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Original Article

Mother-Daughter's Relationship With Menstrual Hygiene and Premenstrual Symptoms in Iranian Teenage Girls

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Abstract

Background: Girls need special care regarding menstrual hygiene because of early pubertal development and related problems. The researchers aimed to explore the knowledge about the role of the mother-daughter relationship in menstrual hygiene among young teens.

Methods: A cross-sectional study was conducted (February-April 2020) among 190 elderly young teenage girls in middle schools who lived in Bukan, North-West of Iran. Data about demographic characteristics, menstrual information, knowledge of menstrual hygiene management, the practice of menstrual hygiene, the premenstrual symptom screening tool, visual analog scale for pain, and parent-child relationship survey were collected by a questionnaire using a multistage random sampling method. Finally, the obtained data were analyzed using SPSS (version 25) through descriptive and analytical statistics.

Results: The most common severe signs and symptoms were anger/irritability (21.6%), fatigue/lack of energy (19.5%), and decreased interest in household activities (17.9%). A sense of shame was reported more among girls who have moderate relationships with their mothers ($P=0.011$), and a significant relationship was found between mothers' low literacy and the severity of premenstrual symptoms in their daughters ($P=0.036$).

Conclusion: Mothers play a crucial role in their daughters' lives, which can buffer stressors and relieve anxiety, especially during the experiencing of menarche and during the menstruation period, indicating familial support to overcome the puberty-related crisis.

Keywords: Menstruation, Puberty, Premenstrual syndrome, Adolescent health

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Introduction

Every day, many young teenage girls experience the menarche phenomenon worldwide, and they will be faced with some physical and psychological problems if they are not prepared to face it. Teen girls, because of the cycle of menarche, need special care in all communities as it is often associated with stress and poor health conditions (1). The first menstruation is often horrifying and traumatic (causing emotional distress) to an adolescent girl because it usually occurs without awareness, especially in the Iranian context (2). Among females, early menarche has been also related to an increased risk of some diseases such as type II diabetes, cardiovascular disease, reproductive cancers, psychological disorders, depression, smoking and alcohol use in adolescence, and early sexual behavior in adolescence (1). The age at menarche is also influenced by socioeconomic, geographical, nutritional, and environmental factors (3), healthy lifestyle, ethnicity (4), maternal educational level, and loss of mother (5), leading to differences in ages for menarche at populations in various sections of the world (4). In modern times, the mean age of menarche has reduced from 16-17 years at the end of the nineteenth century to less than 13 years (1), and it was reported 12.81 years among Iranian girls (6). There is an essential need to better comprehend the consequences of early menarche and the process by which it may increase girls' exposure to diseases and adverse health behaviors (1). Numerous pieces of evidence revealed a lower level of awareness about menarche and menstruation among the girls when they first experienced it, which maybe act as a source of distress for young teenage girls (7,8). In other words, girls in many low- and middle-income countries such as Iran enter puberty with insufficient knowledge and misconceptions about menstruation, are incapable

of tackling this issue, and are unsure of when and where to receive the needed help. This is because their adults, including parents, especially mothers, are themselves ill-informed and hesitant to discuss sexuality, reproduction, and menstruation (2).

Early pubertal development could rely on the higher risks of poor health (1). It has also been reported that there is a fairly good cohesion between the age of menarche of mothers and their daughters (5). Mothers' communication with family members is part of the process of change within a family that could have positive or negative consequences and might be effective or ineffective, especially for children. As a result, every mother needs to be able to openly and effectively communicate with her daughter/daughters. Open, effective communication profits not only young girls but also every member of the family (8). Social forbiddance and the negative attitude of mothers in openly discussing the related issues have clogged the access of adolescent girls to the right kind of information, especially in Iran (7). When a daughter perceives that she is forced to go through life without the love, backing, and breeding of a mother, she often gropes blindly in the dark, crashing into walls, and at times, faltering and falling, and unable to stand up again (9). Accordingly, we believe that there could be nothing more detrimental to a daughter's self-belief, the spirit of life than perceived rejection from her mother (10). A study conducted in Dire Dawa, Ethiopia showed that cultural taboo, shame, and lack of communication skills of mothers severely prolong the communication between mothers and adolescents in matters about sexuality (8). Mothers are the main sources of information on menstruation in adolescent girls (7,8).

With this background, in this study, the research team aimed to explore the knowledge about menstruation, the role of the mother-daughter relationship in menstrual hygiene practices, and related stressors among young teenage girls.

Materials and Methods

Participants and Procedure

A cross-sectional design was used in this study with 190 young teenage girls in middle schools in Bukan, North-West of Iran from February to April 2020. The inclusion criteria included teens, girls in grades 7-9, and aged 12-14, and experience of at least one menstrual period in the last three months. On the other hand, the exclusion criteria were a history of severe physical or mental illness of a mother or daughter and teenagers' or mothers' unwillingness or lack of opportunity to participate in the study. Multistage random sampling was employed to recruit participants in the study. In the first step, four schools with 300 students were randomly selected from the twelve secondary girls' schools, and then in each middle school, students were invited to participate in the study. The sample size was estimated considering a 95% confidence interval, a margin of error of 5%, and a proportion of 20% of mother-daughter communication which mainly focused on menstruation issues (11), and it included 242 female students. Finally, 190 students attended the study. The response rate in this study was 79%, and this loss of participants was probably because of the outbreak of coronavirus disease 19 (COVID-19). Students anonymously completed the self-reported questionnaire.

Measures

Demographics

Based on a researcher-made questionnaire, background data included age, mothers' literacy, senior sister, living with, history of social relationship, and sleeping status.

Menstrual Information

A researcher-made questionnaire measured menstrual information. Items included the source of menstrual health information, the closest person, talking about menses with friends, how of receiving the menstrual pad, the mother's active menstrual cycle, history of mother's painful menstruations, sense of anxiety during menarche, taking shower, washing external genital area, menstrual cycle time, and period time.

Knowledge of Menstrual Hygiene Management

The students' knowledge about menstrual health management was measured using an eleven-item scale, which had been applied by Gultie et al (12). Examples of items were "Poor menstrual hygiene predisposes to infection" and "Pad should be changed frequently". A set of three-choice answers (Yes, No, and I do not know) was considered as a response format. All items of the scale are scored on two points (0-1). The Cronbach alpha for the scale was 0.66, indicating moderate construct validity of this scale. A higher score indicated a proper level of knowledge about menstrual health.

The Practice of Menstrual Hygiene

A scale with a set of eight items was applied to measure the practice of menstrual hygiene (7). Examples of items were "Cleaning of the external genitalia, response: Satisfactory or unsatisfactory" and "Material used for cleaning the external genitalia, responses: Only water soap and water, and water and antiseptic". The Cronbach's alpha for the scale was 0.81.

The Premenstrual Symptoms Screening Tool

We sued a slightly modified version of the Premenstrual Symptoms Screening Tool (PSST) to measure premenstrual symptoms (13). The PSST consists of 19 items, 14 premenstrual symptoms, and 5 functional items, in line with DSM-IV criteria; in this study, we just used 14 premenstrual symptoms. Each item is rated on a four-point scale (not at all = 0, mild = 1, moderate = 2, and severe = 3), based on the instruction of the PSST devised by Steiner et al for the diagnosis of PMS (14). The Cronbach's alpha for the scale was 0.85. A higher score indicates severe premenstrual symptoms.

Visual Analog Scale for Pain

The pain visual analog scale (VAS) is a unidimensional measure of pain intensity. It is a continuous scale comprised of a horizontal (HVAS) or vertical (VVAS) line, usually 10 centimeters (100 mm) in length, anchored by 2 verbal descriptors, one for each symptom extreme. The HAVAS line was applied in this study. The pain VAS is a single-item scale. Response options/scale for pain intensity, the scale is most commonly anchored by "no pain" and "pain as bad as it could be" or "worst imaginable pain", receiving scores of 0 and 10), respectively (15,16).

Parent-Child Relationship Survey

The children's social-emotional development scale of Parent-Child Relationship Survey (P-CRS) was used, including twenty-four items (17). Exploratory factor analysis revealed seven domains of social-emotional development, including negative peer social relations, positive peer social relations, task orientation, emotional sensitivity/anxiety, self-reliance, frustration tolerance, and positive disposition (18). The P-CRS is a psychometrically valid and user-friendly questionnaire that could potentially help schools, researchers, and pediatricians to assess parent-child relationships. Examples of items were "How long do you spend time with your mother?" and "How much do you trust your mother?". Each item is rated on a seven-point scale (1 = Not at all to 7 = Very much). The content validity of this scale has been also reported in numerous studies in the Persian language (19,20), and its reliability was 0.91 for the Persian version of the scale .(21)In our study, the Cronbach's alpha for the scale was 0.90. A higher score represents a higher parent-child relationship.

Statistical Analysis

The statistical analysis was performed by IBM SPSS Statistics software (IBM SPSS Statistics, Armonk, USA version 25). The normality of the numeric variables was checked by the Kolmogorov-Smirnov test. Data were presented using means (SD) and frequencies (%) for continuous and categorical variables, respectively. For assessing the relationship among numeric variables, the general linear model was utilized in univariate and multivariate models. The categorical variables were entered into the model as indicators. Regression coefficients and their 95% confidence intervals were reported as the effect size of the relationship. Furthermore, the association between first feelings, and showering and washing the external genital area with relationship variables was assessed using multinomial logistic regression. Odds ratios (ORs) and their 95% confidence intervals were reported as the effect size of the relationship. In all analyses, *P* values less than 0.05 were considered significant.

Results

The participants consisted of 190 female students in grades of seven (n = 49, 25.8%), eight (n = 69, 36.3%), and nine (n = 72, 37.6%). The age of participants ranged from 12 to 16, including 12 (n = 8, 4.2%), 13 (n = 47, 24.7%), 14 (n = 74, 38.9%), and 15 (n = 61, 32.1%) years and older. The age of menarche in the students was less than 11 (n = 29, 15.3%), 12 (n = 55, 28.8%), 13 (n = 72, 37.9%), and 14 (n = 36, 17.9%) years and older. The majority of students' mothers had active menstruation (n = 170, 89.5%), and most students (n = 186, 87.9%) reported a history of receiving menstrual information.

Table 1 presents the frequency of premenstrual signs and symptoms in young teens. The most common severe signs and symptoms were anger/irritability (n = 41, 21.6%), fatigue/lack of energy (n = 37, 19.5%), and decreased interest in household activities (n = 34, 17.9%). On the other hand, insomnia (n = 14, 7.4%), decreased interest in work activities (n = 14, 7.4%), feeling overwhelmed or out of control (n = 14, 7.4%), depressed mood/hopelessness (n = 14, 7.9%), and difficulty concentrating (n = 14, 7.9%) were reported less frequently.

The assessment of the relationship between the daughter-mother relationship and menstrual-related behaviors showed that good relationships between mothers and their daughters were not related to feeling ashamed in the first period ($P = 0.074$), taking a shower after 1-2 days ($P = 0.845$), and washing external genital area three times a day ($P = 0.728$). According to the results, although medium daughter-mother relationships were not recognized as the predictors of taking a shower after 1-2 days ($P = 0.939$) and washing the external genital area three times a day ($P = 0.899$), the sense of shame ($P = 0.011$) was reported less among girls who had reported medium relationships with their mothers. Additionally, with one score increase in the mother-daughter relationship, the chance of having shame was significantly reduced by 72% compared to the reference category (Table 2).

Moreover, the results of the relationship between premenstrual symptoms and underlying predictors using univariate analysis (Table 3) indicated that mothers' literacy in some categories had a significant relationship with the severity of premenstrual symptoms among their daughters. For example, compared to the daughters of mothers who had academic literacy, those of mothers with elementary and middle school literacy had 6.23 ($P = 0.005$) and 3.84 ($P = 0.049$) units higher scores of premenstrual signs and symptoms, respectively. Further, daughters whose mothers were their source of menstrual health information, had a -3.26 units lower score of premenstrual signs and symptoms although it was not statistically significant ($P = 0.47$). The findings also demonstrated that students who had a history of social relationships and reported sleeping well had 5.25 ($P = 0.009$) and -6.15 ($P < 0.000$) units lower scores of premenstrual signs and symptoms, respectively. Based on the results, no relationship was found between knowledge ($P = 0.075$) and performance ($P = 0.846$) with premenstrual symptoms.

Moreover, through multivariate regression analysis, our results revealed that the middle and higher level of literacy

Table 1. The Frequency (Percentage) of Experienced Signs and Symptoms of PSST by Teenage Students (N = 190)

Symptoms	Not at All	Mild	Moderate	Severe
	No. (%)	No. (%)	No. (%)	No. (%)
1.Anger/irritability	39 (20.5)	36 (18.9)	74 (38.9)	41 (21.6)
2. Anxiety/tension	79 (41.6)	46 (24.2)	43 (22.6)	22 (11.6)
3. Tearful/increased sensitivity to rejection	110 (57.9)	29 (15.3)	31 (16.3)	20 (10.5)
4. Depressed mood/hopelessness	122 (64.2)	38 (20.0)	15 (7.9)	15 (7.9)
5. Decreased interest in work activities	114 (60.0)	28 (14.7)	34 (19.9)	14 (7.4)
6. Decreased interest home in-home activities	78 (41.1)	40 (21.1)	38 (20.0)	34 (17.9)
7. Decreased interest in social activities	100 (52.6)	37 (19.5)	34 (17.9)	19 (10.0)
8. Difficulty concentrating	97 (51.1)	39 (20.5)	39 (20.5)	15 (7.9)
9. Fatigue/lack of energy	57 (30.0)	57 (30.0)	39 (20.5)	37 (19.5)
10. Overeating/food craving	100 (52.6)	49 (25.8)	24 (12.6)	17 (8.9)
11. Insomnia	120 (63.2)	29 (15.3)	27 (14.2)	14 (7.4)
12. Hyper insomnia (needing more sleep)	88 (46.3)	32 (16.8)	53 (27.9)	17 (8.9)
13. Feeling overwhelmed or out of control	107 (56.3)	40 (21.1)	29 (15.3)	14 (7.4)
14. Physical symptoms (including breast tenderness, headaches, joint/muscle pain, bloating, and weight gain)	65 (34.2)	51 (26.8)	52 (27.4)	22 (11.6)

Note. PSST, Premenstrual Symptoms Screening Tool.

Table 2. Daughter-Mother Relationships and Menstrual Health Behaviors (N = 190)

Variable	Healthy Behaviors					
	First-Period Feeling		Taking a Shower		Washing External Genital Area	
	Shame		After 1-2 Days		Three Times a Day	
	OR	*P* Value	OR	*P* Value	OR	*P* Value
Daughter-mother relationship						
Good	0.42	0.074	1.09	0.845	1.15	0.728
Medium	0.28	0.011	0.97	0.939	0.95	0.899
Weak	Referent	-	-	-	-	-

Note. OR: odds ratio.

of mothers, receiving menstrual health information from mothers, history of social relationships, good quality of sleeping, and history of mother's painful menstruations were predictors of premenstrual symptoms among teen girls ($P < 0.05$).

Furthermore, for each increase in the score of the mother-daughter relationship, the score of premenstrual signs and symptoms was reduced by about 0.28 units ($P = 0.004$). The results of the relationship between pain and underlying predictors by using univariate analysis (Table 4) represented that students who were in the age range of 12-15 years, reported a lower score of pain in comparison to the reference category. Additionally, participants who reported sleeping well had a 2.17 units lower score of pain ($P < 0.000$) compared to the reference category. Likewise, participants whose period times were between 3 and 7 days, had 2.15 units lower scores of pain ($P = 0.003$) compared to the reference category. Based on the results, students whose mothers had a history of painful menstruations felt 1.50 units higher scores of pain ($P = 0.004$) in comparison to girls whose mothers did not have a history of painful menstruations.

Finally, the results of multivariate regression analyses indicated that age range of 12-13 years, receiving menstrual health information via friends and peers, history of the mother's painful menstruations, and duration of 3-7 days of the period time were the statistically significant predictors of painful menstruation among teen girls ($P < 0.05$).

Discussion

This study examined the role of mothers in the menstruation health of their daughters, assessed the related knowledge, and identified the status of menstrual hygiene among girls who were in the primary years of experiencing menstruation. Based on the findings, the most common severe premenstrual signs and symptoms among the studied participants were anger/irritability, fatigue/lack of energy, and decreased interest in household activities. Considering different reported signs and symptoms, it seems that there is cultural-ethnical diversity in the reported signs and symptoms among young teenage girls. The results of a study in Egypt showed that dysmenorrhea, abnormal menstrual cycle length, fatigue, breast pain, and mood disorders were the most common menstrual signs and symptoms (22). Likewise, dysmenorrhea, absenteeism, and fatigue (23), as well as dysmenorrhea and irregular menstrual cycles were

Table 3. The Results of the Relationship Between PSST and Underlying Predictors Using Univariate and Multivariate Analysis (N = 190)

Variables	Unadjusted				Adjusted			
	B	95% CI		*P* Value	B	95% CI		*P* Value
		Lower	Upper			Lower	Upper	
Mothers' literacy								
Illiterate	-0.60	-7.07	5.86	0.854	-	-	-	-
Elementary	6.22	1.87	10.58	0.005	2.79	-0.85	6.44	0.133
Middle school	3.83	0.02	7.64	0.049	2.08	1.84	4.02	0.036
High school	2.91	-1.38	7.20	0.183	-	-	-	-
Diploma	1.97	-1.53	5.47	0.268	-	-	-	-
Academic	Referent	-	-	-	-	-	-	-
Senior sister								
0	-4.63	-21.62	12.35	0.591	-	-	-	-
1	-4.88	-21.99	12.22	0.574	-	-	-	-
2+	Referent	-	-	-	-	-	-	-
Source of menstrual health information								
Mother	-3.26	-6.49	-0.03	0.047	-2.73	-5.17	-0.28	0.029
Sister	-0.64	-8.05	6.76	0.863	-	-	-	-
Friends and peers	-1.48	-8.88	5.92	0.694	-	-	-	-
Printed sources	2.35	-7.73	12.43	0.646	-	-	-	-
Internet	1.78	-4.22	7.79	0.558	-	-	-	-
Teachers	-0.76	-6.56	5.02	0.794	-	-	-	-
Others	Referent	-	-	-	-	-	-	-
Talking about menses with friends	1.62	-0.94	4.19	0.214	-	-	-	-
History of social relationship	-5.25	-9.16	-1.33	0.009	-4.32	-8.13	-0.50	0.027
Sleeping status								
Calm and good	-6.15	-8.80	-3.49	0.001	-5.28	-8.00	-2.57	0.000
Higgledy	Referent	-	-	-	-	-	-	-
Mother active menstrual cycle	-4.35	-8.29	-.41	0.030	-1.83	-5.71	2.04	0.352
History of mother's painful menstruations	4.33	1.47	7.19	0.003	-4.32			0.016
Sense of anxiety during Menarche								
Fear and anxiety	3.71	0.82	6.60	0.012	0.99	-2.14	4.13	0.531
Shame	3.18	0.26	6.11	0.033	0.26	-2.70	3.23	0.860
None	Referent	-	-	-	-	-	-	-
Taking a shower								
Daily	-1.72	-5.80	2.35	0.405	-	-	-	-
After 1-2 days	-1.26	-4.29	1.76	0.410	-	-	-	-
After period	Referent	-	-	-	-	-	-	-
Washing external genital area								
Three or more than three times	5.12	-2.53	12.77	0.188	-	-	-	-
Once a day	6.24	-1.68	14.16	0.122	-	-	-	-
Not need	Referent	-	-	-	-	-	-	-
Knowledge	-0.45	-0.96	0.04	0.075	-0.43	-0.96	0.10	0.111
Performance	-0.08	-0.95	0.78	0.846	-0.26	-1.11	0.58	0.535
Relationships	-0.07	-0.12	-0.02	0.004	-0.03	-0.08	0.01	0.223

Note. PSST, Premenstrual Symptoms Screening Tool; CI, confidence interval.

the most common symptoms of menstruation in Nigeria and southern Ethiopia, respectively (24).

The findings indicated that a sense of shame was reported less among girls who had good relationships with their mothers. In other words, young teenage daughters who did not have good relationships were probably alone or did not find it easy to talk about menarche or mensuration with their mothers. Developing a mother's

Table 4. The Results of the Relationship Between Pain-VAS and Underlying Predictors Using Univariate and Multivariate Analyses (N = 190)

Variables	Unadjusted				Adjusted			
	B	95% CI		*P* Value	B	95% CI		*P* Value
		Lower	Upper			Lower	Upper	
Age								
12	-7.62	-13.85	-1.39	0.017	-02.25	-4.31	-0.20	0.031
13	-7.21	-13.14	-1.28	0.017	-1.24	-2.31	-0.16	0.024
14	-6.66	-12.57	-0.75	0.027	-0.72	-1.67	0.22	0.134
15	-5.71	-11.65	0.21	0.059	-	-	-	-
16+	Referent	-	-	-	-	-	-	-
Living with								
Both parents	2.83	0.38	5.29	0.024	0.96	-0.93	2.86	0.316
With father	2.33	-1.84	6.51	0.272	-	-	-	-
With mother	4.33	1.14	7.52	0.008	2.01	-0.064	4.67	0.137
others	Referent	-	-	-	-	-	-	-
Source of information								
Mother	0.09	-1.05	1.23	0.872	-	-	-	-
Sister	-1.22	-7.26	4.80	0.688	-	-	-	-
Friends and peers	3.10	0.47	5.73	0.021	2.25	0.01	4.51	0.050
Printed sources	-0.22	-2.85	2.40	0.864	-	-	-	-
Internet	-1.56	-5.14	2.01	0.390	-	-	-	-
Teachers	1.17	-0.96	3.30	0.280	-	-	-	-
Others	Referent	-	-	-	-	-	-	-
Most closet person								
Mother	0.20	-1.66	2.07	0.830	-	-	-	-
Sister	0.53	-1.88	2.94	0.664	-	-	-	-
Friends	0.46	-1.95	2.87	0.707	-	-	-	-
Classmates	3.48	-0.41	7.38	0.080	-	-	-	-
None	Referent	-	-	-	-	-	-	-
Talking about menses with friends	1.06	0.15	1.96	0.021	0.65	-0.19	1.50	0.132
History of social relationship	-0.37	-1.78	1.04	0.606	-	-	-	-
Sleeping status								
Calm and good	-2.17	-3.11	-1.23	0.000	-1.85	-2.75	-0.94	0.000
Higgledy	Referent	-	-	-	-	-	-	-
Mother active menstrual cycle	-0.53	-1.95	0.87	0.454	-	-	-	-
History of mother's painful menstruations	1.49	0.48	2.51	0.004	0.98	0.01	1.94	0.047
Menstrual cycle time								
<25 days	-1.54	-2.92	-0.17	0.028	-0.33	-1.24	0.57	0.468
25-30 days	-1.02	-2.24	0.19	0.099	-	-	-	-
>30 days	Referent	-	-	-	-	-	-	-
Period time								
<3 days	-2.73	-6.36	0.89	0.139	-	-	-	-
3-7 days	-2.14	-3.53	-0.76	0.003	-1.83	-3.04	-0.631	0.003
>7 days	-	-	-	-	-	-	-	-

Note. VAS: Visual analog scale; CI, confidence interval.

relationship scale could be considered important, especially in countries such as Iran where daughters are limited or unable to consult with school health staff. In other words, mothers need to be empowered with knowledge and skills to improve the quality of home-based menstrual health education. The study among Nigerian girls demonstrated that the majority of daughters received the needed information about menstruation and sexually transmitted infections via their mothers (25). Based on a qualitative approach to Mexican-American girls, it is

revealed that parental concerns about daughters' pubertal development and communication with their daughters, mothers had a more active role in conveying pubertal information to daughters (26). Based on the results of a study in Ethiopia, dominant challenges associated with menstruation among young teenage girls were menstrual taboos and cultural beliefs surrounding menstruation, myths about menstruation, and interpersonal interaction, emphasizing the mother's role in filling these gaps (27).

In this regard, the findings of a study from Bangladesh demonstrated that the main source of knowledge on menstrual health was from their mother, and the mother was the person who communicated first on reproductive health with adolescent students, highlighting the importance of mother-daughter communication in menstruation issues (11). Furthermore, favorite mother-daughter relationships positively influence the life satisfaction of the daughters and their self-esteem (28).

Additionally, daughters of mothers with university-level literacy reported less severity of premenstrual signs and symptoms in comparison to those of mothers with elementary and middle school literacy levels. It can be postulated that mothers who have higher academic literacy learn effective communication skills in their training; as a result, they can better communicate with their daughters and guide them efficiently. It is supposed that the menstrual hygiene behaviors of young teenage girls in schools are hindered by powerfully embedded cultural beliefs, and some parts of these types of beliefs are rooted in the level of literacy of the family. Accordingly, higher literacy of mothers can overcome these false beliefs and consequently will help improve young teens' menstrual hygiene (29). In addition, providing menstrual hygiene information as brochures on the sanitary napkins designed and prepared for young teens might be useful and help girls improve their knowledge in this regard.

Moreover, because of the variety of cultures and understandings of communities about the phenomenon of menstruation, it is suggested that in addition to improving the communication skills of mothers, it is necessary to prepare information in the school settings and the needed information for young teens through health centers. Moreover, improving the health literacy of girls will enable them to seek the required information via the internet and other information sources.

The findings also indicated that students who had a history of social relationships reported less severity of premenstrual signs and symptoms. Developing social relationships likely improves the life skills of young teenage girls, thus they can communicate well with others in critical conditions such as experiencing menarche or menstruation. Based on the findings of a qualitative study in Indonesia on the experience of adolescent signs and syndromes of menstruation, symptoms cause discomfort and interfere with the social relationships among adolescents (30). However a "mother-daughter's relationship" is a universal or global notion that affects the quality of life of young teenage girls, as well as their readiness to cope with puberty and the related problem. However, because of cultural differences, the health care providers for adolescents should plan and act based on the communities specific values, norms, and cultural aspects of people to prepare the needed information, support, and health care in each area for young teenage girls to keep and improve menstrual hygiene.

This study has some limitations. First, no causal inferences are warranted due to the non-experimental nature of the study. Future studies based on longitudinal data will be needed to explore the association of mother-daughter relationships and premenstrual signs and symptoms among young teenage girl students. Second, some factors might affect menstrual health, a sense of being puberty, which was not measured in this study. Third, the relatively small sample size was not sufficiently powerful to investigate true relationships. Therefore, future studies should consider larger sample sizes.

Conclusion

In this study, it was attempted to explore the knowledge about menstruation, the role of the mother-daughter relationships in menstrual hygiene practices, and related stressors among young teenage girls. The findings demonstrated that girls' sense of shame was decreased by good relationships between daughters and mothers, and mothers' literacy in some categories had a positive significant relationship with the severity of premenstrual symptoms among their daughters. Moreover, a history of social relationships, sleeping well, and good mother-daughter relationships were negatively related to premenstrual signs and symptoms. Therefore, our findings represent that mothers' role in their daughter's adolescent life is crucial and can relieve stress and anxiety, especially during the experiencing of menarche and during the menstrual period times. As a result, based on the nature of mother-daughter relationships in each community, providing specific programs and using proper informing tools are needed. Consistent with these facts, health care providers should provide specific programs based on the cultural characteristics of each community to improve the communication skills of mothers. Finally, improving mothers-daughter communication skills, in turn, will improve the menstrual health of girls and thus the communication skills of future mothers.

Authors' Contribution

AE, HA, and MM participated in the study design and manuscript writing. AE contributed to data collection. SP analyzed the data and MSH played a role in editing the manuscript. The manuscript was read and approved by all the author.

Conflict of Interests

The authors claim no conflict of interests with other people or organizations.

Ethical Permissions

The study was approved by the Ethics Committee of Tabriz

University of Medical Sciences, and informed consent was obtained from all participants before completing the questionnaires.

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