

## Assessment of Knowledge and Attitudes regarding reproductive health among female college students in Basrah City

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Received: 02.11.2025

Accepted: 14.12. 2025

### Abstract

**Background:** Reproductive health includes responsible, satisfying, and reproductive well-being. It's a crucial component of general health and reflects well-being during adolescence and adulthood. The more aware individuals are of reproductive health issues, the more stable families can be formed, capable of building a better future.

**Objectives:** Assessing the knowledge and attitude of female college students regarding reproductive health and to determine the social and demographic factors of the female students that may be associated with their knowledge and attitude.

**Methodology:** A descriptive study was conducted to assess the level of knowledge about reproductive health among 387 female college students from five colleges in Al-Basrah city. The data was collected by direct interview using a constructed questionnaire to obtain socio-demographic characteristics and the level of knowledge related to reproductive health.

**Results:** The results show that the age range of the studied female students was 18 - 24 years, with a mean of 20.82 ±1.63years. This study shows that students' knowledge of all the domains of reproductive health was poor level, with an overall knowledge level of 2.8%, with a mean score (19.27± 6.35). There was a significant association between the students' knowledge and their socioeconomic status in all components of reproductive health. Attitudes were consistent across sociodemographic variables, including college attendance, year of study, place of residence, and household composition.

**Conclusions:** The present study concluded that overall, students 'Knowledge of reproductive health among female college students was at a poor level, and the majority of females had a neutral attitude.

**Keywords:** Assessment, Knowledge, Attitudes, Reproductive Health, College Students, Basra.

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### Introduction

According to the World Health Organisation (WHO), "Reproductive health is a state of complete physical, mental, and social well-being, rather than merely the absence of reproductive illnesses or diseases." It encompasses all reproductive functions and processes. (1) Reproduction is not confined to the period between young adulthood and menopause for women, or to a man's capacity to have children. Alternatively, it covers the whole life cycle of an individual, playing a crucial role at numerous stages of development and coming of age. Ignoring RH at any point in life can lead to negative effects on the individual's health (1). With the consequence that they likely suffer from unintended or unplanned pregnancies, and sexually transmitted

diseases(STDs) can result from women's lack of adequate knowledge and awareness about reproductive health. (2)

Women's understanding of and reactivity toward reproductive health has to be improved. It not only empowers them to make informed decisions about their health but also contributes to the well-being of future generations. (2)

By understanding the risks and preventive measures, women can reduce the incidence of reproductive health-related diseases and complications, leading to healthier pregnancies and better outcomes for their children. (3) This is increased by the Knowledge, which is the most important tool for maintaining the proper health of the individual. People who do not know how to protect their

health are at a greater risk than knowledgeable individuals. **(4)**

Young female students are the one demographic group for which the knowledge in the field of human fertility is essential, for two important reasons. Firstly, many of them are going to have children shortly. Secondly, they will soon graduate, which means that they are about to be among the best-educated young people in the community.

**(5)**

Reproductive health right includes the autonomy to decide whether, when, and how many children to have. This comprises access to family planning, safe pregnancy, and childbirth. Thus, reproductive health (RH) is more than just the absence of disease. It involves having the knowledge, resources, and support essential to make informed decisions about one's reproductive health. **(6)**

In 2018 UNFPA report verified that more than 500 women and girls die daily in humanitarian contexts from pregnancy and childbirth-related complications, highlighting the critical need to address and improve access to quality SRH services in humanitarian settings to protect women, children, and communities. **(7)**

The components of reproductive health encompass several key areas: equipping women and girls for the future, ensuring proper nutrition, empowering women with family planning services, eradicating unsafe abortions, preventing unintended pregnancies, dealing with infertility, encouraging voluntary and knowledgeable fertility decisions, contributing to pre-conception care, and supporting safe motherhood programs. **(8)**

Reproductive health is a socially and culturally complex and challenging issue in most of the Middle East and North African countries. Consequently, RH information and services fail to reach the major part of young people and adults, who are frequently neglected by them. This results in misunderstandings, confusion, and a lack of awareness among this vulnerable group. **(9)**

It was expected that spreading technology would increase the level of women's awareness of RH, though no recent study highlights the existing awareness level of reproductive and sexual health determinants among Iraqi young females. **(10)**

### **Objective of the study**

1-To assess the reproductive health knowledge among female college students in Basrah city.

2-To assess the reproductive health attitudes among female college students in Basrah city.

3-To determine the social and demographic factors of the female students that may be associated with their knowledge and attitude.

### **Methodology**

A descriptive cross-sectional study was conducted in Basrah city from October 2024 to February 2025. The study included female students. The present study involved female students in five colleges of Basrah University, some of them located in Karma and others in Bab Al-Zubair. Colleges involved are Arts, Education for Human Sciences, Engineering, Marine Sciences, and Fine Arts.

The study included unmarried or engaged female students aged 18–25 years enrolled in the first to fourth academic years. Married, divorced, or outside this age range were excluded. Participation was voluntary, and informed consent was obtained. A sample size of 387 respondents was estimated using Daniel's formula, which is suitable for cross-sectional studies, as below:

$$n = (Z^2 \times p \times (1 - p)) \div d^2$$

Where

- $n$  = required sample size
- $Z$  = Z-score corresponding to desired confidence level (e.g., 1.96 for 95% confidence)
- $p$  = estimated proportion (prevalence) of the attribute (if unknown, use 0.5 for maximum variability)
- $d$  = margin of error (precision), typically 0.05 (5%)

$$n = (1.96)^2 \times 0.5 \times (1 - 0.5) \div (0.05)^2$$

$$n = 3.8416 \times 0.25 \div 0.0025 = 386.1$$

An updated list of the names and locations of all the colleges within Basra City was obtained from the official website of the University of Basrah. The list included all 21 colleges; the five colleges were selected using systematic random sampling. Five were selected after listing them in alphabetical order and choosing every fourth item from the list. The sample of each college was randomly selected after obtaining the lists of names from each of the designated colleges. A total of 387 first-grade to fourth-grade female students from the faculties of Arts ( $n = 76$ ), Education for Human Sciences ( $n = 68$ ),

Engineering (n = 89), Marine Sciences (n = 72), and Fine Arts (n = 82) were reached. The variation in the percentage of students selected from different academic years and colleges resulted from the application of a systematic random sampling method.

Initially, all colleges were listed in numerical order. A sampling interval of 4 was calculated based on the total number of colleges included in the study. A random starting point was selected using the last digit of a currency note. In this study, the starting point was College 1. Subsequently, the sampling interval was added sequentially to identify the next colleges ( $1 + 4 = 5$ ), and this process was continued until the required number of colleges was selected, resulting in the inclusion of Colleges 1, 5, 9, 13, and 17.

Within each selected college, students from different academic years were selected using the same systematic random sampling technique based on available student lists. Because colleges and academic years differed in their total number of female students, the final number and percentage of participants selected from each group were not uniform

This variation reflects the systematic and probabilistic nature of the sampling process rather than inconsistency in methodology. The approach ensured randomness, minimized selection bias, and maintained the representativeness of the sample in accordance with the study objective.

The questionnaire was carefully developed following an extensive review of the relevant literature and the validation of previously existing instruments. A fundamental component of the tool was adapted from a World Health Organization (WHO) questionnaire originally designed by John Cleland (11). In addition, items were incorporated from a standardized questionnaire used in a published protocol study, which has been applied in several reproductive health (RH) studies conducted in countries such as Saudi Arabia, Jordan, and Lebanon [3, 12, 13, 14].

A total of 23 students declined to participate in the study, resulting in a non-response rate of 5.9%. These participants were subsequently replaced to maintain the intended sample size.

The Questionnaire contains the following two sections

**The first section:** The section outlines the socio-demographic data, such as age, college, year of study, the place of residence, family Size, socio-economic status, household Composition, the academic level of parents, and the mother's Employment status

**The second section:** This section focuses on knowledge and attitudes regarding reproductive health and includes the following topics: covering seven domains—definition of RH, menstruation, premarital counseling, pregnancy and childbirth, breastfeeding, family planning, and reproductive tract infections.

The questionnaire was validated by four experts in the field of gynecology and community medicine. They were asked to review the tool for overall clarity, relevance, comprehensiveness, and applicability. Cronbach's alpha score for measuring the internal consistency of the scale (0.71) was reached. Each correct knowledge response received one point; incorrect or "I don't know" responses received zero. Total knowledge score: **45 questions**, converted into a percentage, and classified as:

- Poor: <50%
- Moderate: 50–74%
- Good:  $\geq 75\%$

Attitudes were assessed using 5-point Likert-scale items, converted into percentages, and categorized as:

- Negative: <50%
- Neutral: 50–74%
- Positive:  $\geq 75\%$ .

This method follows approaches used in previous reproductive health studies and WHO guidelines. (15)

### **Statistical analysis**

Data were analyzed using SPSS version 26.0. Descriptive statistics (frequency, percentage, mean  $\pm$  SD) were used for categorical and continuous variables. Associations between variables were examined using the chi-square test, t-test, and ANOVA where appropriate. Logistic regression identified predictors of RH knowledge and

attitudes. A p-value of **<0.05** was considered statistically significant.

### **Ethical and legal considerations**

Ethical approval was obtained from the College of Medicine, University of Basrah. Official permissions were secured from the deans of participating colleges.

Participation was voluntary, and informed consent was obtained. Confidentiality and anonymity were strictly maintained throughout data collection and analysis.

### **Result**

A total of 387 students enrolled in undergraduate programs. Students were selected from different faculties to measure their knowledge and attitude related to Reproductive health. Out of the total participants, the age range of the studied female students was 18 - 24 years, with a mean of  $20.82 \pm 1.63$  years.

Regarding their residence, more than half (57.4%) of them lived in the central area, while 42.6% lived at the periphery. In terms of their living conditions, most of them lived with their families (85.8%).

Based on self-perception, approximately 274 (70.8%) of the participants reported having a sufficient or moderate socio-economic status. In comparison, 15.5% perceived their socio-economic status as limited or low. Family Size categories About (36.5%) of families of 5 – < 7 members. Most of the fathers' education was (60.4%), including a high school (30.2%) and a university degree (30.2%), while only (6.8%) had higher education. Regarding mothers' education, most of them have (56.9%) either a high school education (28.7%) or a university degree (28.2%). A significant proportion of mothers (20.7%), just read and write, while (3.4%) were illiterate, and (2.8%) have postgraduate education. The majority of mothers (71.8%) were housewives. Only 28.2% of mothers were employed in (government and the private sector (20.7%, 7.5%), respectively, in Table 1.

Respondents were selected from students enrolled in five randomly chosen faculties. About 23.0% of the students were studying engineering, 21.2% were studying fine arts, 19.6% were studying arts, 18.6% were studying marine science, and 17.6% were studying education and humanities.

The first and second years of the study accounted for (20.4%) and (29.7%), respectively, while the third and fourth years accounted for (23.8%) and (26.1%), respectively. Table 2

Table 2- Frequency distribution of participants according to their college and years of study:

No significant difference in the level of knowledge among respondents of different ages ( $p = 0.888$ ). Respondents' mean age of poor, moderate, and good levels of knowledge were ( $20.82 \pm 1.61$ ), ( $20.87$

$\pm 1.65$ ), and ( $20.18 \pm 1.83$ ) years, respectively. About types of colleges found, respondents with poor knowledge from different colleges were Arts college (65.8%), Education college (76.5%), Fine Arts college (75.6%), and Engineering college (73%), compared to those from Marine Sciences college (58.3%), and it was not a significant difference ( $p=0.214$ ). A slight relationship was observed between year of study and reproductive health level of knowledge ( $p = 0.003$ ). First-year (81%) and second-year (73.9%) students had the highest proportion of poor knowledge, while third-year students had (56.5%). These results indicate that students' knowledge improves with academic advancement. Residence was borderline significant ( $p = 0.05$ ). Participants living in central areas reported lower response of poor knowledge (67.1%) compared to those living in peripheral areas (73.9%). Center residence is associated with slightly better reproductive health knowledge. This may reflect greater access to health services and awareness campaigns in urban centres compared to peripheral areas.

A highly significant association was found between family income status and knowledge ( $p = 0.001$ ). Among students from low socio-economic status, 83.3% demonstrated poor knowledge, compared to 47.2% of high family income status. Household composition showed no statistically significant association ( $p = 0.872$ ). as presented in Table 3.

No significant association between Family Size and the overall level of knowledge ( $p = 0.473$ ), poor knowledge is high across all family size categories.

Father's Education: There was no significant relation with the level of knowledge ( $p = 0.372$ ).

Mothers' education ( $p = 0.077$ ) is borderline significant; higher maternal education is generally linked with better knowledge, especially for those with high school and above.

Mother's Employment Status: It was not significant that respondents with employed mothers (in the government and private sector) show somewhat better knowledge than housewife mothers, and it was not significant ( $p = 0.353$ ).  
Table 4

There was no significant association of respondents' attitude with their age ( $p = 0.168$ ). The findings revealed that female university students have relatively neutral attitudes toward reproductive health. These attitudes were consistent across different sociodemographic variables, including college, study year, place of residence, and household composition. Furthermore, statistical analysis indicated that there was no significant association between students' attitudes regarding reproductive health and their socio-demographics, except that family income status was significantly associated with students' attitudes toward RH (0.033). Table 3.5

Similarly, to other participants' family structures, across family size, Father's mother's Education, Mother's Employment Status are not significantly linked with attitude of Reproductive health. The important observation concerns that all parts of participants' family structures had a neutral attitude towards Reproductive health. Table 3.6

Assessing the level of support among respondents for the RH curriculum found that in Table 7, nearly half (47.8%) strongly support education despite objections, while only 12.4% believe the topic should be avoided, which indicates a highly favorable attitude toward RH education.

Concerning the menstrual cycle, results indicate that one hundred thirty-four respondents (34.6%) reported a good level of knowledge, one hundred sixty-nine (43.7%) had moderate knowledge, and only 84 (21.7%) had poor knowledge. Regarding premarital screening, about 71.8% had inadequate knowledge about pregnancy, and only forty-five respondents (11.6%) had good knowledge.

About pregnancy, over half of the respondents (56.6%) had poor information, and only thirty-six (9.3%) with

good knowledge. About breastfeeding, about 78.0% observed inadequate knowledge, and only twenty-five (6.5%) of respondents possessed adequate knowledge.

In terms of family planning knowledge, 80.4% had poor knowledge, and 1% had good knowledge. About knowledge of reproductive tract infections, only twenty of the respondents (5.2%) had good

information, whereas 67.4% had poor knowledge. The majority of participants (70.0%) demonstrated poor overall knowledge, while 27.1% had moderate knowledge and 2.8% good knowledge.

The results show that only 2.8% had good knowledge, while 70% had poor knowledge. The mean overall knowledge and standard deviation were  $(19.27 \pm 6.35)$ , indicating that participants answered 42.8% of all questions correctly, which suggests poor overall knowledge. About moderate mean  $\pm$ std between (12.92 and 25.62), as presented in Table 8.

The distribution of attitudes toward the menstrual cycle shows that (22.5%) of students hold negative perceptions, while (46.8%) are neutral, and (30.7%) express positive attitudes. While the Attitude toward premarital screening was the highest among participants with a negative attitude (60.2%), the findings revealed that around half of the respondents expressed either neutral or negative attitudes toward pregnancy. The table (9) shows that more than half of respondents (59.2%) showed neutral attitudes toward breastfeeding. Additionally, regarding attitudes towards family planning and reproductive tract infections, the results revealed a neutral attitude (63.0%) and (69.0%), respectively.

## Discussion

Reproductive health (RH) is vital for women's well-being on the future health of their families. Assessing Students' knowledge provides valuable insight for targeted educational intervention. (16)

The results of the present study demonstrated that the mean age of the study group was  $(20.82 \pm 1.63)$  years, ranging from 18 to 24 years old. This finding is similar to the findings reported among Al-Qadisiya undergraduate

medical students (17). This reflects the typical age of college students in Iraq.

Most participants belong to middle family income status families. About 1/3 of parents held university degrees, and most mothers were housewives, which reflects the general socioeconomic and cultural profile of Iraqi families. This finding agrees with a study in Saudi Arabia (2024) conducted among female university students, in which the majority were from middle-income households. (3) Parental education has consistently been shown to play a crucial role in shaping the reproductive health knowledge of female university students. Parents with higher educational attainment are typically more aware of the significance of reproductive health. Particularly, mothers who are better at accessing, evaluating, and conveying accurate information to their daughters. Employed mothers, although fewer in number, have been linked in some studies with higher levels of students' reproductive health knowledge, possibly reflecting greater household income, autonomy, and access to health information.

This study's findings indicated that there was no significant relationship between age, place of residence, and their knowledge about RH. This agrees with findings among single, unmarried women living in Lebanon (2022) regarding the age and residence (12)

In the current study, there is a significant relationship between study year and knowledge ( $p=0.003$ ). The findings indicated a general improvement in knowledge with academic progression. A similar finding was conducted among college students at the University of Baghdad (2024) (18). The present study also found no significant difference between the types of college. Although there is variation across colleges, there was a better knowledge among students of Art and Education colleges, compared to other colleges, in contrast to a study conducted in India (2024) (19), explained by curriculum integration, disciplinary orientation toward human and social matter, which tackle issues of RH. Regarding the father's, mother's Education, and the mother's employment Status, no significant relation with knowledge of Reproductive health. This result is consistent with a study in Iran-Karaj (2021), which demonstrates no Significant difference in knowledge

scores based on the Type of university and mothers' and fathers' education level and occupation. (20)

These analyses indicated that reproductive health knowledge among the participants was not determined by their parents' background and other demographic variables. As an alternative, other factors—such as access to health information, awareness programs, school curriculum, or peer influence—might play a more important role in shaping knowledge. Additionally, Cultural factors and taboos may reduce open family discussion, making parental education or employment less relevant to adolescent knowledge compared to peers, school, or media.

However, a highly significant association was found between family income status and knowledge ( $p = 0.001$ ). Similar findings, knowledge was highest among students with high socio-economic status in a study done in Basrah (21), Saudi Arabia (2024) (3), and Egypt (2021) (2). The findings demonstrate that the family income in relation to students' reproductive knowledge found a significant association. Economically privileged women (middle, richer, and richest wealth categories) were more knowledgeable about Reproductive health than women from the poorest households.

The analysis of the current study demonstrated that the mean knowledge score among the participants was ( $19.27 \pm 6.35$ ), suggesting that the overall level of knowledge among the participants was relatively low. The participants' overall knowledge is distributed with (70%) having poor knowledge, (27.1%) having moderate knowledge, and only (2.8%) having good knowledge. These findings were consistent with research conducted in Mosul (2025), where the overall good awareness of RH was about 16% of participants, and 42% of them had low awareness of RH (9).

Concerning the attitude toward reproductive health, results point to that female university students exhibited relatively neutral attitudes toward reproductive health. These attitudes appeared to be independent of sociodemographic factors such as age, college, place of residence, family composition, and parents' education. Moreover, the statistical tests suggested the absence of any significant association between students' attitudes and

their level of knowledge concerning reproductive health. In other words, attitude levels were similar across different groups — regardless of their background characteristics, except that family income status was significantly associated with students' attitudes toward RH ( $p=0.033$ ). These results are consistent with a study performed in Egypt (2022), which had a positive attitude towards RH, where the cutoff point for a positive attitude was more than 60%, and there was a significant difference in attitude between different income levels, as well as mother occupation. (22) This is in line with a study conducted in India (2022) (23). These findings may highlight that students' attitudes are shaped by cultural norms, social influences, or general awareness campaigns, which could explain the lack of variation across different demographic backgrounds. Besides that, contact with a working mother's experiences can foster greater respect and understanding of women's health and maternal roles.

Nearly half (47.8%) of respondents strongly supported RH education in university curricula, while only 12.4% considered the topic too sensitive. This reflects a generally positive attitude and aligns with WHO recommendations that reproductive health education should be part of school and university health programs. (24)

## Conclusion

The overall knowledge is distributed with (70%) having poor knowledge, (27.1%) having moderate knowledge, and (2.8%) having good knowledge. Such a proportion is lower than in other countries. Misconceptions about all aspects of RH are also present.

## Recommendation

The present study recommended that it is necessary to establish educational programs to improve knowledge about reproductive health through direct lectures, through mass media, and through the school health provider, and to have special curricula in the teaching programs to improve their knowledge about reproductive health. Introduce educational sessions and courses about RH in

universities and schools that are appropriate for each age group.

## Conflicts of interest

The author declares no conflict in our study.

## Acknowledgment

The author would like to express our deep also grateful to the female university students from various colleges in Basra City who participated in this study. Their cooperation and willingness to share their knowledge and experiences made the data collection process both insightful and meaningful.

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Table 1- Sociodemographic Characteristics of Study Participants

Variable		No.	%
Age	Mean ± SD	20.82 ±1.63	
	Range	(18-24)	
Residence Address	Center	222	57.4
	Periphery	165	42.6
Family income status	Poor	60	15.5
	Moderate	274	70.8
	High	53	13.7
Household Composition	Living with both parents	332	85.8
	Living with one parent only	45	11.6
	Living with a relative	10	2.6
Family Size	<5	43	11.1
	5 -<7	141	36.5
	7- <9	144	37.2
	≥ 9	59	15.2
Father's Education	Illiterate	25	3.9
	Primary Education	69	17.8
	Middle School	43	11.2
	High School	117	30.2
	University Degree	117	30.2
	Higher Education	26	6.7
Mother's Education	Illiterate	13	3.4
	Primary Education	80	20.7
	Middle School	63	16.3
	High School	111	28.7
	University Degree	109	28.2

	Higher Education	11	2.8
Mother's Employment Status	Housewife	278	71.8
	Government Employee	80	20.7
	Private Sector Employee	29	7.5
Total		387	100

**Table 2- Frequency distribution of participants according to their college and years of study:**

Variable		No.	%
Academic discipline	Arts	76	19.6
	Marine Sciences	72	18.6
	Education	68	17.6
	Fine Arts	82	21.2
	Engineering	89	23
Year of Study	First Year	79	20.4
	Second Year	115	29.7
	Third Year	92	23.8
	Fourth Year	101	26.1
	Total	387	100.0

**Table 3: The respondents' overall level of knowledge with socio-demographics:**

Variables		Poor knowledge N=271	Moderate knowledge N=105	Good knowledge N=11	p-value
Age	Mean ± SD	20.82± 1.61	20.87± 1.65	20.18± 1.83	0.888*
College Name	Arts	50 (65.8%)	23 (30.3%)	3 (3.9%)	0.214#
	Marine Sciences	42 (58.3%)	28 (38.9%)	2 (2.8%)	
	Education	52 (76.5%)	13 (19.1%)	3 (4.4%)	
	Fine Arts	62 (75.6%)	18 (22.0%)	2 (2.4%)	
	Engineering	65 (73.0%)	23 (25.8%)	1(1.2%)	
Year of Study	First Year	64 (81.0%)	14 (17.7%)	1 (1.3%)	0.003#
	Second Year	85 (73.9%)	24 (20.9%)	6 (5.2%)	
	Third Year	52 (56.5%)	39 (42.4%)	1 (1.1%)	
	Fourth Year	70 (69.3%)	28 (27.7%)	3 (3.0%)	
Residence Address	Center	149 (67.1%)	63 (28.4%)	10 (4.5%)	0.05#
	Periphery	122 (73.9%)	42 (25.5%)	1 (0.6%)	
Family Income Status	Poor	50 (83.3%)	9 (15.0%)	1 (1.7%)	0.001#
	Moderate	196 (71.5%)	72 (26.3%)	6 (2.2%)	
	High	25 (47.2%)	24 (45.3%)	4 (7.5%)	
Household Composition	Living with both parents	234 (70.5%)	88 (26.5%)	10 (3.0%)	0.872#
	Living with one parent only	31 (68.9%)	13 (28.9%)	1 (2.2%)	
	Living with a relative	6 (60.0%)	4 (40.0%)	0 (0.0)	

\*one-way ANOVA \*\* chi-Square test # Fisher's exact test

Table 4: The relationship of respondents' overall level of knowledge with family structure:

Variables		Poor knowledge N=271	Moderate knowledge N=105	Good knowledge N=11	p-value
Family Size	<5	30 (69.8%)	13 (30.2%)	0 (0.0%)	0.473#
	5- <7	96 (68.1%)	37 (26.2%)	8 (5.7%)	
	7- < 9	102(70.8%)	40 (27.8%)	2 (1.4%)	
	≥9	43 (72.9%)	15 (25.4%)	1 (1.7%)	
Father's Education	Illiterate	12 (80.0%)	3 (20.0%)	0 (0.0%)	0.372#
	Primary Education	51 (73.9%)	17 (24.7%)	1 (1.4%)	
	Middle School	32 (74.4%)	10 (23.3%)	1 (2.3%)	
	High School	85 (72.6%)	31 (26.5%)	1 (0.9%)	
	University Degree	72 (61.5%)	37 (31.7%)	8 (6.8%)	
	Higher Education	19 (73.1%)	7 (26.9%)	0 (0.0%)	
Mother's Education	Illiterate	10 (76.9%)	3 (23.1%)	0(0.0%)	0.077#
	Primary Education	63 (78.7%)	16 (20.0%)	1 (1.3%)	
	Middle School	48 (76.2%)	12 (19.0%)	3 (4.8%)	
	High School	80 (72.1%)	29 (26.1%)	2 (1.8%)	
	University Degree	65 (59.6%)	39 (35.8%)	5 (4.6%)	
	Higher Education	5 (45.5%)	6 (54.5%)	0(0.0%)	
Mother's Employment Status	Housewife	202 (72.7%)	68 (24.5%)	8 (2.8%)	0.353#
	Government Employee	49 (61.2%)	31 (36.3%)	2 (2.5%)	
	Private Sector Employee	20 (69.0%)	7 (27.6%)	1 (3.4%)	

\*\* chi-Square test # Fisher's exact test

Table 3.5: The relationship of respondents' level of attitude about reproductive health with socio-demographics

Variables		Negative Attitude N=18	Neutral attitude N=369	Positive Attitude N=0	p-value
Age	Mean ± SD	21.33±1.19	20.79± 1.64		0.168 <sup>^</sup>
College Name	Arts	2 (2.6%)	74 (97.4%)		0.211 <sup>#</sup>
	Marine Sciences	1 (1.4%)	71 (98.6%)		
	Education	6 (8.8%)	62 (91.2%)		
	Fine Arts	3 (3.7%)	79 (96.3%)		
	Engineering	6 (6.7%)	83 (93.3%)		
Year of Study	First Year	3 (3.8%)	76 (96.2%)		0.248 <sup>#</sup>
	Second Year	9 (7.8%)	106 (92.2%)		
	Third Year	2 (2.2%)	90 (97.8%)		
	Fourth Year	4 (4.0%)	97 (96.0%)		
Residence Address	Center	10 (4.5%)	212 (95.5%)		0.874 <sup>**</sup>
	Periphery	8 (4.8%)	157 (95.2%)		
Family Income Status	Poor	7 (11.7%)	53 (88.3%)		0.033 <sup>#</sup>
	Moderate	10 (3.6%)	264 (96.4%)		
	High	1 (1.9%)	52 (98.1%)		
Household Composition	Living with both parents	17 (5.1%)	315 (94.9%)		0.821 <sup>#</sup>
	Living with one parent only	1 (2.2%)	44 (97.8%)		
	Living with a relative	0 (0.0%)	10 (100.0%)		

<sup>^</sup> two-sample independent t-test <sup>\*\*</sup> chi-Square test <sup>#</sup> Fisher's exact test

Table 3.6: The relationship of respondents' level of attitude about reproductive health and family structure

Variables		Negative Attitude N=18	Neutral attitude N=369	Positive Attitude N=0	p-value
Family Size	<5	2 (4.7%)	41 (95.3%)		0.984#
	5- <7	6 (4.3%)	135 (95.7%)		
	7- < 9	7 (4.9%)	137 (95.1%)		
	≥9	3 (5.1%)	56 (94.9%)		
Father's Education	Illiterate	1 (6.7%)	14 (93.3%)		0.363#
	Primary Education	3 (4.3%)	66 (95.7%)		
	Middle School	4 (9.3%)	39 (90.7%)		
	High School	5 (4.3%)	112 (95.7%)		
	University Degree	3 (2.6%)	114(97.4%)		
	Higher Education	2 (7.7%)	24 (92.3%)		
Mother's Education	Illiterate	2 (15.4%)	11 (84.6%)		0.166#
	Primary Education	3 (3.7%)	77 (96.3%)		
	Middle School	5 (7.9%)	58 (92.1%)		
	High School	6 (5.4%)	105 (94.6%)		
	University Degree	2 (1.8%)	107 (98.2%)		
	Higher Education	0 (0.0%)	11 (100.0%)		
Mother's Employment Status	Homemaker	16 (5.8%)	71 (94.2%)		0.341#
	Government Employee	2 (2.5%)	78 (97.5%)		
	Private Sector Employee	0 (0.0%)	29 (100.0%)		

# Fisher's exact test

Table 7- participants' perception about including reproductive health in the university curriculum

Item	No	%
Education about reproductive health is necessary, even with objections	185	47.8
It's better to listen to the objectors and reach a compromise	84	21.7
sensitive topic and should be avoided in formal education	48	12.4
Education in this area should be optional for students who wish to learn about it	44	11.4
no comment	26	6.7
Total	387	100.0

Table 8: Levels of Knowledge about Reproductive Health Domains

	Mean ± SD	Poor knowledge	Moderate knowledge	Good knowledge
Knowledge of the menstrual cycle (3 Q)	2.1±0.79	84 (21.7)	169 (43.7)	134 (34.6)
Knowledge about premarital screening ( 5 Q)	2.13±1.04	278 (71.8)	64(16.5)	45 (11.6)
Knowledge about pregnancy ( 15 Q)	7.54±2.70	219 (56.6)	132 (34.1)	36 (9.3)
Knowledge about Breastfeeding (5 Q)	1.70±1.09	302 (78.0)	60 (15.5)	25 (6.5)
Knowledge about Family Planning ( 7Q)	1.97±1.53	311 (80.4)	72 (18.6)	4 (1.0)
Knowledge about Reproductive tract infection ( 9Q)	3.67±1.71	261 (67.4)	106 (27.4)	20 (5.2)
Overall knowledge (Q45)	19.27± 6.35	271 (70.0)	105 (27.1)	11 (2.9)

Table 9. Levels of Attitude toward Reproductive Health Domains

	Mean ± SD	Negative attitude	Neutral attitude	Positive attitude
Attitude toward the menstrual cycle	2.08±0.72	87(22.5)	181(46.8)	119(30.7)
Attitude toward the premarital screening	1.44±0.59	233(60.2)	134(34.6)	20(5.2)
Attitude toward pregnancy	1.50±0.5006	192(49.6)	195(50.4)	
Attitude toward Breastfeeding	1.44±0.593	145(37.5)	229(59.1)	13(3.4)
Attitude of the Family Planning	1.87±0.596	95(24.5)	244(63.1)	48(12.4)
Attitude of the Reproductive Tract Infection	2.09±0.548	41(10.6)	267(69.0)	79(20.4)