

## Study of Menstrual Attitudes and Knowledge among Postmenarcheal Students, in Urmia, North West of Iran

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### Abstract

#### Background

Menstruation cycle is a normal physiological process that is managed differently according to various social and cultural understandings. The aim of this study was to determine the relationship between attitude and knowledge of female students about menstruation cycle in Urmia city, Iran.

#### Methods and materials

In this descriptive cross-sectional study that conducted on 350 female students from second grade of high school girls in the Urmia city who were selected using multistage sampling of urban areas. The data collection instrument was a questionnaire including personal and demographic information, knowledge and attitude questions about menstruation cycle that was completed by researcher. The data were analyzed using SPSS version 17.0 software.

#### Results

The mean age of students and mean age of the first menstruation were  $15.96 \pm 0.86$  and  $12.29 \pm 1.04$  years old, respectively. The results showed that there was a significant relationship between knowledge and attitude, negative feelings, living with menstruation, openness about menstruation and menstrual symptoms ( $P < 0.05$ ); this means that by increasing the knowledge, attitudes have increased in the mentioned fields; but there was no statistically significant relationship between knowledge, and positive feelings, acceptance of menarche and acceptance of the menstruation ( $P > 0.05$ ).

#### Conclusion

The menstrual attitude of girl students can be improved by increasing the menstrual knowledge of them with the help of mothers and teachers.

**Keywords:** Adolescent girls, Attitude, Iran, Menstruation, Knowledge.

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## 1- INTRODUCTION

Based on the global statistics, 16.66% of the world population are adolescents and our country (Iran), like other developing countries has a young population, however, on the basis of census in 2011, 16.34% of the population of our country are in the 10-19 years age group (1). Adolescence is one of the most important and the most precious time of life, because it is the beginning of physical and mental transformation and one of the most critical phenomena of this period is maturity (2). Maturity period is the period of life including first signs of sexual evolution and physical, emotional and intellectual evolution. Secondary sex changes start during this period and the last stage of evolution in the puberty is the start of menstruation (3).

The start of menstruation is one of the most important events in the evolution of women, so that the first menstruation or menarche is considered important event during puberty (3). The menstruation cycle can be with positive feelings towards puberty for girls, the reproductive power and as well as the ability of marriage, however, it is also an event of anxiety for girls as well as a sociocultural event relying on concealment of menstruation concept (4). Although, the menstruation is a natural physiological process of menstruation, but sometimes can be accompanied with the physical and health issues discomfort and might finally can cause physical, emotional and social destructive effects (5). Several studies have reported that the physical problems caused by menstruation can be found on the daily activities, for example in the performance of social and educational activities among adolescent girls (6). Adolescent girls usually have reported negative emotional toward the first menstruation (7). According to the results of the studies the reaction of the adolescent girls about menstruation cycle were different including shame and embarrassment feeling ( 85%), maturity

feeling (66%), and femininity feeling (40%), as well as some of them have expressed natural and pleasant phenomenon (8). However, in the study of Uskul et al., indicated the shame and embarrassment feeling about menstruation by a lot of the girls (9). In addition, according to girls, menstruation is humiliating and embarrassing (10). The prevalence rate of menstrual disorders have reported 9.45% in some studies (11). Various studies showed that increasing of knowledge and readiness in front of the menstrual had positive effect on their experience, however, the girls who had consulted by health educators, teachers or their parents were more willing to receive more positive attitudes (12).

Generally girls are willing to get information about menstruation cycle from a variety of sources including parents, school, friends and media, despite the many sources of information, they often report that have not received enough information (11). The girls' educational practices are often the initial biological information included such as ovarian function and menstrual of reproduction and the lack of practical information is perceptible (10). Also, the attitude of the girls about menstruation are related to their cultural backgrounds (13).

Reviews of reports indicated that American girls express their feelings and experiences with negative attitudinal changes focused on the negative menstrual period about menstruation cycle, while Mexican girls were assessed the changes of menstruation with positive attitudes, so girls directly and indirectly influenced by cultural beliefs in relation to menstruation (largely negative) (14). Due to low information about menstruation cycle, attitude towards menstruation is very bad compared to their expectation of menstruation (11). Factors that may affect how to meet girls with menstruation are the level of knowledge, perceptions, expectations, environment and as well as their different levels of mental

and emotional health, thus strengthening of the teaching is very valuable in the planning of health services (15-17). According to what was expressed, there were very low studies dealing with the subject of our study, thus this study aimed to investigate the relationship between adolescents' perspectives towards the menstruation and its relation with knowledge about menstruation among teen girls student in Urmia city, Iran. Hoping to be an effective step for the understanding of adolescent girls' feelings, desires, expectations and concerns.

## 2- MATERIALS AND METHODS

### 2-1. Study Design and Population

In this descriptive cross-sectional study that conducted on 350 students from second grade of high school girls in the Urmia city, North West of Iran, who were selected using multistage sampling of urban areas. According to the study of Malekshahi et al. and considering 20% attrition, sample size of this study was considered 350 individuals (18). At first the regions of Urmia city (region 1 and 2) was determined, and then the list of high schools was prepared in each region.

### 2-2. Methods

To prevent any error in this research, at first performance questionnaires were distributed and then other questions were distributed. Finally, after data collection, the Kolmogorov Smirnov was done indicating the normal distribution of the data. In order to describe the data, descriptive statistics, and for analytical statistics one-way ANOVA were used using SPSS software version 17. The level of significance was considered less than 0.05.

### 2-3. Measuring tests

The researcher made questionnaire about knowledge of menstruation cycle was included 23 questions related to personal

information and menstruation, 12 questions related to knowledge and 58 questions related to attitude. The questionnaire was constructed with the study of the latest books and articles in the field of research, and then was sent to four of the experts and professors to evaluate the questionnaire, and content validity was evaluated. Finally the reliability of questionnaire was determined 0.96. The score of knowledge in the range of 0-4, 5-8 and 9-12 were considered weak, moderate and good, respectively.

To assess the attitude of adolescents towards menstruation cycle, the adolescent menstrual attitude questionnaire provided by Morse (1993) (19), was used. This questionnaire included 58 questions with 6 subscales, 12 questions about positive feelings with 12-60 points, negative feelings with 17 questions with 17-85 points, 5 questions about menstruation signs with 5-25 points, 6 questions about openness with 6-30 points, 8 questions about acceptance of menstruation with 8-40 points and 10 questions about living with menstruation with 10-50 points that likert scale was used for each question (completely agreement to completely disagreement).

The range of obtained points were 58-290 which higher point shows positive attitude and lower points shows negative attitude among students. This questionnaire is used for the first time in Iran, then in order to evaluate the validity and reliability of questionnaire, its English to Persian translation was done by a master of the English language. The comments of members of the Faculty and four relevant specialist were applied to evaluate the content validity of questionnaire. During a pilot study completed by 120 girl students, the reliability of the attitudes questionnaire was calculated 0.89 using Cronbach's Alpha coefficient that reliability of this questionnaire obtained 0.9 by Morse et al. (19).

## 2-4. Inclusion Criteria

Inclusion criteria included second grade students in high school who experienced menstruation and satisfaction to participate in the study.

## 2-5. Exclusion Criteria

Exclusion criteria included failure to fulfill the questionnaire correctly and completely.

## 2-6. Ethical Considerations

This study was approved by the Ethics Committee of Urmia University of Medical Science (ID code:1394.167), and the objectives of the study were explained to all participants and all of them accepted to participate and were assured of the confidentiality of their individual information as well as the voluntary nature of participating in the study.

## 2-7. Data Analyses

Statistical analysis was carried out using SPSS version 17.0 and descriptive statistics. P-value less than 0.05 was considered significant. Dependent

variables (various field of attitude) were described as mean  $\pm$  standard deviation (SD) and independent variables were expressed as number of individuals and percentages. Chi square, independent t-tests and ANOVA were used to determine the relationship between independent and dependent variables.

## 3-RESULTS

The results showed that the mean age of student, and the age of the first menstruation were  $15.96 \pm 0.82$ , and  $12.29 \pm 1.04$  years old, respectively; the mean of body mass index (BMI), were  $22.38 \pm 3.72$  (normal), respectively. Also, 48.2% of fathers and 53.7% of mothers had high and middle school education. The majority of the fathers' occupation (44.2%) was employee and the majority of the mothers' occupation (73.3%) was housewife. The results of **Table.1** showed that the first resource to get information among students was mother (82.5%). Other resources were included teachers (9.2%), and sister and close families (5.2%), respectively.

**Table-1:** Distribution of characteristics related to knowledge of menstruation in adolescents participating in the study

Variables	Frequency		
	Number	Percent	
The History of Received Information about Menstruation	Yes	328	98.8
	No	4	1.2
Resource of Information Reception about Menstruation	Mother	269	82.5
	Sister and Close Family	17	5.2
	Teachers and Health Instructors	30	9.2
	Book, Magazine and Media	5	5.1
	Friends	5	5.1
Preferred Resource to Get Information about Menstruation	Mother	239	72.4
	Sister and Close Family	22	6.7
	Teachers and Health Instructors	35	10.6
	Book, Magazine and Media	16	4.8
	Friends	18	5.5
Consent to Learn before Menarche	Yes	263	79.7
	No	67	20.3
Suggested Subjects of Adolescents about Maturity Education	Knowledge about Reproductive System	53	20.2
	Behavioral Changes	38	14.4
	Mental and Physical Changes	60	22.8
	Menstrual Health	78	29.7
	Strengthening of the Relationship with Others	34	10.3

As results showed in **Table.2**, the majority of adolescent girls (55.8%) had menstrual cycles with a duration of less than or equal to 28 days that last 4-7 days (in 85.4% of adolescent girls), and 70.6% of them had moderate bleeding during menstruation and lower abdomen and back pain were the most common menstrual problems (87.57%). 43 % of girls reported severe menstrual pain. In the field of negative experiences, the first menstruation for 25.5% of the students was a phenomenon combined with anxiety, for 18.78% was along with pain, 14.24% had concerns about abnormality of menstruation and 10%

of them were crying along with the first menstruation. The majority of the students (87.6%), believed that menstrual pain affects directly on their education in a way that 44.8% of them complained of boredom in the classroom. Refrain from attending in parties and meetings were one of the social restrictions that caused by menstruation in 32.7% of girl students. As results showed that 98.8% of girls used the sanitary napkin as the tool for blood absorbing; the frequency of switching sanitary napkin among 51.2% of them was reported 3 times. 75.5% of girls declared that their underwear were dried under the Sun.

**Table-2:** Distribution of charestristics related to the properties and problems with menstruation in adolescents participating in the study

Problems And Properties of Menstruation		Frequency	
		Number	Percent
Mean Days of Menstruation	1-3	29	8.8
	4-7	282	85.4
	>7	19	5.8
Menstruation Period	≤ 28	184	55.8
	≥ 29	146	44.2
Amount of Hemorrhage	High	45	13.6
	Moderate	233	70.6
	Low	52	15.8
Menstruation Regularity	Yes	308	93.3
	No	22	6.7
Menstrual Pain	Yes	308	93.3
	No	22	6.7
Severity of Pain	Without Pain	22	6.6
	Slight	26	7.9
	Tolerable	140	42.4
	Severe	142	43
First Feeling Experienced in Menstruation	Fear	45	13.6
	Concern about Abnormality	47	14.2
	Anxiety	83	25.1
	Ashamed and Embarrassment feelings	34	10.3
	Sin feeling	16	4.8
	Independence	83	25.1
	Seclusion	2	0.6
	Crying	33	10.0
	Pain	62	18.7
Natural feelings	71	21.5	
The Effect of Menstrual Pain in the Education	Yes	289	87.6
	No	41	12.4
The Effective Reasons Affecting Education	Getting Bored In Class	130	44.8
	Absence of student in school's first day	71	24.5
	Absence of exam	50	17.2
	Not doing home works	39	13.4

Social Limitation During Menstruation	Not going to party	108	32.7
	Seclusion	75	22.7
	Getting bored	85	25.08
	Anger	62	18.8
Problems During Menstruation	More hemorrhage	63	19.09
	Nausea And Vomiting	40	12.1
	Abdominal And Back Pain	289	87.5
	Anorexia	41	12.4
	Low hemorrhage	14	4.2
	Constipation And Diarrhea	69	20.9
	Nose Freckle And Irregular Periods	38	11.5
	Acne	67	20.3
	Pain Of Breast	38	11.5
Headache	27	8.1	

As results showed in **Table.3**, the mean points of positive feelings in adolescents was  $13.02 \pm 5.32$  (in the range of 12-60 points) which higher points indicates more positive feelings toward menstruation, the mean points of negative feelings in adolescents was  $44.35 \pm 9.89$  (in the range of 17-85 points) which higher points indicates more negative feelings toward menstruation in adolescent girls. The mean area of symptoms associated with menstruation was estimated  $31.74 \pm 3.09$  (in the range of 5-29 points) which higher points indicates less symptoms of menstruation in adolescent girls. The mean area of openness associated with menstruation was estimated  $51.36 \pm 3.76$  (in the range of 8-40 points) which higher points indicates more

openness of menstruation in adolescent girls. The mean area of acceptance of menstruation associated with menstruation was estimated  $12.53 \pm 4.4$  (in the range of 8-40 points) which higher points indicates more acceptance of menstruation in adolescent girls. The mean area of living with menstruation associated with menstruation was estimated  $82.61 \pm 4.33$  (in the range of 10-50 points) which higher points indicates ease life along with menstruation in adolescent girls. As well as mean of total attitude associated with menstruation was estimated  $451.72 \pm 17.54$  (in the range of 8-40 points) which higher points indicates positive attitude of menstruation in adolescent girls.

**Table-3:** Mean points of attitude in girl adolescents about menstruation cycle

Various Field Of Attitude	Mean $\pm$ Standard deviation	
	Positive Feelings	31.1
Negative Feelings	44.53	9.89
Menstrual Symptom	13.47	3.09
Openness about Menstruation	15.63	3.76
Acceptance of Menarche	21.35	4.4
Living with Menstruation	28.16	4.33
Total Score of Attitude	154.27	17.54

As results showed in **Table.4**, the mean of positive feelings towards menstruation were  $30.27 \pm 5.1$  in the students with low level of knowledge,  $31.01 \pm 5.59$  in the

students with medium level of knowledge and  $32.93 \pm 3.97$  in the students with high level of knowledge. These findings showed that while knowledge increases, the attitude

towards positive feelings will increase, but this was not statistically significant ( $P=0.29$ ). The mean of negative feelings towards menstruation were  $39.54\pm 7.91$  in the students with low level of knowledge,  $40.83\pm 7.48$  in the students with medium level of knowledge and  $50.54\pm 16.04$  in the students with high level of knowledge. These findings showed that while knowledge increases, the attitude towards negative feelings will increase, and this was statistically significant ( $P<0.001$ ).

The mean of symptoms of menstruation were  $21.54\pm 3.91$  in the students with low level of knowledge,  $31.64\pm 2.87$  in the students with medium level of knowledge and  $51.52\pm 3.51$  in the students with high level of knowledge. These findings showed that increasing of the knowledge was Aligned with symptoms of menstruation, and this was statistically significant ( $P<0.001$ ). The mean of openness towards menstruation were  $51.93\pm 3.83$  in the students with low level of knowledge,  $61.22\pm 3.72$  in the students with medium level of knowledge and  $31.02\pm 2.76$  in the

students with high level of knowledge. These findings showed that increasing of the knowledge was Aligned with Openness, and this was statistically significant ( $P<0.001$ ). The mean of acceptance of menstruation were  $20.53\pm 3.09$  in the students with low level of knowledge,  $21.76\pm 4.33$  in the students with medium level of knowledge and  $20.84\pm 6.12$  in the students with high level of knowledge. These observed differences were not statistically significant ( $P<0.09$ ).

The mean of living with menstruation were  $72.05\pm 3.36$  in the students with low level of knowledge,  $82.22\pm 4.47$  in the students with medium level of knowledge and  $82.59\pm 4.99$  in the students with high level of knowledge. These findings showed that increasing of the knowledge was Aligned with the attitude in this part, and this was statistically significant ( $P<0.001$ ). Finally, the findings of this study indicated that there was a significant relationship between the level of knowledge of adolescent girls and total point of attitudes toward menstruation ( $P<0.001$ ).

**Table-4:** The relationship between knowledge toward menstrual period in different fields

Various Field Of Attitude	Knowledge Level			Score of Attitude (Mean $\pm$ SD)	P-value
	Low	Medium	High		
Positive Feelings	$30.27\pm 5.1$	$31.01\pm 5.59$	$32.93\pm 3.97$	$31.1\pm 5.32$	0.29
Negative Feelings	$39.54\pm 7.91$	$40.83\pm 7.48$	$50.54\pm 16.04$	$44.53\pm 9.89$	0.00
Menstruation Symptoms	$12.45\pm 3.9$	$13.46\pm 2.87$	$15.25\pm 3.51$	$13.47\pm 3.09$	0.00
Openness	$15.39\pm 3.83$	$16.22\pm 3.72$	$13.20\pm 2.76$	$15.63\pm 3.76$	0.00
Acceptance of Menstruation	$20.53\pm 3.09$	$21.76\pm 4.33$	$20.48\pm 6.12$	$21.35\pm 4.4$	0.90
Living with Menstruation	$27.50\pm 3.36$	$28.22\pm 4.47$	$28.95\pm 4.99$	$28.16\pm 4.33$	0.00
Total Score of Attitude	$145.69\pm 15.79$	$151.53\pm 15.36$	$161.72\pm 24.76$	$154.27\pm 17.54$	0.00

#### 4-DISCUSSION

The mean age of menarche in this study was consistent with the study of Malekshahi et al. which was obtained 12.8

years (20). Menstrual pain in the lower abdomen and back were the most common problem (87.57%) among adolescents which is partially consistent with the study of Chen et al., that reported the most

common symptoms including crampy pain, fatigue, back pain, abdominal swelling and breast tenderness (21). In the study of Chang et al.(22), dysmenorrhea, acne and fatigue as well as in the study of Lee et al. (3), abdominal cramps, acne and breast tenderness were the most common symptoms which are consistent with our results that showed 93.3% prevalence of dysmenorrhea. According to the results of other studies, menstruation can prevent usual chores and results in absence from school (24-26). Although 43 % of girls reported severe menstrual pain severe, but 43.9% of them did not take medicine to relieve menstrual pain, so that in the study of Kaur et al. in the United States, 92% of girls consumed oral iron supplementation during menstruation (27). But in our study 82.1% of girls refused to use iron supplementation considering that 70% of them had moderate hemorrhage.

The majority of girls who participated in the research in their first menstruation had anxiety, fear, discomfort and fear of abnormality that are consistent with other studies (24-26). The majority of first menstruation accompanied with anxiety, that this issue can be caused by a lack of adequate information or inappropriate justification, because based on the results of this study, there were only 13.3% of the adolescents with the high level of knowledge. In the present study, the majority of parents and especially mothers had lower literacy levels and considering their low level of education in mothers, it is found that unfortunately most of the girls learn from their mothers who have low literacy. As well as based on the findings of this study, the girls prefer teachers and health trainers after mothers to get information about menstruation cycle; while in the study of Kaunitz et al., in the United States, only 2 % of students were received their information about menstruation through health trainers (28).

The preferred source of information among girls in the field of puberty health was mother. The results of this study in the field of menstruation symptoms and the openness were very similar to the study of Rembeck et al. (15), which conducted in Swed and investigated the attitudes, thoughts and feelings towards the first menstruation. The mean point of negative feelings towards the attitude of menstruation and living with menstruation in Iranian girls were higher than Sweden girls with a slight difference, which indicates that the negative feelings towards menstruation in girls participated in this research is more than Swedish girls, but Iranian girls easily live with menstruation. In comparison to the mean point of positive feelings and live with menstruation, the difference is higher compared to Sweden girls. Also, in comparison to the total point of the attitude, our results are consistent with the study of Rembeck et al.(15).

The findings of this study indicated that there was a significant relationship between levels of knowledge of adolescent girls and positive attitude to menstruation cycle. The findings of this study is consistent with the study of Bahadoran et al. (29), that showed the increasing of the knowledge in the puberty health and menstruation through discussion can lead to modifying the attitude of students in this field. As well as the findings of the study of Al Omari et al. (30), indicated the relationship between increasing of knowledge and improving the attitude of the students because whatever girls have more knowledge about reproductive system, and its functions, positive feelings of them will increase. So, it seems that increasing of knowledge can be used in order to improve the attitude of menstruation in girls. Health education about the menstrual period should begin before the first menstrual period for physical and mental preparing of girls (31).

The obtained data showed that in the field of knowledge, the majority of adolescent



girls (64.2%), were in medium level, and 22% of them were deprived from information about menstruation that these results are consistent with the study of Malekshahi et al.(18). In our culture, speaking of the genital physiology, menstrual period and fertility are obscurity and silent, so that some families have no information about menstruation (32). Some studies have shown that in American and Icelandic students and Indian women, menstruation is as a natural and predictable phenomenon, whilst the Chinese women consider it as a dirty phenomenon (22). Educational policians believe that in developing countries, the menstrual period and relevant problems, which can be originated by negative attitude towards menstruation, can damage the education and training. In deed, attitudes and beliefs are a tool for shaping the health behaviors and may lead to incorrect behavior. So the knowledge, attitude and performances of women in the field of menstruation are essential to promote health programs (33). It is clear that adolescents are almost one third of population in communités, but there are a little information about them, and they rarely consider as an isolated group with special needs, apart from children and adults (34).

#### 4-1. Limitations of the study

The small sample size of include studies are potential limitation of this study. There is still need to further studies to access additional information about the menstruation issue. Another limitations of the current study, were low of the same study in this field and low of the schools surveyed in Urmia.

#### 5-CONCLUSION

According to the results of this study that indicated the significance relationship between attitudes and knowledge, and also the low level of knowledge and low mean point of attitude in girl students and considering that the source of the obtained

source of information were mothers and teachers, training of students in the educational environment by teachers beside of mothers are essential. It is necessary to increase the knowledge of adolescents in addition to mothers' education and other training facilities, and if possible health services-consulting for adolescents should be used in compliance with specific cultural sensitivities.

It should be noted that knowledge should not be restricted to the mechanisms of puberty, menstruation and natural behavior, but also should be accompanied with deep understanding of their attitude and physical changes and its relation to sexual issues, reproductive health, contraceptive methods and marriage health. Thereby massive and notable investment should be considered. Meanwhile it is recommended that experimental studies be done with rich educational content and its effect on the attitude of adolescent girls.

#### 6-AUTHORS CONTRIBUTIONS

- Study design: SB, SR, RV.
- Data Collection and Analysis: SB, SR.
- Manuscript Writing: RV, SR.
- Critical Revision: RV, SB.

#### 7- CONFLICT OF INTEREST: None.

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