%	
	Diploma	N	4	17	
		%	19.0%	81.0%	
	University	N	30	89	
		%	25.2%	74.8%	
Preparatory Year Students' Bachelor program colleges	College of Business Administration	N	46	141	0.036
		%	24.6%	75.4%	
	College of Clinical Pharmacy	N	4	4	
		%	50.0%	50.0%	
	College of Engineering	N	5	18	
		%	21.7%	78.3%	
	College of Science	N	20	39	
		%	33.9%	66.1%	
	College of Medicine	N	15	14	
		%	51.7%	48.3%	
	College of Computer Science.	N	7	15	
		%	31.8%	68.2%	

Discussion

Our study provided a comprehensive understanding of reproductive health awareness among 18–to 21-year-old female university students. The exploration of communication challenges, information-seeking behaviors, and the impact of educational strategies sheds light on the dynamics shaping their reproductive health perspectives.

Yadav et al. [5] stated that the age group 14–17 years is the most vulnerable group when it comes to reproductive health due to the lack of proper resources about SRH makes them seek information from unreliable places and sources, which can be dangerous because of myths and misconceptions contrary to this in the current study the students' age range was 18-21 and most of them showed better understanding in this regard.

There is a pivotal role of mothers in reproductive health discussions, with 41.2% of students confiding in their mothers in the study. This aligns with previous literature emphasizing the influential role of maternal figures in shaping adolescents' perceptions of reproductive health by Richards et al.[11] who stated that young females considered maternal figures as a source of advice, information, and resources. The presence of sisters and friends as significant confidantes highlights the importance of peer and familial support networks.

Our findings revealed varied learning behaviors among participants, with a substantial percentage gaining extensive knowledge about body changes during puberty and menstruation. However, fewer students possessed an in-depth understanding of the male and female reproductive systems and contraception. Published studies[12,13] have similarly identified a deficit in this profound comprehension, which can be attributed to inadequate education, limited knowledge, and insufficient awareness. These findings advocate for the implementation of targeted educational interventions that address specific aspects of reproductive health suggesting a need for targeted educational interventions addressing specific aspects of reproductive health.[7]

The study by Olamijuwon et al.[2] highlighted the substantial influence of social networks on sexual health information in contemporary society. Our research aligns with this finding as participants obtain reproductive health information primarily through television followed by news, advertisements, radio, and a minor percentage through social media. This underscores the importance of utilizing diverse communication

channels within social networks for reproductive health education. Therefore, educational interventions should leverage these varied channels to maximize their effectiveness.

Various hurdles are faced by students in accessing reproductive health information by the participants. The prevalence of uncertainties about information sources and feelings of shame or shyness are echoes of the findings from previous studies highlighting societal barriers to open discussions about reproductive health.[3,4] Hailemariam et al.,[14] also stated various hurdles, which included socio-cultural barriers, health system barriers, perceived legal barriers, inadequate information regarding sexual reproductive health services, and low parent-adolescent communication. Addressing these emotional and social barriers is crucial for effective reproductive health education.

The high educational status of fathers emerged as a notable factor with good awareness and knowledge scores of female students. This aligns with existing literature emphasizing the influence of parental education on adolescent health outcomes by Mikkonen et al.,[15] where parental education was a strong independent predictor of young females' sexual educational attainment. A study in India[16] stated that young college girls felt more convenient with their mothers to attain SRH information irrespective of maternal education which is also similar to the current findings. In Bangladesh[7], the mother and female relatives were the source of information about SRH, which often contained misconceptions that may harm female health which is not consistent with the current study.

The study reflected that participants were aware of the transmission of sexually transmitted diseases (STDs). The recognition of high-risk behaviors, such as intercourse with multiple partners, aligns with literature emphasizing the importance of understanding transmission modes for effective prevention which parallels the findings of Kalichman et al.[17] However, gaps in knowledge, such as the uncertainty of transmission of STDs/HIV, highlight areas for focused education. Most of them had regular menstruation and used sanitary pads, which is contrary to the above-cited Bangladesh study where the majority used cloth as a vaginal pad, and also with Saudi western region studies[18,19] where the majority of participants had revealed irregular menstrual cycles. Current study participants were aware of polycystic disease (PCOD) and its effects on menstrual irregularity and had facial hair. The consequence events of PCOD must be highlighted and young girls be informed to avoid its unhealthy effects on the female body and reproductive functions.[20]

Conclusion

The study revealed gaps in female preparatory year students' awareness of reproductive health. It underscores the importance of enhancing the accessibility of reproductive health knowledge resources and improving communication channels with parents for young females to attain first-hand appropriate knowledge regarding all aspects of reproductive health. This can contribute to heightened awareness of sexual and reproductive health.

Limitation of Study

The limitation of the study lies in its design and may not represent the broader population or students of other universities. Also, it would have been better if we had included the awareness of preparatory male students which could have served as a compatible comparison with females but due to logistics issues this comprises a second limitation of our study.

Recommendation

Future research endeavors should encompass secondary school and university girls across all regions of KSA. By conducting comprehensive studies with large, representative population samples, we can identify and address gaps and deficiencies in knowledge and communication related to sexual and reproductive health on a large scale.

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CONFLICT OF INTEREST

Authors declared no conflicts of Interest.

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DATA SHARING STATMENT

The data that support the findings of this study are available from the corresponding author upon request.