

## Original Research Article

# Reproductive health awareness among female university students at Saudi Arabia

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## ABSTRACT

**Background:** Reproductive health is a major part of a woman's life to ensure a healthy life for both mothers and their babies. However, most women do not have the proper knowledge and awareness of that subject. Objectives were to assess the awareness of reproductive health among Saudi female university students and to determine the factors associated with the level of awareness.

**Methods:** A cross-sectional study conducted among 347 participants, using multi-stage stratified sampling. A structured self-administered questionnaire was used to assess the knowledge level of the five-major component of reproductive health.

**Results:** The results revealed an average level of knowledge about reproductive health (49.4%) among the college students. There was a significant association between having children, mother's working status, and father educational level, family income and participant reproductive health knowledge ( $p=0.02$ ,  $0.005$  and  $0.02$ ) respectively. Although 77.1% of the participants had good knowledge of menstrual health and hygiene, they showed misconceptions. The knowledge about family planning, prenatal and antenatal were high 66.6% and 53.9%. The level of knowledge on sexually transmitted diseases was 58% high among students and only 40% have heard of HIV/AIDS but other diseases were less recognized.

**Conclusions:** The knowledge of reproductive health is considered poor. Father's education level and family income were associated with the level of a student's knowledge. Educational session about RH is needed among students with focus on menstrual health and hygiene, antenatal care, family planning, breastfeeding, and sexually transmitted diseases.

**Keywords:** Awareness, Female students, Knowledge level, Reproductive health, Saudi Arabia

## INTRODUCTION

Reproductive health is the most important, yet overlooked aspect of female lives, it is the health and the wellbeing of future mothers and the health of their babies. Reproductive health (RH) awareness and knowledge is an important matter for every healthy female to carry out and maintain their reproductive health and wellbeing avoiding any possible harms and risk in a safe and sufficient way.

Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease regarding the reproductive system.<sup>1</sup> To maintain optimal and sexual health, women should know sufficient information about their reproductive system and they should be informed and encouraged to prevent the many health problems and consequences resulting from poor reproductive health knowledge.<sup>2</sup> About 52% of females from all over the world are in the childbearing age (reproductive age).<sup>3</sup>

A study conducted in Ethiopia to assess the knowledge of university student about the reproductive and sexual right found the level of awareness was low.<sup>4</sup> Another study reported that a high number of female university students in Egypt had poor knowledge about important issues in RH.<sup>5</sup> Likewise a program on reproductive health knowledge and attitude among women in rural Palestinian community found that there is low knowledge regarding postnatal health care, family planning method as well as poor knowledge concerning sexually transmitted diseases.<sup>6</sup> A study conducted at the outpatient clinic on Taibah University main campus found that women had little and poor knowledge about the vitamins and folic acid supplementations and its effect of the pregnancy.<sup>7</sup> In Saudi Arabia, a study in Hail carried out to assess the knowledge of university female students of the RH and hygiene found that before the occurrence of the first menstrual cycle 62.5% of students had knowledge, and 54% of students are aware of RH and hygiene.<sup>8</sup>

Having an aware generation of female will help to increase the knowledge about different types of risk and harms resulting in a better overall health of inborn and reducing the possible burden of reproductive health related diseases and risks. Therefore, we conducted this study to assess the awareness level about the reproductive health among female students at Princess Nourah bint Abdulrahman University (PNU) in Riyadh, Saudi Arabia.

Thus, the objectives of the current study were to assess the awareness of reproductive health among students in PNU Riyadh, Saudi Arabia, and determine the factors associated with the level of awareness of the reproductive health for each section among PNU students.

## METHODS

### *Study design and setting*

A cross-sectional study was conducted among students at Princess Nourah University in Riyadh, Saudi Arabia over a period of 3 months from January to April 2017.

### *Sampling technique and size*

Multi-stage stratified sampling was used. First stage: selecting randomly 2 major colleges: college of health and rehabilitation sciences and community college by using simple random selection from four major colleges available in PNU, (Colleges of Humanities, Colleges of Sciences, Colleges of Health and College of community). Second stage: by simple random selection one college from the five health colleges (College of Nursing, College of Pharmacy, College of Health and rehabilitation sciences, College of Dentistry and College of Medicine) The College of Health and rehabilitation sciences. The College of Community only has one college therefore no randomizing was done. Third stage: using openepi with a total population of 45678 the sample size was 347 students, based on 95% CI, 80% power and 54% low

knowledge level from previous study. 8 then by using proportional allocation 90 students from the College of Health and rehabilitation sciences and 257 students from The College of Community, the students list was obtained from the students' affair and then the participants were selected by simple random sampling.

### *Data collection method, and the instruments used*

The data was collected using a structured self-administered translated Arabic questionnaire that it was translated by a translator, the data collection tool consists of two parts: the first one is about demographic criteria of the participant (age, marital status, having children, family income, parents' educational level and their parents' working status). The second assessing awareness about reproductive health and its components: seven questions on menstrual health and hygiene, 10 structured and constructed questions on prenatal and natal care, 14 questions on family planning, asking about the contraceptive methods and benefits of family planning. seven questions asking about the benefits and importance of breast feeding. And finally, the last section consists of six questions asking about the awareness of STDs.<sup>9,10</sup> The Arabic version of the questionnaire was pilot tested on 20 students to assure comprehension and ease of administration in addition to determining the time needed to fill the questionnaire.

The Arabic version of the questionnaire was pilot tested on 20 students to assure comprehension and ease of administration in addition to determining the time needed to fill the questionnaire. The data were collected at the community college and college of health and rehabilitation sciences, and it was collected by the research team.

### *Data management and analysis plan*

The data was analyzed using SPSS version 20. Using descriptive statistics in the form of frequencies and percentage for categorical variables, mean and standard deviation for continuous variables. Regarding inferential statistics, chi square was the used test. The correct answers were scored 1 while the incorrect was scored 0, The total score was calculated based on the number of items in each component. Each section was scored and the total score was calculated then using median of each section to be categorized into high and low knowledge.

### *Ethical consideration*

All required official permission were considered and the actual work started after obtaining IRB number 17-0020. Informed consent was attached with the questionnaire, and the collected data did not contain any identification of the participant, and it was kept in a secure place. Only principal investigator and co-investigator had access to the file.

## RESULTS

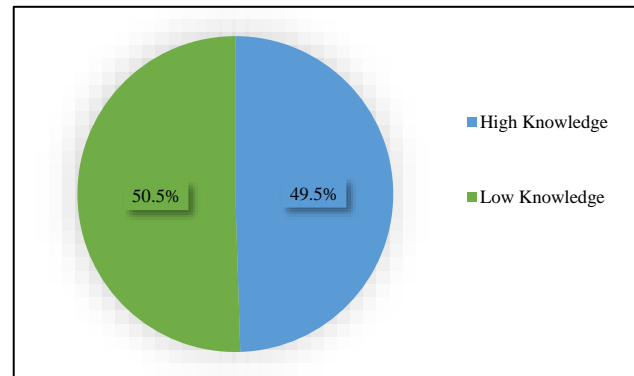
Figure 1 reveals the overall reproductive health knowledge of total 360 students at PNU indicate (49.5%) of the participants scored as high level of knowledge. All participants sociodemographic characteristics displayed on Table 1.

**Table 1: Demographic criteria of the participants.**

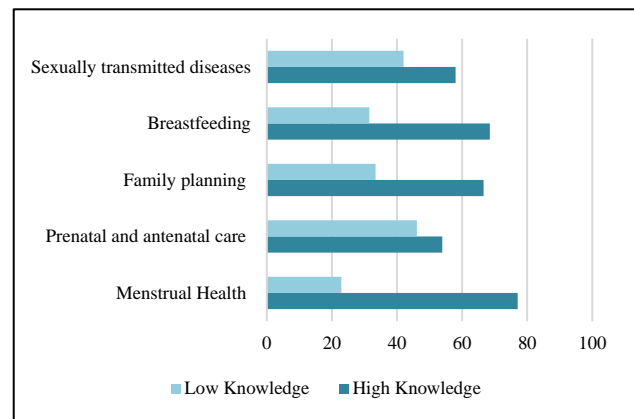
	N	%
<b>Academic discipline</b>		
College of health and rehabilitation sciences	105	29
Community college	257	71
<b>Marital status</b>		
Single	329	90.9
Married	29	8
Divorced	3	0.8
<b>Children</b>		
No	348	96.1
Yes	14	3.9
<b>Mother's level of education</b>		
No education	40	11
Primary school	58	16
Intermediate school	45	12.4
High school	115	31.8
University graduate	103	28.5
<b>Mother's working status</b>		
Not working	88	24.3
Working	273	75.5
<b>Father's level of education</b>		
No education	20	5.5
Primary school	29	8
Intermediate school	47	13
High school	110	30.4
University graduate	155	42.8
<b>Father's occupation</b>		
Governmental sector	163	45
Private sector	36	9.9
Own business	47	13
Retired	115	31.8
<b>Average family income in SR</b>		
5000 or less	50	13.8
6000-10000	124	34.3
11000-15000	87	24
More than 15000	101	27.9

Figure 2 represents the level of knowledge of the five components of the reproductive health, it showed that participants who possessed good knowledge about menstrual health and hygiene (77.1%) of students, 53.9% of students had high knowledge, 66.6% of them had good knowledge, 68.5% had good knowledge of breastfeeding, and 58% of students scored high on the knowledge of sexually transmitted diseases. It was found that 49% of the study's participants had good knowledge of

reproductive health. 75% of health and rehabilitation sciences students had good knowledge, while 39% of community college students had good knowledge of reproductive health.



**Figure 1: Total Reproductive health knowledge among PNU students.**



**Figure 2: Level of knowledge about reproductive health main components.**

Table 2 illustrates the association between the demographic criteria and the level of reproductive health awareness of the participants in PNU university, the findings show a significant association between marital status and the reproductive knowledge, 49.2% single students scored as high knowledge but, there was no significant association between having children and level of knowledge ( $p=0.02$ ), in addition the findings demonstrate the family income in relation to students reproductive knowledge found a significant association between family income and level of knowledge ( $p=0.000$ ). Mother's working status had a significant association with the level of knowledge ( $p=0.05$ ). In addition, the table demonstrate the fathers' level of education in relation to the level of awareness of reproductive health, the finding shows that there is a highly significant association between the two variables ( $p=0.02$ ). Also, there was a significant association between the father's occupation and the level of awareness of reproductive health among the participants ( $p=0.746$ ).

**Table 2: Association between the demographic factors and the level of reproductive health awareness among PNU students.**

		Low knowledge N (%)	High knowledge N (%)	Total	P value
<b>Marital status</b>	Single	166 (50.8)	161 (49.2)	327 (100)	0.811
	Married	14 (48.3)	15 (51.7)	29 (100)	
	Divorced	1 (33.3)	2 (66.7)	3 (100)	
	Total	181 (50.4)	178 (46.6)	359 (100)	
<b>Academic discipline</b>	College of health and rehabilitation science	25 (24)	79 (76)	104 (100)	0.000*
	Community college	156 (60.9)	100 (39.1)	256 (100)	
	Total	181 (50.3)	179 (49.7)	360 (100)	
<b>Mother's education level</b>	No education	24 (61.5)	15 (38.5)	39 (100)	0.359
	Primary school	28 (48.3)	30 (51.7)	58 (100)	
	Intermediate school	26 (59.1)	18 (40.9)	44 (100)	
	High school	53 (46.1)	62 (53.9)	115 (100)	
	University graduate	50 (48.5)	53 (51.5)	103 (100)	
	Total	181 (50.4)	178 (49.6)	359 (100)	
<b>Mother's working status</b>	Not working	33 (37.5)	55 (62.5)	88 (100)	0.035*
	Working	148 (54.5)	123 (45.5)	271 (100)	
	Total	181 (50.4)	178 (49.6)	359 (100)	
<b>Father's education level</b>	No education	17 (89.5)	2 (10.5)	19 (100)	0.009*
	Primary school	16 (55.2)	13 (44.8)	29 (100)	
	Intermediate school	24 (51.1)	23 (48.9)	47 (100)	
	High school	51 (46.8)	53 (53.2)	109 (100)	
	University graduate	72 (46.5)	83 (53.5)	155 (100)	
	Total	180 (50.1)	179 (49.9)	359 (100)	
<b>Father's occupation</b>	Governmental sector	84 (51.5)	79 (48.5)	163 (100)	0.746
	Private sector	17 (47.2)	19 (52.8)	36 (100)	
	Own business	26 (55.3)	21 (44.7)	47 (100)	
	Retired	53 (46.9)	60 (53.1)	113 (100)	
	Total	180 (50.1)	179 (49.9)	359 (100)	
<b>Family income</b>	5000 or less	38 (77.6)	11 (22.4)	49 (100)	0.001*
	6000-10000	62 (50)	62 (50)	124 (100)	
	11000-15000	36 (41.9)	50 (58.1)	86 (100)	
	More than 15000	45 (44)	56 (56)	101 (100)	
	Total	181 (50.3)	179 (49.7)	360 (100)	

\*Significant difference at  $p \leq 0.05$ .

Table 2 shows the how much is the association between the participant characteristics and their knowledge level by using the Odds ratio. Female students having children were about 5 times more to have high knowledge level than those not having children OR =5.30 (1.07-35.23).

## DISCUSSION

Awareness about reproductive health problems is a must to prevent and control the consequences resulting from it. The aim of this study was to determine the level of awareness of reproductive health among Princess Nourah University students. Although there are several studies conducted regarding menstrual knowledge worldwide, yet in Saudi Arabia the need for more assessment of menstrual knowledge is needed. Most participants in the study showed high knowledge (77.1%), similarly the study that was conducted in Al-Taif stated that 56.2 % of

participants scored high knowledge, the findings contradict the study conducted in Jeddah that showed that only 24.1% had good knowledge.<sup>11,12</sup>

Prenatal and antenatal care has many aspects such as: adequate diet, exercise and update vaccination before getting pregnant, aware about the hazards of smoking x-ray, stress, cats and the importance of folic acid during pregnancy. On assessing level of knowledge about Prenatal and antenatal care the result revealed that slightly more than half of students 53.9% had good knowledge, contrary to study in Riyadh, where the most of study participant 95.9% the mean score about antenatal care was poor knowledge in contrast, less than 1% of them score as good knowledge.<sup>13</sup> Similar to study in Pakistan and Egypt show that education associated with having better knowledge about effects on women health



in general ( $p=0.02$ ) and specific on reproductive health effect ( $p<0.001$ ).<sup>14,15</sup>

Regarding family planning the overall results indicate that about 66.6% of the participant had high knowledge but despite this good knowledge we were expected a higher knowledge of FB among these educated group, at the same time, a study conducted in Ethiopia indicate that 82.3% of the respondent had heard about family planning.<sup>15</sup>

As breastfeeding is an important aspect of child care and still widely acceptable and encouraged to practice in Saudi Arabia high level of knowledge were attained, 68.5% of students were reported having high level of knowledge on this subject. While 56.4% of the students claimed to have sufficient knowledge on breastfeeding. Breastfeeding is perceived as a better source of feeding than artificial milk by 95.6% of students, which is an impressive yet predictable percentage as likely most students or their mothers were breastfed which might be their intensive and source of that perception, that breastfeeding is better or more beneficial. In a similar study done years earlier among university students in Dammam, Saudi Arabia in 1997. 57% participants reported to have adequate level of knowledge regarding breastfeeding and had positive attitude towards breastfeeding as 91% of participants were breastfed as infants and 93% plan to breastfeed.<sup>16</sup> After all the high level of knowledge concerning breastfeeding can be attributed to Saudi Arabia's culture and believe system, as it is a part of its history and its religion. Formulated milk was only introduced at the 20's or 30's but to Saudi Arabia it was probably later, mothers who couldn't breastfeed hired a "wet nurse" as called now, and who couldn't feed their babies cow or goat's milk. For It being relatively new concept and more expensive to choose formulated milk over breastmilk was not considered the first rout chosen by a mother. And it was advised in the Holy Quran to breastfeed one's child up to 2 years, many try to uphold to what is advised but as of the mothers of today are not stay at home moms it is harder to accomplish and less convenient. Looking to that fact that breastfeeding was and still a significant part of the culture of this country and a mother's nature, breastfeeding is widely encouraged upon by family, media and medical workers by spreading information about its benefits and in ministry of health hospitals there is a breastfeeding program to teach new mother how and the benefits of breastfeeding, which in turn affects the perception and knowledge of the population including this study's population.

When discussing about the consequences and complications resulting from STDs such as cancer and infertility, young women are more susceptible and at a high risk than men.<sup>17</sup> The findings show that 58% of the students had a high level of knowledge about sexually transmitted disease while 42% had a poor level of knowledge.

## CONCLUSION

The knowledge of reproductive health among PNU students is low. also, misconceptions about certain aspects of the subject are present. half of the participants found to have inadequate to poor knowledge. Family income had a surprising significant association to the level of knowledge a student possesses. Free classes targeting reproductive health subjects is needed for its importance. While the results of this study indicating high knowledge of reproductive health among college students it is still a subject to explore.

## Recommendations

Regarding education of reproductive health courses at university and school that suite each age and needs are required. And encouraging families to openly discuss and answer questions to ensure the validity of the answers their members might get if not given the opportunity to discuss such matters with family members, furthermore the establishment of awareness campaigns to raise awareness about various reproductive health aspect in the universities and school.

More research is needed, similar research but with a few alterations such as the students' willingness of practice good habit in relation to their reproductive health or if they practice it already and attitude. Taking those factors attitude and practice into consideration to study the relationship between knowledge, attitude and practice to further understand and identify the populations' awareness and its impact, especially a national study is required to assess the current situation for the women health and problem regarding to reproductive health.

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*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee Princess Nourah Bint Abdulrahman University (IRB log Number: 17-0020)*

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