

## ORIGINAL RESEARCH

# Knowledge and beliefs regarding menstruation among Saudi nursing students

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**Received:** August 23, 2015

**Accepted:** September 23, 2015

**Online Published:** September 29, 2015

**DOI:** 10.5430/jnep.v6n1p23

**URL:** <http://dx.doi.org/10.5430/jnep.v6n1p23>

## ABSTRACT

This study was undertaken to assess the knowledge and beliefs of Saudi female nursing students towards menstruation. A cross sectional survey was conducted on a sample of 400 students, the data was collected using a self-administered questionnaire. The results revealed that a considerable percentage lacked the knowledge and correct beliefs regarding menstruation. Furthermore a significant relationship was found between the marital status, academic year and the score of knowledge and beliefs but not with age. Although the source of information among the majority of the participants was derived from their mother, those who had good knowledge were the participants who belonged to the above 3rd academic year. In conclusion, it is essential to emphasize the importance of compulsory reproductive health education from an early age to help adolescent girls manage menstrual symptoms and increase their awareness; this could be achieved by adding a course of reproductive health course beginning at the intermediate school level.

**Key Words:** Menstruation, Knowledge, Beliefs, Saudi girls

## 1. INTRODUCTION

The menstrual cycle in females is an indicator of changes occurring during the adolescent stage. The menstrual cycle is a component of natural changes that occur in the uterus and ovaries as an essential part of sexual reproduction and it is accompanied by a change in the physical, psychological and social aspects of a woman's life. Menarche, the first onset of menstruation occurs between the ages of 11 and 15 years old with an average age of 13 years old.<sup>[1]</sup> Girls at the age of puberty need to have educational sessions about the changes occurring to their bodies as well as inclusion of their mothers in this process so that mothers can provide healthy advice to their daughters about menstruation.<sup>[2]</sup> The topic of menstruation still remains taboo in many countries and discussions of problems related to menstruation are treated as shameful. The attitude and behavior towards menstruation among girls is influenced by her socio-economic, cultural

and religious background and moreover her knowledge about menstruation.<sup>[3]</sup>

The lack of proper knowledge about menstruation leads to negative attitude and misconceptions about this natural physiological process and may have adverse health effects.<sup>[4]</sup> Having menstrual dysfunction is common among students and previous studies highlighted the importance of health education for early detection of these problems such as menstrual cycle irregularities, hyper- or hypomenorrhoea, poly- or Oligomenorrhoea, dysmenorrhoea, and premenstrual syndrome (PMS).<sup>[5]</sup>

According to some studies, girls' poor personal hygiene and unsafe sanitary conditions contribute to gynecological problems and often result in repeated cases of vulvar or pelvic infections in adolescent girls.<sup>[1,2]</sup> Many women experience reproductive tract infections which can be trans-

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mitted to the offspring during pregnancy. It is important to note that women with better knowledge are at less risk of these infections, therefore imparting menstrual knowledge before menarche may reduce reproductive infections of many women in the entire world.<sup>[4]</sup>

Previous studies conducted assessing knowledge about menstruation among adolescent girls throughout the world in different regions obtained varied results. Reports from the East Mediterranean region show that girls learn about menstruation only when they begin the first period.<sup>[6]</sup> In a Jordanian study the results indicated that 82.4% of responders lacked knowledge of pre-menarcheal menstruation and this contributed to unhealthy practices during menstruation.<sup>[7]</sup> According to Egyptian study 85% of girls had satisfactory knowledge about menstruation.<sup>[8]</sup>

A comparative study conducted in Saudi Arabia reported that 53.4% of girls in government schools and 67.9% in private schools have knowledge of menstruation. Mothers were reported to be the most common source of information in many studies<sup>[9,10]</sup> followed by friends (35.3%) and teachers or matrons.<sup>[4,10]</sup> Although mothers and teachers provide information about the facts of menstruation however, they often failed to prepare the girls emotionally as the older women themselves have limited knowledge about this physiological process. Moreover the mother's educational level and socio economic background are other determinants to providing menstruation knowledge to their daughters.<sup>[4,11,12]</sup>

The results of a study conducted in Riyadh, Saudi Arabia about menstruation knowledge among adolescent demonstrated that the scores for knowledge were low and mothers, religious books and sisters were the main sources of menstruation information. Also two thirds of the girls avoided eating certain foods, drinks and activities including showering, performing perineal care and practicing several indigenous rituals during their periods.<sup>[13]</sup>

Also in another study conducted in Riyadh in secondary schools about menstruation, the results indicated a lack of knowledge among participants,<sup>[14]</sup> while another study conducted in Al-Khobar revealed a high rate of unhealthy practices including self-administration of medication during menstruation.<sup>[15]</sup>

Recently a study conducted in Hail university in Saudi, the results show 54% overall reproductive health knowledge and found relationship with marital status and age also the study conclude the importance of health education for future generation.<sup>[16]</sup>

Results of previous studies conducted in Jordan and India about menstrual beliefs among adolescent girls indicated

that discussing menstrual problems even among the closest family members does not exist,<sup>[17,18]</sup> also talking about menstruation is considered shameful and embarrassing.<sup>[19]</sup> The negative attitude and confusions are a result of lack of educational resources.<sup>[18]</sup>

Many folk beliefs are prevailing all over the world regarding menstruation and those beliefs are associated with many social and cultural implications.<sup>[2]</sup> Studies in many different parts of the world and cultures reported the existence of different beliefs, for example, changes in diet, bathing, social mobility and prohibition from participating in religious activities. Bathing is considered as unhealthy and the cause of either prolonged or no bleeding by many women in Egypt.<sup>[8]</sup>

In India 50% of the women do not take shower during menstruation as they believe it will increase the intensity of pain and results in discontinuation of menstrual bleeding. Certain foods like eggs, dry fruits, and yoghurt and green leafy vegetables are avoided as these foods are considered too hot or too cold.<sup>[20]</sup>

A study from Lebanon about menstrual beliefs reported that 89.5% are restricted from social life, 24% do not remove the unwanted hair (depilation), 35.5% will alter the eating habits, 22% do not drink cold water, 20% believe amenorrhea can be prevented by avoiding Vitamin C, 20% do not touch plants or baby and 19% would not walk barefooted.<sup>[21]</sup> These results are consistent with the results reported from India where girls are restricted from family functions and social ceremonies, and Saudi Arabia where girls avoid Vitamin C and also alter their eating habits.<sup>[9,13,21]</sup>

Many studies about menstrual knowledge were conducted and practiced all around the world, but only a few related to this subject were conducted in Saudi Arabia. The studies carried out in Saudi were at the school level, and only one was carried out recently among medical students at Hail University. Therefore, the purpose of this study is to assess menstrual knowledge and beliefs among Saudi nursing students, and also to find the relationship between their level of menstrual knowledge and some of their demographic data.

## 2. METHODOLOGY

### 2.1 Study design and sample

A cross sectional survey was conducted, in nursing college in Al Khobar city at Eastern province in Saudi, all 400 female students registered in the academic year 2013-2014 in all academic years were included in the study as a sample. These students represent the adolescents Saudi girls from Eastern province in Saudi; this sample size was adequate as previous studies used the appropriate size.

## 2.2 Data collection

The data was collected using a valid, self-administered, anonymous questionnaire, included demographic data, knowledge and beliefs questions about menstruation, all the questions were close ended. The content validity was achieved by reviewing the previous similar studies.

## 2.3 Ethical issues

Data were collected after getting approval from the research ethical committee of the college, also approval of the college authorities and according to the students' academic schedule 400 questionnaires distributed to the students in their class. The questionnaires were delivered and took about 30 minutes to be completed. The purpose and the objectives of the study were explained by the researcher and students were informed that participation is not obligatory. Also the students were given an informed consent attached to the questionnaire and asked to sign it in order to assure their acceptance participating in the study, it was including that all data collected will be strictly confidential.

## 2.4 Data analysis

The collected data from the filled questionnaire were analyzed using SPSS version 16. Data were revised, coded and tabulated using the frequency and percentage. Chi square test used to test the significance of the variables with  $p < .05$ .

Scoring system used for assessing the student's knowledge and beliefs towards menstruation, the knowledge and beliefs section consists of 14 questions and the correct answers were pre-determined from the literature. A score of 1 were given to the correct answer and 0 for the wrong and don't know answer. Total score was obtained for each student (0-14). The total score was categorized as follows:

- Good knowledge = Score  $\geq 10.5$  ( $\geq 75\%$  correct answers)
- Acceptable knowledge = Score 7-10
- Poor knowledge = Score  $\leq 7$ .

## 3. RESULTS

The responding rate was 85.5%.

### 3.1 Demographic data of the participant

The results in Table 1 showed that the majority of the students were between 18-20 years old (53.5%) and 81% were single; according to academic level, 39.2% were in foundation, the rest were in different academic levels also the majority of them the mothers' level of education was intermediate (39.5%) but also 26.9% have secondary level and 13.7% the mother cannot read and write also 19.9% of them the level of mother education was university .

**Table 1.** Background characteristics of the sample of the students (n = 342) and relationship with score of knowledge and beliefs

Variable	N	%	Knowledge and beliefs score	
			$\chi^2$	P value
<b>Age</b>			0.21	
< 18	23	6.7		
18-20	183	53.5		.8
21-23	114	33.3		
> 23	22	6.5		
<b>Marital status</b>			11.17	
Single	277	81.0		.00
Married	65	19.0		
<b>Academic year</b>			7.08	
Foundation-3rd Year	275	80.4		.02
> Third Year	67	19.7		
<b>Mother education</b>			8.74	
< Intermediate	182	52.9		.18
> Intermediate	160	46.5		

### 3.2 Knowledge and beliefs about menstruation

The results of the study showed that 45.1% of the students had acceptable knowledge and belief about menstruation,

and respectively 30.2%, 24.1% had poor and good (see Table 2).

According to the source of menstrual knowledge, the results showed that 58.8% of the participants received menstrual information from their mothers, 20.5% from friends, 14.9% from school teachers, and 5.8% did not receive any information (see Table 3).

**Table 2.** Knowledge and belief's score of the students (n = 342)

Knowledge and Belief	Frequency (n)	Percent (%)
Poor	104	30.2
Acceptable	155	45.1
Good	83	24.1

**Table 3.** Source of knowledge about menstruation among the sample (n = 342)

Variable	Frequency (n)	Percent (%)
Information about Menstruation received from		
Mother	201	58.8
Friend	70	20.5
School teacher	51	14.9
Don't receive any	16	5.8

The results about the knowledge and beliefs about menstruation were showed in Table 4. According to the question about the menarcheal age in Saudi, 16.1% answered less than 10 years old and 2.0% more than 14, also about the menstruation duration, 1.8% answered less than 3 days, 1.8% more than 10 days and 0.6% do not know the answer, according to the menstruation frequency 10.2% of the participants answered between 10-20 days, 13.2% between 30-40 days and 13.2% do not know, related to the normal number of pads daily used during menstruation, 5.6% answered 1-2 pads and 16.7% more than 5 pads.

Concerning their beliefs about menstruation, 45.6% think that no need for consultation for severe dysmenorrhea, and 13.2% do not know also 19.6% perceive that no relationship between irregular menstruation and organic diseases, and 28.9% do not know.

In addition, 26% of the participants believe that the amount of blood during menstruation does not affect the women's health and 18.1% do not know, 83.0% of the participants believe also that the blood of menstruation is dirty and bleeding is useful and good to release this dirty from body, also 54.7% of the participants trust on the benefits about some kind of food omission during menstruation, and 21.9% believe that during menstruation no warm shower should be taken.

In addition to that 45.0% assume that exercise should be stopped during normal menstruation and 12% they do not know, 87.7% believe that regular menstruation means healthy female and 4.7% do not believe, and 7% do not know about

that, also a significant percentage of the students assume that no relationship between having extra body hair and irregular menstruation and thyroid disorders and menstrual disorders.

### 3.3 Relationship between menstrual knowledge and beliefs score (KB) with some factors

The results showed a relationship between academic year and marital status with the score of KB ( $p < .00$ ) and ( $p < .02$ ) respectively. The results showed no relationship between KB scores, and age or mother level of education (see Table 1).

## 4. DISCUSSION

The body of knowledge surrounding women's menstrual cycle remains tainted by age-old myths and taboos. Saudi females like other adolescents girls often lack knowledge regarding reproductive health, including menstrual hygiene, which can be due to socio-cultural barriers and restrictions in which they grow up, as few studies conducted in Saudi show.

Despite the number of the studies conducted about menstruation among adolescents, in Middle East and especially in Saudi Arabia, the need for highlighting this subject is an essential and necessary requirement. Majority of the girls in Saudi Arabia lack scientific knowledge about menstruation and puberty. Adolescent girls are often reluctant to discuss this topic with their parents and often hesitate to seek help regarding their menstrual problems.<sup>[10]</sup>

In the present study, the results highlighted that only 24.1% of participants had good scores regarding menstrual knowledge and beliefs. Furthermore, 30.2% and 45.1% had poor and acceptable scores respectively, while 43.8% of Saudi girls in Taiif were below the standard level of menstrual knowledge.<sup>[22]</sup>

In this study, the source of information among 58.8% was their mothers which correlates with studies conducted in Iran 55%<sup>[23]</sup> and India 54%<sup>[10]</sup> but not with those in Lebanon 86.9%.<sup>[21]</sup> In addition, 20.5% received menstrual information from friends, 14.9% from teachers; and 4.7% did not receive any.

These results indicate a lack of knowledge and beliefs about menstruation whatever their source of information. As shown in many previous studies,<sup>[2,7,21,23]</sup> the information and beliefs towards menstruation are transferring from generation to generation by mothers, no matter what the educational level of participants were.

The results of the current study showed that the majority of participants knew the normal menarcheal age, and this may be due to the majority of them having had a normal onset of menarche. Such result (79.2%) is more than the finding of a previous study in Saudi (65%),<sup>[24]</sup> and in Egypt (48%).<sup>[25]</sup>

**Table 4.** Knowledge and belief's questions distribution of the sample of the students (n = 342)

Variable	Frequency (n)	Percent (%)
<b>Normal Menstruation should be started</b>		
Less than 10 years	55	16.1
11-14	271	79.2
More than 14	7	2.0
<b>Normal Menstruation lasts for (days)</b>		
Less than 3	6	1.8
3-7	246	71.9
More than 7	87	25.5
Don't know	2	0.6
<b>Regular menstruation repeated each</b>		
10-20 days	35	10.2
20-30 days	213	62.3
30-40 days	45	13.2
Don't know	45	13.2
<b>Normal number of pads during menstruation</b>		
1-2 pads	19	5.6
3-5 pads	260	76.0
More than 5 pads	57	16.7
<b>Severe pain during Menstruation need physician consultation</b>		
Yes	139	40.6
No	156	45.6
Don't know	45	13.2
<b>Irregular menstruation may due to organic disease</b>		
Yes	173	50.6
No	67	19.6
Don't know	99	28.9
<b>The amount of blood menstruation affect health</b>		
Yes	189	55.3
No	89	26.0
Don't know	62	18.1
<b>The blood of menstruation is dirty and should be release from body</b>		
Yes	284	83.0
No	39	11.4
Don't know	17	5.0
<b>Any omission of food or drink during menstruation</b>		
Yes	187	54.7
No	118	34.5
Don't know	34	9.9
<b>Have a warm shower during menstruation</b>		
Yes	235	68.7
No	75	21.9
Don't know	30	8.8
<b>Do exercise during menstruation</b>		
Yes	141	41.2
No	154	45.0
Don't know	41	12.0
<b>Having regular monthly menstruation is a healthy sign</b>		
Yes	300	87.7
No	16	4.7
Don't know	24	7.0
<b>Having extra body hair distribution may relate to menstrual dysfunctions</b>		
Yes	131	38.3
No	80	23.4
Don't know	129	37.7
<b>Thyroid gland dysfunction cause menstruation disorders</b>		
Yes	150	43.9
No	28	8.2
Don't know	161	47.1

In addition, the majority of participants knew the normal duration and frequency of menstruation. Furthermore, the results indicated that the participants in our study were more knowledgeable than those in another previous study conducted in Nigeria, whereby 10% and 38% knew the normal frequency and duration of menstruation respectively,<sup>[26]</sup> and 21.6% of Saudi girls.<sup>[27]</sup>

Singh Amit in India found in a prior study that 43% of their participants perceived their menstruation as a good thing for health, and 77.5% perceived the blood of menstruation as dirty. This is similar to our findings (83%) in the current study. Also, in Amit's study, 84% of the participants avoided certain foods<sup>[28]</sup> whereas 64.7% has the same beliefs in our study.

In Esawi's study about menstrual knowledge and attitude in Egypt; it was found that 50% of participants perceived that they should seek medical advice during severe bleeding and 21% during dysmenorrhea,<sup>[25]</sup> also it's found in another study among Jordanian girls that 37.7% of the participants believed in using analgesia during dysmenorrhea.<sup>[29]</sup> In the current study, the percentage was similar (55.3%).

Previous studies conducted about perception towards menstruation, 42.6% of the participants in an earlier study avoided certain foods and drinks such as milk and spicy foods, in addition, 88.8% took baths during menstruation.<sup>[30]</sup>

In addition, a study conducted about menstrual knowledge and beliefs among Lebanese adolescents show that 35.5% changed their food habit, 22% omitted cold drinks.<sup>[21]</sup> In a Saudi study 50% of the participants had many restrictions regarding food, drink and activities.<sup>[27]</sup> These results are relevant to our current study wherein 64.4% thought that they should omit some food and drinks.

In the Lebanese study, 66.9% of the participants did not take shower during the first three days of menstruation, and 16.5% did not take showers at all during menstruation<sup>[21]</sup> in Saudi study, 71.7% of Saudi girls did not take showers during the first 3 days of menstruation.<sup>[27]</sup> In our study 30.7% did not believe in taking warm showers during menstruation.

Furthermore, in the Saudi study 44% of nursing students do not perform exercise during menstruation. Whereas 70.3% of the participants of the Lebanese study do not practice any activities during menstruation.<sup>[21]</sup> In the current study 57% believed that no exercise should be performed during menstruation.

These results are crucial in showing how everyday life events—such as, daily activity, consuming any kind of food, taking showers, attending college, and participating in social

activities—are interrupted by menstruation so preventing the interruption of everyday life events by menstruation is important for female health and well-being development.<sup>[16]</sup>

In addition to the mentioned results related to the daily life events of the students, in our study despite that the students supposed to know the function of hormones during their first year nursing study, the results showed that 60.4% of the nursing students do not know that having extra body hair distribution may relate to menstrual dysfunctions and 55.3% do not know that thyroid gland dysfunction may cause menstrual disorders. So it should be emphasis on the effect of hormones on menstrual disorders in first year of nursing curriculum as it will help on understanding the normal function of menstruation. Having knowledge about any subject relating to menstruation could help in the early diagnosis of any physical dysfunction.<sup>[22]</sup>

The results in our study also show that nursing student's knowledge and beliefs about menstruation could be alarming for decision makers with regards to reproductive health. However, the results should emphasize female menstrual hygiene and nutritional issues in order to prevent any pelvic infections occurring due to insufficient knowledge of menstruation. It is expected to empower the adolescents to delineate between physiologic and abnormal uterine bleeding.<sup>[24]</sup>

The findings in the previous study showed that after health education, participants in Bangladesh reported a significant improvement in “high knowledge and beliefs” scores also in overall good menstrual practices they also reported a significant improvements in the regularity of their menstrual cycle and fewer complications during menstruation. These results demonstrate the feasibility of implementing a health education program for the adolescents.<sup>[30]</sup>

In the current study, a significant relationship between the knowledge and beliefs (KB) score and marital status is similar to Hail results.<sup>[16]</sup> This appears normal because being married; the girls tend to increase their awareness towards the physiology of the reproductive system to prepare them for future pregnancy. However, unlike previous studies,<sup>[16,30]</sup> this study did not find any relationship between age and KB score which may be because there was no significant age variation. In addition, a significant relationship between the KB score and academic year was highlighted in this study as participants belonged to two educational levels; those who passed a reproductive health course and those who did not.

## 5. CONCLUSION

The results of this study indicate that as a whole, the girls in Eastern Province of Saudi Arabia were unaware of the information relating to menstruation. This included the im-

portance of increasing awareness and giving accurate information using scientific sources, such as schools, colleges or health team members. It is required to discuss the issue related to menstruation early in the physiology of the hormones course to be easy to understand during the course of reproductive health .

Other sources such as media outlets may be used to increase awareness amongst mothers in the community. This may aid in preventing any future physical problems, increasing self-confidence, and improving the quality of life.

## ACKNOWLEDGEMENTS

The authors show gratitude to all the participants, also appreciate Mrs. Sara jabeen and Mrs. Soumia Ponan for their help. A special thanks to Ms. Iman Ahmed, Ms. Iman Mohamed from English department of Ibn Sina college for their support and help in reviewing and editing the article.

## CONFLICTS OF INTEREST DISCLOSURE

The author declares that there is no conflict of interest.

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