

Full Length Research Paper

Knowledge of women attending a primary health care (PHC) center concerning hygiene during their menstrual period

Atiya K Muhammad* and Cheeman Salih Jaff

College of Nursing, Sulimani University, Sulimani, Metran street, Iraq.

Received 18 June, 2015; Accepted 28 July, 2015

One critical area is menstrual hygiene and management, which is absent from much of the discourse, policy and practice in keeping a woman's private part clean. The objectives of this study were to identify women's information about menstrual hygiene management, and to explore the association between some socio-demographic and obstetric characteristics with knowledge. A descriptive study on the knowledge of women attending primary health care (PHC) concerning hygiene during the menstrual period was carried out in Sulaimani City from 20 July, 2012 to 30 June, 2013. Data were collected retrospectively by an interview with clients visiting PHC centers. Using non-probability sampling, a purposive sample of 604 females of reproductive age, were selected for the purpose of the study. The data were collected through an anonymous questionnaire, which comprised three parts: demographic characteristics, menstrual history and knowledge regarding the menstrual period. Data were analyzed through statistical package for the social sciences (SPSS) (18.0) version of packet program. Frequency, percentage, standard deviation and chi-square were used in the statistical assessment, and $p < 0.05$ was accepted as the statistical significance. Majority (56%) of the participants had adequate knowledge regarding menstruation hygiene, and the study also revealed that 81% of these samples use sanitary pad, 2.6% use new cloth piece and 16.4% use pieces of old cloth. The reason for not using sanitary pad for 42.6% of the study group were because it was not available for them, but 34.8% of the sample do not know why they do not use sanitary pad. 19.1% returned that they found it too difficult to dispose because they thought that disposal of pad is taboo in the Islam religion. A highly significant difference appears between women's knowledge regarding hygiene and the education level, occupation, marital status, residency and type of family, while no significant difference was found in the monthly income of the sample. Researchers conclude that there is a general deficiency in knowledge, especially in a bath and changing of pads. Some of the women use old cloth because pad is not easily available and/or difficult to dispose. The levels of knowledge regarding hygiene during menstruation increase with increase in women's age, the number of children, education, paid employment, and extended family. Nearly all women have a positive attitude to learning knowledge regarding menstruation period.

Key words: Knowledge, hygiene, menstrual period.

INTRODUCTION

Menstruation is a normal physiological process, which each and every normal woman faces throughout her

reproductive age period. Menstruation represents the attaining of womanhood. It events the physiological

process, but regarded as unclean.

Over the decades, Kurdish women have been taught that having periods are shameful. No mother or elder woman teaches about menstrual hygiene to their daughters or younger ones. No family perceives that it is a normal physiological phenomena. So, young adolescent girls attain their menarche without any mental preparation or understanding about the menstruation and menstrual hygiene. Many girls attain their menarche during the school hours and return back to their houses without help.

Being able to behave hygienically, are basic requirements essential for health and dignity for all.

Hygiene promotion

Women spend around six to seven years of their lives menstruating. A key priority for women and girls is to have the necessary knowledge, facilities and cultural environment to manage menstruation hygienically, and with dignity (Das and Sarkar, 2008)

In order for women and girls to live healthy, productive and dignified lives, it is essential that they are able to manage menstrual bleeding effectively (Tharpe, 2013). This requires access to appropriate water, sanitation and hygiene services, including clean water for washing clothes used to absorb menstrual blood and having a place to dry them, having somewhere private to change clothes or disposable sanitary pads, facilities to dispose used cloths and pads, and access to information to understand the menstrual cycle and how to manage menstruation hygienically (WHO, 2009).

As well as addressing practical needs like this, it is also necessary to promote better awareness amongst women and men to overcome the embarrassment, cultural practices and taboos around menstruation that impact negatively on the women and girls' lives, and reinforce gender inequities and exclusion (UNICEF and WHO, 2008).

METHODOLOGY

A descriptive and retrospective study on the knowledge of women attending primary health care (PHC) concerning hygiene during menstrual period was carried out in Sulaimani City from 20 July, 2012 to 30 June, 2013. Prior to the data collection, an official permission was granted from General Directorate of Health for all HC centers to facilitate the data collection, and data were collected retrospectively by interview with clients visiting PHC centers. Using non-probability sampling, a purposive sample of 604 females in reproductive age, were selected for the purpose of the study. The data collected through the use of a specially constructed anonymous questionnaire, which comprises three parts.

Part I: Demographic characteristics

The demographic characteristics for the samples include women's age, level of education, occupation, marital status, monthly income, residency, number of children, type of family, working hours, number of toilets in the home and at work.

Part II: Menstrual history

The second part of the questionnaire included information regarding menstrual history of the women in the form: age of menarche, days of bleeding, having dysmenorrhea, fell during the monthly cycle, shame felt, having information about menstruation prior menarche, source of information, absorbent used during menstruation period, reasons for not using a disposable sanitary pad, taken a bath, change pad per day and how to treat pads.

Part III: Knowledge regarding menstrual period

This part is concerned with 16 items related to the women's knowledge concerning hygiene during menstrual period hygiene, and regarding complications they encounter. The investigator held a direct interview to obtain data from women, and also used constructed questionnaire format that was answered by the participants.

The validity of the questionnaire was determined through a panel of 10 experts; the reliability of the questionnaire will be determined through a pilot study. The obtained data of the registered cases were entered into the computer and analyzed through the use of the statistical package for social sciences (SPSS 18). The data analyzed was performed through descriptive statistical approach, such as frequency, percentage, standard deviation and Chi square.

The significant level of statistical procedures was determined at $p < 0.05$. This study was approved by the ethical committee of the Nursing School, University of Sulaimani, Iraq.

RESULTS

Part I: Distribution of samples according to their demographic data

Table 1 reveals that majority (38.7%) of the sample ages were in the age group of 20 to 29 years, mean age was 30.9 years. Also, the table shows the distribution of the samples according to their educational level. It revealed that 23.8% of the samples were illiterate, and majority (57.3%) of them were housewives or out of work as well as the 20.5% of samples were single and 79.5% of the samples were married. The table also indicates that majority of the samples (79.5%) was perceived to barely have sufficient monthly income so the highest percentage (85.4%) were from urban areas.

The table present that 44.6% of the samples were having 1 to 2 children. Finally, the study shows that majority of the samples (75.8%) were from nuclear family. Fortunately, majority (93.7%) of the samples had privacy

*Corresponding author. E-mail. atiyakareem@yahoo.com.

Author(s) agree that this article remain permanently open access under the terms of the [Creative Commons Attribution License 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

Table 1. Demographic characteristics of study population.

Demographic characteristic	Frequency	Percentage
Age (years)		
Less than 20	66	10.9
20-29	234	38.7
30-39	174	28.8
40-49	112	18.5
50-59	18	3
Total	604	100
Educational level		
Illiterate	144	23.8
Read and write	132	21.9
Basic school graduate	122	20.2
Preparatory school graduate	60	9.9
High institute graduate	82	13.6
College and post graduate	64	10.6
Total	604	100
Occupation		
Governmental	150	24.8
Self employed	36	6
Retired	4	0.7
Housewife	364	57.3
Student	68	11.3
Total	604	100
Marital status		
Single	124	20.5
Married	480	79.5
Total	604	100
Monthly income		
Sufficient	170	28.1
Barely sufficient	316	52.3
Insufficient	118	19.5
Total	604	100
Residency		
Urban	516	85.4
Rural	88	14.6
Total	604	100
Number of children*		
No child	80	16.6
1-2 child	214	44.6
3-4 children	120	25
5-6 children	42	8.8
7 or more children	24	5
Total	480	100
Type of family*		
Nuclear	364	75.8

Table 1. Cont'd.

Extended	116	24.2
Total	480	100
Having toilet at home with total privacy for changing pad		
Yes	566	93.7
No	38	6.3
Total	604	100
Having a toilet at work with total privacy for changing pad		
Yes	120	47.2
No	134	52.8
Total	254	100

*For married; **For worker samples.

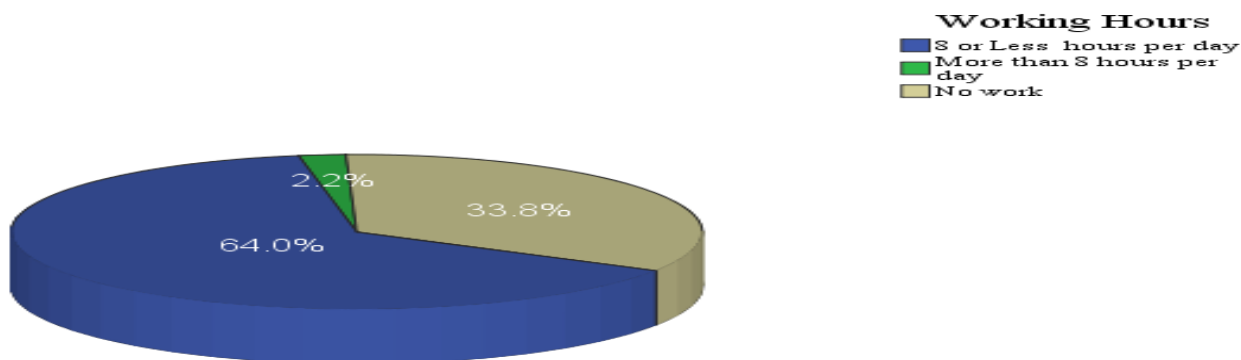


Figure 1. Working hours of samples who works.

in their toilet at home, while 52.8% of them who were working have no complete privacy in the toilet at their work place.

Figure 1 shows that majority (60%) of those working were working less than 8 h. Table 2 revealed that the highest percentage (56.6%) of their age at menarche were ≥ 13 year, 33.8% of the study population bled for 5 to 6 days during their period, while the highest percent (71.9%) were having dysmenorrhea at every period. On the other hand, 92.1% were anxious and depressed during their period; also, 71.9% of them ashamed from the exposition of their period. Most of the study groups (76.2%) had no information regarding menstruation prior to menarche (43%) of whom took information were from their mothers.

The study also revealed that 81% of the samples used sanitary pad, 2.6% were using new cloth piece, and 16.4% were using pieces of old cloth. The reason for not using sanitary pad for 42.6% of the study group were because it was not easily available for them, both 34.8% of the samples do not know why they do not use a sanitary pad also, 19.1% returned it to difficulty of

disposal. 42.2% of the samples do not bathe during their period, 8.3% of them change the pad once daily, and 13.5% of them were changed according to the need.

Also, Table 2 depicted that, 81% of the sample were using sanitary pad, 42.6% of them who were not using sanitary pad were because it was not easily available, 42.2% of them do not bathe during their period, 46.7% of them were changing their pad once in 6 h and 81.1% of them treat their pad by throwing it into garbage.

This study demonstrates (Table 3) that the proportion of the samples that do know that genitalia area must be clean during menstruation period represent 67.7% of the total sample, while 61.5% of the samples did not know that perineal area must be cleaned from anterior to posterior. Table 3 also illustrates that 69.5% of the samples know the necessity to use a sanitary pad, and 72.8 of them know the necessity to frequently change the sanitary pad. 65.9% of them did not know that the underwear and clothes used during menstruation must be dried outside house toilet with direct sunlight, while 75.8% of them know that using soiled hand and nails lead to complication, and also 77.5% of them know that using

Table 2. Distribution of samples according to their menstruation history.

Demographic	Frequency	Percentage
Age at menarche (years)		
More than 11	48	7.9
11-12	160	26.5
13 or more	396	65.6
Total	604	100
Days of bleed		
2-3	40	6.6
4-5	136	22.5
5-6	204	33.8
7 or more	162	26.8
Irregular	62	10.3
Total	604	100
Having dysmenorrhea		
At every period	434	71.9
Very rarely	118	19.5
Not at all	52	8.6
Total	604	100
Feel during menstruation period		
Anxious and depressed	556	92.1
Care for	48	7.9
Total	604	100
Feel ashamed during menstruation period		
Yes	434	71.9
No	170	28.1
Total	604	100
Gave information prior menarche		
Yes	144	23.8
No	460	76.2
Total	602	100
If the answer is the source of information		
Mother	62	43
Sister	50	34.7
Other relatives	26	18.1
Teacher	4	2.8
Friends	2	1.4
Total	144	100
Absorbent used during the menstruation period		
Sanitary pad	489	81
New cloth piece	16	2.6
Pieces of old cloth	99	16.4
Total	604	100
Reason for not using sanitary pad*		
Not knowing about it	4	3.5
Don't know	40	34.8
Difficult of disposal	22	19.1
Not easy available	49	42.6
Total	115	100
Taking bath		
Every day	70	11.6
Alternative day	91	15
Once in 3 days	94	15.6
Once during period	94	15.6

Table 2. Cont'd.

Don't bathe	255	42.2
Total	604	100
Change pads per day		
As needed	82	13.5
4 times daily	282	46.7
3 times daily	184	30.5
2 times daily	6	1
1 time daily	50	8.3
Total	604	100
Treat pads		
Washing and reusing	115	19.1
Throwing into garbage	484	80.1
Other	5	0.8
Total	604	100

*Samples who not using sanitary pad.

Table 3. Distribution of samples according to their knowledge concerning menstrual hygiene.

Knowledge	Frequency	Percentage
Cleaning of genital area during menstruation		
Know	409	67.7
Don't know	195	32.3
Total	604	100
The cleaning perineal area must be from anterior to posterior		
Know	232	38.4
Don't know	372	61.6
Total	604	100
The necessity to use sanitary pad		
Know	420	69.5
Don't know	184	30.5
Total	604	100
Necessity for frequent change of Sanitary Pad		
Know	440	72.8
Don't know	164	27.2
Total	604	100
Drying underwears and clothes outside house toilet with direct sunlight		
Know	206	34.1
Don't know	398	65.9
Total	604	100
Poor hygiene during menstruation lead to complication for women		
Know	486	80.5
Don't know	118	19.5
Total	604	100
Using soiled hand and nail lead to complication		
Know	458	75.8
Don't know	146	24.2
Total	604	100
Using soiled cloth during menstruation period leads to complication		
Know	468	77.5
Don't know	136	22.5
Total	604	100

Table 3. Cont'd.

Using cotton underwear		
Know	376	62.3
Don't know	228	37.7
Total	604	100
Infection is a complication of poor hygiene		
Know	440	72.8
Don't know	164	27.2
Total	604	100
Poor Hygiene during menstruation lead to Infertility for women:		
Know	226	37.4
Don't know	378	62.6
Total	604	100
Poor Hygiene during menstruation lead to foul smelling for women:		
Know	510	84.4
Don't know	94	15.6
Total	604	100
Is correct to take a bath during the menstruation period		
Know	308	51
Don't know	296	49
Total	604	100

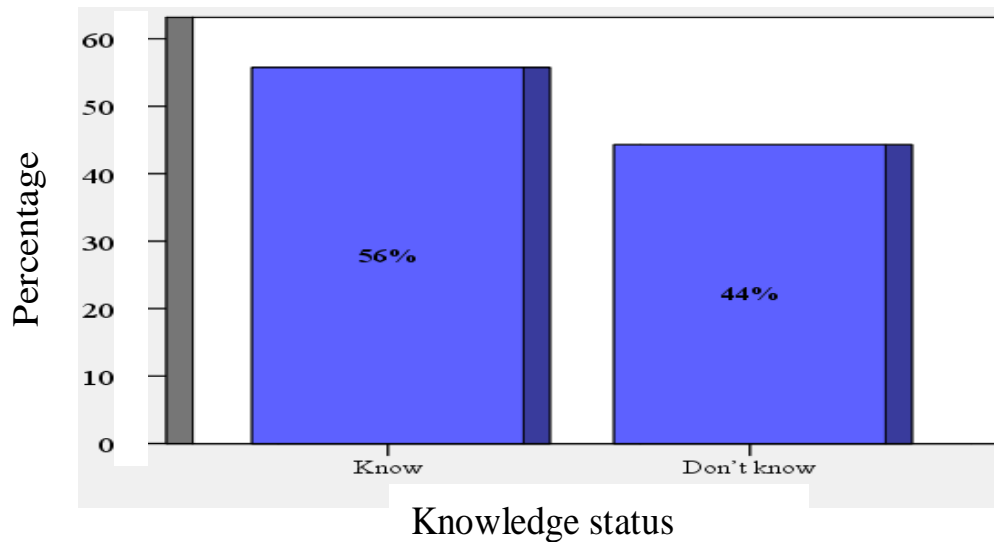


Figure 2. Knowledge of sample regarding menstruation hygiene.

a soiled cloth during menstruation period lead to complication, 62.3% of them know that cotton underwear must be used.

The study discovered that 72.8% of the sample know that infection is a complication of poor hygiene; also, 62.6% of them did not know that poor hygiene during menstruation may leads to infertility for women but 84.4% of them know that poor hygiene during menstruation leads to foul smell for women, while 51% of them know

that it is good to take a bath during menstruation period.

Figure 2 demonstrates that the proportion of samples that do not know anything regarding menstruation hygiene represent 44% of the total sample.

Table 4 indicated a highly significant association between women's knowledge regarding hygiene and the education level, occupation, marital status, residency and type of family, while there was no significant difference in the monthly income of the sample.

Table 4. The association between samples knowledge regarding hygiene during menstruation and their sociodemographic data.

Studied variable	Knowledge status		P values
	Know, N (%)	Do not know, N (%)	
Educational level			
Illiterate	78 (54.2)	66 (45.8)	Less than 0.001 (Highly significant)
Read and write	92 (69.7)	40 (30.3)	
Basic school graduate	66 (54.1)	56 (45.9)	
Preparatory school graduate	28 (46.7)	32 (53.3)	
High institute graduate	32 (39.2)	50 (60.8)	
College and post graduate	40 (62.5)	24 (37.5)	
Total	336 (55.63)	268 (44.37)	
Occupation			
Governmental	86 (57.4)	64 (42.6)	Less than 0.001 (Highly significant)
Self employed	22 (61.1)	14 (38.9)	
Retired	0 (0)	4 (100.0)	
Housewife	204 (59.0)	142 (41.0)	
Student	24 (35.3)	44 (64.7)	
Total	336 (55.63)	268 (44.37)	
Marital status			
Single	50 (40.3)	74 (59.7)	Less than 0.001 (Highly significant)
Married	286 (59.7)	194 (40.3)	
Total	336 (55.63)	268 (44.37)	
Monthly income			
Sufficient	90 (53.3)	80 (47)	0.426
Barely sufficient	184 (58.2)	132 (41.8)	
Insufficient	62 (52.5)	56 (47.5)	
Total	336 (55.63)	268 (44.37)	
Residency			
Urban	296 (57.4)	220 (42.6)	0.001 (Highly significant)
Rural	34 (38.6)	54 (61.4)	
Total	330 (54.6)	274 (45.4)	
Type of family			
Nuclear	231 (63.5)	133 (36.5)	0.009 (Highly significant)
Extended	57 (49.1)	59 (50.9)	
Total	288 (60)	192 (40.1)	

DISCUSSION

This study aimed to assess the knowledge level of women regarding hygiene during their menstrual period. Table 1 revealed that majority of the sample's ages were in the age group of 20 to 29 years. This shows that nearly quarter of them were illiterate, and majority of them were housewives or out of work. Amine (2008), in a case control study in Erbil, results of the study show the impact of education and knowledge in prevention of diseases which revealed that illiteracy in the sample study was high. Also, housewives had more time visiting PHC centers with majority of the women being married; this indicate that married women who visit PHC center do that because of their children.

The study, also indicate that majority of them had sufficient monthly income, so their income was limited to overcome their costly life expenses, and providing source

of information on the right health care habit and diseases prevention. Also, all care in the study PHC center is free of charge which encourage low income families to visit it more than families with good monthly income. The study was conducted in Suleimani center, so the highest percentage were from its center because of the presence of PHC centers in rural and suburban areas. The tables indicate that 44.6% of the samples were having 1 to 2 children. The load and burden of life within the last decades increased the awareness of families, presence of family planning methods and limit the number of children in the families.

Finally, this study shows that high majority of the study samples were from nuclear family due to cultural and social issues as well as the technology. Development also affects the family relationship. Fortunately, high majority (93.7%) of the study sample had privacy in toilet at home, while those working were not having privacy to

use the toilet in their work place. So, the administration of both governmental and non-governmental organisation have neglected menstruation hygiene issues for female employees; but fortunately, the majority of those working were less than 8 h in Kurdistan why in some region, employees work for 4 to 5 h daily which may decrease the needs of feminine hygiene practices.

Table 2 revealed that the highest percentage of their age at menarche were ≥ 13 year, this finding is supported by the study of Jaff (2010) and Amin (2009), they detected that the age at menarche was ≥ 13 years. In contrast, Abdulla (2009) detected that the age at menarche was ≤ 13 years in Baghdad, 33.8% of the study population had bled for 5 to 6 days during their period, while majority of them were having dysmenorrhea at every period. On the other hand, 92.1% were anxious and depressed during their period. This is because of the changing hormone levels and pain as well as the distress of being wet and unclean, also, majority of them nearly three quarters were shy from the exposition of their period.

Most of the study groups (76.2%) had no information regarding menstruation prior to menarche, 43% of whom

had information from their mothers. It is important to mention that mother is the ideal person giving advice to her daughters because of sociocultural beliefs (Dasgupta and Sarka, 2008). According to the culture of the society, especially in previous decades, the speaking and debate about menstruation was taboo, and also not included in the female's curriculum. Educational program regarding menstruation is distributed from mother or between sisters or relatives secretly without scientific planning and knowledge after menarche. More than half of them do not know much about menstruation nor personal hygiene during periods. Therefore, the present study indicates that there is an urgent need for women's education on physical, psychological and sexual aspect of menstruation.

The study also revealed that majority were taught on how to use a sanitary pad, but till now there were women (16.4%) who still use pieces of old cloth. The reasons for not using sanitary pad were because of lack of availability, not knowing how to use sanitary pad, difficulty on how to dispose it because, some of them thought that disposal of pad is a taboo in the religion of Islam. In reality, this is not true in the religion of Islam (Adhikari et al., 2007).

In another hand, some women do not bathe, which reflects thought that the period's regulation and pain affected their diet and bathe, so this affected the change of pads. No one had information about the ideal time to change pads, some of them change it only once daily or they change it according to heaviness of menstruation blood. Some may not change for some days especially those having little amount of bleed or/and those who economically have low level income. Scientifically, the pads need change approximately 2 to 3 h (Singh et al.,

2006; Adinma and Adinma, 2008). The study demonstrates in Table 3 concerning cleaning the genitalia area, majority of the study participant know that genitalia area must be cleaned during menstruation period, but they do not know the right way. In this question, 61.5%, of the samples did not know that perineal area must be cleaned from anterior to posterior. The table also illustrates that 69.5% of sample know of the necessity of using sanitary pads, and 72.8% of them know the necessity to frequently changing the sanitary pad. Unfortunately, 65.9% of them did not know that the under wear and clothes used during menstruation must be dried outside the house toilet in direct sunlight which is very important in hygiene, while 80.5% of them know that poor hygiene during menstruation lead to complication for women, so they have information about facts of hygiene, and 75.8% of them know that using soiled hands and nails can lead to complications and also, 77.5% of them know that using soiled cloth during menstruation period lead to complication. Fortunately, 80.8% of them know the necessity to use washing material for cleaning during menstruation, 62.3% of them know that cotton underwear must be used.

In this study, it was discovered that 72.8% of the samples know that infection is a complication of poor hygiene and also, 62.6% of them did not know that poor hygiene during menstruation may lead to infertility for women. 84.4% of them know that poor hygiene during menstruation can lead to foul smelling for women, while 51% of them know that it is good to bathe during menstruation period.

The study demonstrates a general deficiency in knowledge, especially bathing, changing pads, cleaning and drying of the genital area and pads. Also indicated, is a highly significant relationship between women's knowledge regarding hygiene and their education level, occupation, marital status, residency and type of family, while no significant difference in the monthly income of sample to discover what the women need. The levels of knowledge regarding hygiene during menstruation increase with increase in women's age, number of children, education level, occupation, marital status and extended family.

CONCLUSION

The results of this study highlighted a general deficiency in knowledge, especially bathing and changing pads. Some of the women use old cloth because the pad is not easily available and/or difficulty in disposing it. The levels of knowledge regarding hygiene during menstruation increase with increase in women's age, number of children, education, paid employment, and extended family. Nearly all women have a positive attitude to learning new things regarding menstruation period, also their income was limited to overcome their costly life

expenses.

RECOMMENDATIONS

Based on the earlier stated facts, it can be recommended that:

1. An educational program should be developed and implemented for women in order to increase their knowledge and correct old attitudes and support positive attitudes about menstruation hygiene.
2. Publication of menstruation hygiene and education program should be propagated in mass media as a primary prevention of women's health.
3. Necessary attention must be paid to this issue, especially at the primary health care centers and schools.
4. Collaboration with the education ministry, university, ministry of health is advisable to spread the menstruation hygiene's knowledge and practice among the younger females.
5. The price of sanitary pads as well as underwear should be reduced and make them available for all females.
6. Reproduction of menstrual hygiene booklet for distribution to adolescent girls in schools, and also should be introduced in the female student's curriculum.

Conflict of interests.

Authors have none to declare.

REFERENCES

- Abdulla A (2009). Impact of an education program upon women's knowledge toward management of breast self-examination. Unpublished, Dissertation, Baghdad University, College of Nursing.
- Adhikari P, Kadel B, Dhungel SI, Mandal A (2007). Knowledge and practice regarding menstrual hygiene in rural adolescent girls of Nepal. *Kathmandu Univ. Med. J. (KUMJ)*. 5(3):382-386.
- Adinma ED, Adinma JI (2008). Perceptions and practices on menstruation amongst Nigerian secondary school girls. *Afr. J. Reprod. Health* 12(1):74-83.
- Amin P (2008). Risk Factors for Breast Cancer among Patients Attending Erbil Hospital. Unpublished, thesis, Hawler Medical University, College of Nursing.
- Dasgupta A, Sarkar M (2008). Menstrual hygiene: How hygienic is the adolescent girl. *Indian J. Commun. Med.* 33(2):77-80.
- Jaff C (2010). Knowledge of female preparatory students regarding breast cancer and breast self examination, Sulaimani City. Unpublished thesis, Sulaimani University, College of Nursing.
- Singh SP, Singh M, Arora M, Sen P (2006). Knowledge Assessment Regarding Puberty and Menstruation Among Adolescent Girls. *Indian J. Prev. Soc. Med.* 37(1-2):6.
- UNICEF and WHO (2008). Progress on Drinking Water and Sanitation: Special focus on sanitation. Available at: http://www.wssinfo.org/fileadmin/user_upload/resources/1251794333-JMP_08_en.pdf
- WHO (2009). Adolescent health. Available at: http://www.who.int/topics/adolescent_health/en/