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Knowledge/Awareness and Practices Related to Menstruation Among Female Students: Role of Mother-Daughter Relationship

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The present study was aimed to explore the relationship of mother-daughter relationship, knowledge/awareness, and practices during menstruation. Sample consisted of female *(N* = 317) students of the college and university drawn through convenience sampling technique. Mother-daughter relationship was measured by using Mother-Adult Daughter Questionnaire (Rastogi, 2002). Knowledge/awareness and practices during menstruation were measured by using Practices Misconceptions and Management amongst Adolescent Girls Questionnaire (Ali & Rizvi, 2009). Data were analysed using frequencies and percentages, independent sample *t*-test, ANOVA, and simple logistic regression. Findings revealed that girls restricted their diet and preferred taking hot foods over cold foods during menstruation. They also experienced food cravings during menstruation. There was a lack of awareness/knowledge among female students regarding menstruation and mothers were one of the sources in promoting misconceptions related to menstruation as well as hygienic practices. It was also found that as age of the girls increased the relationship with mother got weak, while, the girls whose mothers were educated had a better relationship with their mothers. Daughters who interacted with their mothers perceived more menstrual changes. Moreover, girls who used sanitary napkins had better relationship with their mothers. Hence, it was suggested that intervention should be planned involving mother along their daughters for better knowledge and awareness to promote better practices during menstruation which is the most significant aspect of women's reproductive health.

Keywords: Menstruation, adolescent girls, mother-daughter relationship, reproductive health, misconceptions, knowledge/ awareness, menstrual hygiene

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Menstruation is a process which holds great importance in a woman's life that involves dramatic changes linked to sexual development and maturation. When a girl reaches puberty, menstruation or menarche is influenced by attitudes toward menstrual cycle, which are molded by the immediate environment and the culture in which girls grow up. Menstruation is a natural phenomenon, still it is taken as a taboo and women face a lot of problems due to the stigma and restrictions that society puts on menstruating woman. In many cultures, a menstruating woman is handled in an exceptionally demeaning way, her touch, her words, and even her vicinity at the sacred places in the house are viewed as ominous. The woman who cooks, cleans, and manages all the family errands, all of a sudden gets to be sullied and in this way unfit to do anything including household chores simply because she is going through her periods (Thakre et al., 2011). Such restrictions later affect the mental state of the women and force them to follow some strict practices related to menstruation. Religious restrictions and social immobility that women experience are a few expected practices for women during this period (see Aflaq & Jami, 2012).

Majority of the girls get menstruation related information from family members, particularly, their mothers (Ali & Rizvi, 2010). This connotes that girls having an intimate mother-daughter association with educated information on menstruation adapt well to menstruation period and its symptoms (Zayas, Bright, Alvarez-Sanchez, & Cabassa, 2009). Those who have positive attitudes view menarche as a natural phenomenon and have better self-perception (Rembeck, Moller, & Gunnarsson, 2006). The more informed the girls are before menarche, the more they report a positive experience and subsequently have more uplifting state of mind towards this natural experience (Sommer, 2012). There is a need to make girls aware of different hygienic practices during menstruation, so that they could lead healthy reproductive lives.

Role of Mother-Daughter Relationship

Communication in mother and daughter relationship plays a vital role in determining the kind of attitude the girls have towards menstruation. The decision or choice in how to manage menstrual symptoms is usually acquired from the environment that involves most of the times, mothers, sisters, and media (Aflaq & Jami, 2012). Incorrect information about periods can lead poor practices during menstruation. Costos, Ackerman, and Paradis (2002) studied the nature of the communication between mothers and daughters at the onset of menarche and tried to find the nature of messages that

mothers pass on to their daughters. They found that negative messages far outweighed positive, and more than a large portion of the sample had not talked about periods with their mothers by any means. Most of the mothers had just given directions about how to deal with the physical management of the menses, while others communicated regret or the message of 'I'm not prepared for you to grow up'. Many mothers connected the beginning of periods with sexuality (you better be watchful at this point). Some reported confusion or astonishment as a common reaction in their culture. A very few mothers had perceived any positive parts of menarche.

Wertheim (2002) have discovered connections between maternal eating practices and their daughters eating behaviours. Kichler and Crowther (2008) discovered that maternal eating issues were linked with daughters' eating issues and mothers often make negative comments about their daughter's appearance and also give very less prior information about the onset of menarche. Age of the daughter also affects this relationship and a mother–daughter eating relationship at post-pubertal phase changes (Wertheim, 2002). Hence, it is evident that mothers play a very vital role in making the menarche a positive or negative experience and effect related practices.

Eating Practices during Menstruation

The researches support that 95% of the anorexics are girls between ages 12-18 years. This is because they face more troubles and negative responses in this time of onset of monthly cycle. Bulimia is found to be associated with menarche. Young girls try to delay menarche as they have negative feelings and opinion about menstruation because of increase fat level in the body during puberty (see Wick-Nelson & Israel, 2006). Another research found out that daughters learn by following their mothers as a good example (Blumberg et al., 2012), thus, by adjusting to mother's recognition about eating practices additionally prompt to more pathology in girls. Criticism from mothers about the daughter's figure and eating behaviours fundamentally add to daughters' challenges in later life (Cooley, Stankovich, & Jones, 2003).

Generally, foods that are abstained during monthly cycle are high in iron (e.g., liver, eggs) which could identify with high incidences of anaemia as a major concern amongst female adolescents. Saudi Arabian women altered their nutritional intake, drinks, and exercise (Moawed, 2001). Likewise, Bengali women who also modified their dietary practices were confined from eating meat, eggs, fish, and green vegetables (Mathews, 1995). Majority of the women were

restricted by their relatives and companions from eating hot and chilly foods like eggs and meat (Ali & Rizvi, 2010). Practices during menstruation are troubling from both a well-being and cleanliness perspective. Daughters of the mothers with dietary issues exhibited an exceptionally lifted rate of nutritional problems in the later part of their lives like low self-esteem, anxiety, drastic life changes, and low self-regard (Cooley et al., 2003).

Rationale of the Study

The purpose of the present study is to explore the mother-daughter relationship, knowledge/awareness, and practices in context of menstruation. Aflaq and Jami (2012) found significant role of mother in hygiene practices related to menstruation. They also found role of attitudes in experiences during menstruation that is if attitudes are negative, related experiences are also psychologically and socially bad. They also found mother to be the major source of information for girls in getting information about menstruation. Nevertheless, none of the studies in Pakistan have studied role of mother-daughter relationship in awareness and practices related to menstruation. Therefore, objectives of the present study are to:

1. Study level of knowledge and awareness related to menstruation among female students.
2. Explore eating practices during menstruation among female students.
3. Study the correlation between mother-daughter relationship, knowledge/awareness and practices related to menstruation among female students.
4. Explore role of demographic variables (e.g., educational level, experience shared with, age of onset of menarche, and mother's education) in mother-daughter relationship, knowledge/awareness and practices related to menstruation among female students.

Hypotheses

1. Girls experiencing more changes (energy, sleep, appetite, and activity level) during menstruation have more communication with their mothers.
2. Mothers impose restrictions on daughters regarding menstruation (mobility, hygiene, food, and religion related).
3. Mothers who are educated have better relationship and communication with their daughters than the ones who are not educated.

4. As age of the daughters increases, mother-daughter relationship gets strengthened.
5. Girls during menstruation prefer taking hot food as compared to cold foods.
6. Girls who use sanitary napkins experience less change during menstruation and have less menstrual symptoms as compared to those who use homemade napkins.

Method

Research Design

It was correlation study based on cross-sectional research design. Survey method was used for data collection. Data collection tools were questionnaires.

Sample

Female students (N = 317) from university setting with age range 20-27 years (M = 22.21, SD = 1.74) participated in the study. Inclusion criterion was that participants must be experiencing regular menstruation cycle and whose mothers are alive. Purposive sampling technique was used. See demographic details in Table 1.

Table 1
Frequency and Percentages along Demographic Variables (N=317)

Demographic	*f (%)*	Demographic	*f (%)*
Education		Education Discipline	
13-14 years	77(24.3)	Natural Sciences	103(32.5)
15-16 years	197(62.1)	Social Sciences	158(49)
17-18 years	35(11)	Applied Sciences	56(17)
19-20 years	4(1.3)	Father Alive	
Father's Education		Yes	307(96.8)
Uneducated	6(1.9)	No	10(3.2)
Matric	38(12)	Mother's Occupation	
Intermediate	32(10.1)	Housewife	274
Bachelor	91(28.7)	Working Woman	115
Masters	118(37.2)	Mother's Education	
M.Phil.	18(5.7)	Uneducated	60 (18.9)
Ph.D.	10(3.2)	Matric	72(22.7)
Missing	4(1.3)	Intermediate	62(19.6)

Continued…

Demographic	*f (%)*	Demographic	*f (%)*
Father's Occupation		Bachelor	4(26.5)
Driver/Clerk	19(6)	Master	34(10.7)
Businessman	58(18)	Ph.D.	5(1.6)
Govt. Officer	117(36.9)	Language Spoken at home	
Private Job	36(11.4)	Urdu	129(50.2)
Teacher	41(12.9)	Pashto	79(18)
Doctor	6(1.9)	Sindhi	48(14)
Forces	25(7.9)	Punjabi	61(29)
Landlord	11(3.5)	Socio-Economic Status	
Missing	4	Low	27(7.7)
		Middle	256(80.8)
		High	34(10.7)

Note. Socioeconomic status is according to the respondents.

Table 1 shows most of the girls have 15-16 years of education and studying in social sciences. Majority of the sample have father with a bachelor level education and are employed in the government sector, while mothers are housewives and have matric level education. Most of the participants are Urdu speaking and belong to middle socio-economic class.

Instruments

Mother and Adult Daughter Questionnaire (MAD). It was developed by Rastogi (2002) for the purpose of measuring various aspects of the mother-adult daughter relationship. It consists of 25 questions, of which only 18 are scored. Item 1 through 5, items 24 and 25 are general information questions that are not included in the scoring. It is a Likert-type scale. Only one item was reverse-scored. It has three subscales, Connectedness, Interdependency, and Trust in Hierarchy. Connectedness refers to level of intimacy between mother-daughter relationships. Interdependence reflects the daughter's expectation that her mother will be available, emotionally or otherwise, when needed, higher scores reflecting greater Interdependency. Trust in Hierarchy attempts to pick up the positive aspects of the hierarchical relationship between the mother and her adult daughter, higher scores pointing to greater trust in hierarchy. Beside this, this scale also gives information in domains of level of communication, closeness, interaction, and satisfaction in mother-daughter relationship. The alpha reliability of Connectedness was .92, Interdependence was .86, and Trust in Hierarchy was .87 (Rastogi, 2002).

Practices Misconceptions and Management amongst Adolescent Girls. It was developed by Ali and Rizvi (2005). The scale was developed to study the menstrual knowledge and practices of female adolescents. It consists of 40 questions; it has 5 modules each module contains different set of questions. Module 1 was of experiences related to menstruation; Module 2 consisted of hygiene related to menstruation items; Module 3 consisted of questions related to awareness; Module 4 consisted of eating practices during menstruation related items; while, Module 5 consisted of questions related to mobility.

Demographic Sheet. It was developed to get information related to age, age onset of menarche, discipline, education, parents alive, experience of periods shared with, language spoken at home, length of cycle, height, weight, no of siblings, birth order, mother's education, fathers' education, socio-economic status, length of menstrual cycle, and changes experienced during menstruation as in appetite, energy level, sleep, and activity level.

Procedure

Participants were approached in the universities and colleges of Islamabad. Written informed consent was taken. Data were collected in group setting. Anonymity was ensured as well as the confidentiality. Participants were given the questionnaire and were requested to answer the items honestly. A short summary about the topic of the study was given. Time taken for filling the questionnaires was about 20-25 minutes. During the phase of data collection there was no use of deception.

Results

The present study was aimed to explore the role of mother-daughter relationship in knowledge awareness, practices including eating, hygiene, restrictions, and changes related to menstruation. Appropriate statistical procedures were used to analyze the data. Cronbach alpha coefficient of scales and subscales were computed. Descriptive statistics were computed including mean, standard deviation, range, skewness, and kurtosis. Pearson Product Moment Correlation was computed to investigate the relationship among variables. Logistic regression analysis was done to study the predictive role of mother-daughter relationship in practices during menstruation. Moreover, independent sample *t*-test was also performed.

Descriptive Statistics and Reliabilities

Table 2 shows the descriptive statistics including the total number of items, alpha reliability, mean, standard deviation, range, skewness, and kurtosis on Mother-Adult Daughter Scale (MAD) and its Subscales and physical symptoms experienced before, during, and after menstruation. The raw scores were transformed to make interpretation of means and standard deviation meaningful.

Table 2

Reliability and Descriptive Analysis of MAD Scale, its Subscales and Symptoms related to Menstruation (N = 317)

Variables	*k*	*α*	*M*(*SD*)	Actual	Potential	Skewness	Kurtosis
MAD	19	.75	73.4(12.17)	19-95	19-95	-.82	.28
INT	10	.69	35.94(6.65)	10-45	10-50	-.74	.10
TIH	3	.82	12.58(2.54)	4-15	3-15	-1.0	.66
CONN	6	.75	24.93(4.54)	10-30	6-30	-.91	.38
Pre-Men	25	.81	44.60(4.19)	27-50	25-50	-.69	.15
Peri-Men	25	.87	40.30(5.76)	26-45	25-50	-.45	-.37
Post-Men	25	.75	48.50(2.21)	27-50	25-50	-.01	.96

Note. MAD = Mother - Adult Daughter Scale; INT = Interdependency; TIH = Trust in Hierarchy; CONN = Connectedness; Pre-Men = Pre-menstrual symptoms; Peri-Men = Peri-menstruation symptoms; Post-Men = Post-menstrual symptoms.

In Table 2 according to the transformed scores on the subscales of MAD, high mean is observed than middle value for all the domains that means the daughter perceive themselves more connected towards their mothers and perceive more interdependency and trust in relationship hierarchy. In the symptoms, it is observed that post-menstrual symptoms have higher mean and more homogenous response as compared to pre-menstrual symptoms and peri-menstrual symptoms. Hence, it shows that girls experience post-menstrual symptoms more than the pre and peri–menstrual symptoms. The value in the Skewness and Kurtosis are between -1 to +1 which shows that data is normally distributed for the scale of MAD. The reliability of scales and subscales is acceptable to good.

Correlation between Study Variables

To study the relationship between pre, peri, and post menstrual symptoms among females experiencing change in routine during menstruation and in mother-daughter relationship, along-with its subscales, Pearson Product Moment Correlation was computed (see Table 3).

Table 3 shows that total score on MAD is significantly positively correlated with its subscales ($p < .001$) and with satisfaction, which shows construct validity of the scale. Participants who have stronger mother-daughter relationship have more satisfaction in their relationship. Mother-daughter relationship is also positively correlated with the Post-menstrual symptoms, which shows that the girls who experience after menstruation symptoms have stronger mother-daughter relationship including connectedness, trust in hierarchy, closeness, and communication but not with interdependency.

Table 3 further shows that closeness is also significantly correlated with satisfaction ($p < .01$), which means that with higher closeness, higher satisfaction exists in mother-daughter relationship. The closeness with mother is significantly positively correlated with peri-menstrual symptoms, which means that daughters who show closeness towards their mother experience peri-menstrual (during) symptoms more. Communication with mother is significantly correlated with changes during menstruation this confirms Hypothesis 1. The changes in routine during menstruation involve the changes in appetite, energy level, sleep, and activity level. Satisfaction with mother's relationship is significantly correlated ($p < .01$) with the post-menstrual symptoms. Pre-menstrual symptoms are significantly correlated with peri-and post-menstrual symptoms. Symptoms experienced before, during, and after menstruation are also significantly linked with the changes in appetite, energy, sleep, and activity during menstruation.

Table 3

Correlation of Mother-Daughter Relationship and with Symptoms related to Menstruation and Changes (N = 317)

	Variables	1	2	3	4	5	6	7	8	9	10	11	12
1	MAD	-	.86**	.78**	.80**	.57**	.02	.03	.50***	.05	.01	.17**	.02
2	Connectedness		-	.67**	.54**	.61**	.03	.02	.49**	.04	-.00	.14**	.00
3	Interdependency			-	.63**	.46**	.03	.05	44**	.02	.01	.07	-.02
4	Trust in Hierarchy				-	.38**	.00	-.09	.37**	.10	.00	.17**	.00
5	Closeness					-	.02	-.01	.74**	.05	-.12*	.17**	.08
6	Communication						-	-.09	.04	.07	.05	.03	.14**
7	Interaction							-	-.04	-.06	.04	-.08	-.04
8	Satisfaction								-	.09	-.07	.17**	.10
9	Pre-Menstrual									-	.31*	.35**	33**
10	Peri-Menstrual										-	.09	.21*
11	Post-Menstrual											-	.12*
12	Changes												-

Note. MAD = Mother-Adult Daughter Scale.
*$p < .05$.** $p < .01$. *** $p < .001$.

Mother-Daughter Relationship as Predictor of Practices During Menstruation

Simple logistics regression analysis was done for mother-daughter relationship in predicting the practices during menstruation. Each practice is measured as dichotomous 'yes' and 'no' response.

Table 4
Simple Logistic Regression Analysis for MAD and Practices During Menstruation (N = 317)

						95% CI	
Mother-daughter Relationship	*B*	*S.E*	WALD	Exp[b]	*p*	Upper	Lower
Informed (Mother)	-.033	.00	12.70	.96	.00	.95	.98
Bathing Practices altered	-.00	.00	.74	1.7	.38	.97	1.00
Elders Advised not to rinse	.14	.00	2.43	.98	.11	.97	1.00
Restrict Water Intake	-.00	.00	.24	.99	.62	.97	1.0
Rinse your Perineum	-.00	.01	.02	.99	.88	.98	1.01
Prior Knowledge	.01	.00	4.43	.09	.03	.96	.99
Mobility Restricted	.00	.00	.18	1.00	.66	.98	1.02
Avoid going out	.00	.00	.13	1.00	.71	.98	1.02
Restricted Religious Activity	.00	.00	.36	1.00	.54	.98	1.02
Mother Restricts Water Intake	-.01	.01	4.08	.98	.04	.96	.99
Discomfort Before	.01	.00	2.89	1.01	.08	.99	1.03
Discomfort During	-.00	.01	.023	.99	.88	.97	1.02
Discomfort After	.01	.01	1.32	1.01	.25	.99	1.03
Cold Food	-.00	.00	.22	.99	.63	.97	1.03
Hot Food	.00	.01	.05	1.00	.81	.98	1.02

Note. *B* = un-standardized regression coefficient; *S.E* = standard error estimate of the regression coefficient; WALD are the test of significant, distributed as the chi square with degree of freedom.

Results in the Table 4 indicate the results of simple logistic regression analysis. Significant scores on prior information about monarchy is predicted by strong mother-daughter relationship as most of the times girls share the information about the onset of menarche with their mothers. Significant scores on prior knowledge shows having better mother-daughter relationship predicts that girls had the prior information about menarche before onset. Another value that is significant is the question about if mother restrict water intake. It shows that good relationship with mother predicts the restriction of water intake by the daughters during menstruation. Rests of the results are nonsignificant.

Education of Mothers and Differences Along Mother-Daughter Relationships

To see the role of mother's education on mother-daughter relationship, independent sample *t*-test was done. Two groups were made Group 1 was of mothers who were educated till Graduate level, while Group 2 consisted of the mothers who were un-educated.

Table 5

Mean, Standard Deviation and t-value on Mother-Daughter Relationship Along with Mother's Education (N = 317)

Variable	Educated (n = 257)		Un-educated (n = 60)				95% CI		Cohen's
	M	*SD*	*M*	*SD*	*t*(315)	*p*	*LL*	*UL*	*d*
Mother-Daughter	74.51	12.52	71.40	16.63	1.61	.10	-6.8	.67	.25
Connectedness	36.35	6.64	34.20	6.50	2.26	.02	-4.01	-.28	.16
Interdependence	12.80	2.49	11.67	2.58	3.18	.00	-.42	-1.8	.22
Trust in Hierarchy	25.19	4.55	24.70	8.43	.61	.53	-1.8	-.42	.27
Satisfaction	4.42	.71	4.21	.922	1.86	.06	-.41	.01	.13
Closeness	6.76	1.35	6.21	1.83	2.68	.00	-.93	-.13	.11
Interaction	6.14	1.25	5.95	1.45	1.04	.29	-.56	.17	.20
Communication	44.70	6.32	5.83	.71	.48	.63	1.97	11.9	.14

Note. CI = confidence *i*nterval; *LL* = lower limit; *UL* = upper limit.

Results in Table 5 reveal significant differences in two groups, it shows that girls with educated mothers score high on connectedness, interdependency, and closeness than the girls whose mothers who are non-educated. However, low Cohen's *d* indicates weak effect size.

Correlation of Demographic Variables With Mother-Daughter Relationship

The results in the Table 6 show the correlation of demographic variables (age, age of onset of menstruation, birth order, length of menstrual days, gap between the cycle, and experience shared with) with mother-daughter relationship.

Table 6

Correlation among Mother-Daughter Relationship and Demographic Variables (N = 317)

	MAD	CONN	INT	TIH	Close	Comm	Interact	Satisf.
Age	-.12*	-.07	-.11*	-.16**	-.12*	-.00	.09	.05
Age of Onset	.13*	.08	.08	.18**	.05	-.05	.00	.17**
Birth Order	-.04	-.03	-.05	-.03	.02	.00	-.12*	-.16**
Length cycle	-.03	-.07	-.02	-.02	.04	.07	.14*	.06
Gap in Cycle	-.09	-.09	.01	.12*	.03	.03	.02	.03
BMI	-.04	.00	.00	-.09	.00	.06	.05	.04
Shared with (Mother)	.19**	.19**	.19**	.12**	.11**	-.02	.16**	.13**
Prior Knowledge	.12*	-.05	.12*	.11*	-.04	-.04	.03	-.03
Informed (Mother)	.20**	.21**	.12*	.13*	23**	-.05	.01	.17**
Fear	.05	.04	-.00	.04	.03	.05	-.04	-.04
Anxiety	-.07	.06	-.00	.07	-.08	-.08	-.16**	.01
Worry	-.03	-.02	-.01	.02	-.06	-.01	-.04	.05

Note. MAD = Mother-Adult Daughter Scale; CONN = Connectedness; INT = Interdependency; TIH = Trust in Hierarchy; Close = Closeness; Comm = Communication; Interac = Interaction; Satisf = Satisfaction; BMI = Body Mass Index. $^{*}p < .05$. $^{**}p < .01$.

The results in the Table 6 show that age is negatively correlated with mother-daughter relationship, including interdependency, trust in hierarchy, and closeness with mothers. Interdependency, trusting mother, and closeness with mother gets weaker as age increases. Rest of the results are nonsignificant along age. Age of onset of menarche is positively correlated with mother-daughter relationship including along domains of Trust in Hierarchy and Satisfaction in relationship; more age at the time of onset of menarche better is perceived relationship with mothers including the mentioned domains. Birth order is negatively correlated with interaction and satisfaction only. Youngest in sibling has less interaction and satisfaction in relationship with mother. Length of menstrual cycle is only negatively significant ($p < .05$) with interaction between mother-daughter relationships. Gap between menstrual cycles is negatively correlated with Trust in Hierarchy ($p < .05$). The Body Mass Index has nonsignificant relationship. The experience of onset of menarche shared with mother is positively significantly correlated ($p < .01$) with mother-daughter relationship and its subscales, which means that girls who share the news of their onset of menarche with mother are more satisfied with

their mother, connected and dependent and feeling close relationship with their mothers. Prior knowledge is significantly correlated with total score on mother-daughter relationship, Interdependency and trust in Hierarchy.

Eating Practices during Menstruation

To see the extent to which girls alter their diet and water intake during menstruation, the frequencies and percentages were computed. Results show frequency and percentage of responses in respective domains.

Table 7

Frequency and Percentages along Eating Practices related to Menstruation (N = 317)

Responses	*f(%)*	Responses	*f (%)*
Diet should be altered	223(70.3)	Restrict water Intake	180(56.8)
Crave sweet/sour	135(49.2)	Why restrict Water Intake	
Preferred Cold Food	99(31.2)	Increases the flow	52(16.2)
Preferred Hot Food	257(81.1)	Decreases pain	25(7.9)
Who told to alter diet		It leads to aches	46(14.5)
Mother	157(49)	It stops the flow	12(3.8)
Friend	71(22.4)	Causes swelling	36(11.4)
Others	25(14.5)	Decreases urination	62(19.6)
Why alter Diet		Others	115(77)
Increases the flow	70(22.1)	Told to restrict Water Intake	
Decreases the flow	95(30)	Mother	92(39)
Pain in abdomen	112(35.3)	Elders	21(6.6)
I don't alter	38(12.7)	Friend	67(21.1)
How diet is Altered		Others	19(10)
Eat Less	98(30.9)		
Eat more	91(28.7)		
Eat same amount	113(35.6)		
Others (I don't)	10(3.2)		

Note. Frequency and percentages reflect multiple responses, hence aggregate may exceed $N = 317$.

Table 7 shows that almost (70%) girls alter their diet during menstruation and most of the times their mother tells them to alter their diet. In the "others" category, it is reported that girls alter their diet due to the restrictions imposed by their grandmothers (15%); 5% reported that their neighbours told them to alter the diet; while, 5% reported that their own experience taught them to alter the diet during

menstruation to avoid pain and help the flow. Table 7 shows that 56% girls also restrict water intake during menstruation and most of the times their mothers 29% and friends (21%) ask them to restrict their water intake. In the "others" category, girls reported that 17% girls are restricted by their grandmothers, 2% reported that the literature and their own knowledge restricts them to alter the water intake during menstruation. Majority of the girls believe that diet should be altered as it increases the flow, while, some of the girls believe that it decreases the flow.

Highest percentage of women alters their diet during menstruation as well as restrict their water intake. Many women alter their diets and water intake due to the restrictions imposed by mothers and friends. Majority of the girls reported to have experienced food cravings. The reason behind restricting their diet is that it decreases the menstrual flow as well as urination, which later leads to constipation and other problems. In the section of "others", almost 4% reported that restricting water intake saves them from the hassle of going to the bathroom, while, 3% said that it saves them from changing the pad again and again as it decreases urination, this shows lack of awareness and poor practices among girls. About 30% of the girls start eating less during menstruation that reflects in disordered eating behaviours. It also shows that most women prefer having hot foods which include tea, coffee, special tea and high protein diet (chicken, eggs, meat and mutton) as compared to cold foods which include yoghurt and cold beverages. Majority of the girls report avoiding cold foods during menstruation and prefer to take hot food that helps in the flow of the blood. Around one third (35%) of the girls reported that they should eat the same amount of food during menstruation, while 30% start eating less during periods.

Differences along Use of Sanitary Napkins

To study the role of use of napkins on study variables scales and subscales, *t*-test was done, only two groups were made group 3 that was of the girls who use both sanitary napkins consisted of 24 girls, hence, they were not considered in analysis. Group 1 consisted of those who use only readymade napkins, while Group 2 consisted of the girls who use homemade napkins.

Table 8

Independent Sample t-test for the Groups based on Use of Napkins on Studied Variables (N = 317)

Variable	Readymade Napkin (*n* = 108)		Homemade Napkins (*n* = 83)				95% CI		Cohen's
	M	*SD*	*M*	*SD*	*t*(315)	*p*	*LL*	*UL*	*d*
Mother-Daughter	74.48	12.76	72.75	15.05	1.01	.05	-1.64	5.10	.16
Connectedness	36.43	6.69	34.78	6.32	1.94	.05	-.01	3.30	.25
Interdependence	12.70	2.56	12.31	2.49	1.18	.23	.25	1.2	.28
Trust in Hierarchy	25.16	4.66	25.05	7.32	.15	.01	1.27	1.49	.22
Pre-Men	1.78	.20	1.76	.15	.49	.03	-.03	.06	.13
Peri-Men	1.61	.22	1.6	.23	.50	.61	-.04	.07	.11
Post-Men	1.94	.08	1.92	.10	2.3	.01	.00	.04	.20

Note. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Table 8 shows that there is significant difference on MAD and its entire subscales except for interdependency across the use of napkins during menstruation. Girls who use readymade napkins score higher on MAD and its entire subscales than the girls who use homemade napkins. The value of the *p* was significant ($p < .05$) on the scale of Pre and post-menstrual symptoms as well. It shows that girls who use readymade napkins experience before and after menstrual symptoms more as compared to the ones who use homemade napkins.

Discussion

The present study was specifically aimed to explore the role of mother-daughter relationship in knowledge/awareness and different practices during menstruation among female students. For this logistic regression analysis was carried out to see predictive role of mother-daughter relationship in predicting various practices during menstruation period; restrictions imposed on bathing, washing perineum, religious activities, food intake, mobility etc. Beside this, correlation analysis was done to study relationship of mother-daughter relation with experiences during, before, and after menstruation and also its link with changes experienced in appetite, sleep, energy, and food intake during menstruation and with demographic variables was also studied. Moreover, prevalent practices during menstruation in reference to religious activities, food intake, mobility, hygiene, and managing menstruation were also studied.

Alpha reliability coefficients of the measures showed satisfactory level of internal consistency, while, the value in the skewness and kurtosis between ±1 showed that data is normally distributed. This shows that nature of mother-daughter relationship and symptoms experienced during menstruation are a phenomenon that are normally distributed across current sample. Hence, decision was taken to use parametric tests for analyses (Field, 2009). Descriptive statistics reflected that girls felt connected to their mothers, felt interdependency, and trusted their mothers. That supports the first hypothesis that the girls experiencing more changes (energy, sleep, appetite, and activity level) during menstruation have more communication with their mothers (see Table 3). This may be because as most of the mothers are not very educated and endorse menstrual taboos themselves, hence they pass on the same knowledge to their daughters (Tucker, 1990). Research supports this evidence that a gap exists between the information that the daughters need and what they actually receive from their mothers. Many a times, mothers induce their own feelings, anxieties, and experiences related to menstruation in their daughters, that may be the reason that girls anticipate those changes during and after menstruation as communicated by mothers. Findings in Table 4 also confirm in the line of past research that mothers are source of knowledge about menstruation for having prior knowledge about menstruation (Aflaq & Jami, 2012) which reflects that mother-daughter relationship is good.

Second hypothesis was that mothers impose restrictions on daughters during menstriation menstruation regarding water and food intake; hygiene and management of menstruation; mobility and religious practices. This study only confirmed that better mother-daughter relationship leads to less water intake during menstruation (see Table 4). Girls alter their diet and restrict water as demanded by their mothers to practice these patterns during menstruation. It is communicated to girls in our culture that more water intake may affect blood flow and cause swelling of uterus/abdomen. Hence, findings reflect that being in good trusted relation and more communication, food intake during menstruation gets effected.

The Centre for Social Research, Russia in 1990, has reported restrictions in daily routine exercises amid monthly cycle, for example, girls are not permitted to take bath, change garments, brush hair, and enter holy places. Aside from these, certain diet related restriction (forbidden on utilization of nourishment like rice, curd, milk, lassi, potato, onion, sugarcane, and so forth.) amid the menstrual period are also forced most of the times by the mothers (see Mehra, 1995). In the present study, the girls restrained taking bath during

menstruation as well as from indulging in religious practices, however, level and nature of mother-daughter relationship does not predict these practices. This may be because of cultural practices in general that girls come to know during their social interaction process. Girls also reported that they restricted water intake to decrease and limit urination, which caused inconvenience during periods.

Avoiding social mobility was observed by the participants, however, relationship with mother was not found to be predictor for that. During menstruation physical, socio-cultural, and economic challenges interfere with a young woman's ability to attend school or to participate fully in classroom activity, hence, these may affect the mobility of the girls (Kirk & Sommer, 2006) than restrictions imposed by mothers. A study (Ali & Rizvi, 2010) done in Karachi found that women view themselves as unclean during monthly cycle and were restricted by their elders and mostly by their mothers from going to trips, taking bath, and healthy intake of food (with the conviction that certain foods would either make them sick in the present or in future). In current study too, girls alter their eating and mobility pattern that may be because of mothers, however, nature of relationship with mothers in terms of interdependency, communication, trust, connectedness, etc. has no role in this.

The present study showed that girls were unaware of the importance of the foods that are high in iron. Likewise, Bengali females who also modified their dietary practices and were confined from eating meat, eggs, fish, and green vegetables were equally unaware (Mathews, 1995). Majority of the girls were limited by their relatives and mothers from eating hot foods like eggs and meat and chilly food (Ali & Rizvi, 2010). The sample of the present study reported that the girls prefer hot food over cold during menstruation, as they believe that blood flow gets affected by the nature of food intake. Nevertheless, mother-daughter relationship, however, did not play any role in this. These practices, however, are troublesome from both a well-being and cleanliness perspective. Iron deficiency anaemia has thus been reported as a major health concern amongst female adolescents (Stein, Murray, & Copper, 1996).

Third hypothesis was that mothers who are educated have a better relationship with their daughters than the ones who are not educated (See Table 5). This hypothesis is supported by research findings in domains of connectedness, interdependency, satisfaction, and closeness. This may be because educated mothers communicate stimulate a child's brain development, for example, by reading to children and sharing their experiences with them, especially, with daughters educated and working mother tend to be more open and

friendly about the life experiences (Freeman, Rickels, Sondheimer, & Polansky, 1990). The importance of mother's education on sexual knowledge is very important and can never be undermined since an educated woman will be more open and would freely talk to her daughter about the different aspects of her sexuality (Pham et al., 2012).

Fourth hypothesis was that as age of the daughter increases the mother-daughter relationship gets strengthened, this hypothesis got rejected (See Table 6) as negative relationship between age and mother-daughter relationship is observed. Previous findings also support these findings that mother-daughter relationship shifts from time to time. In childhood mother is the primary role model for the daughter, as same gender parents play important role in socialization of children. At the time of adolescence, it may start declining as the children develop logical thinking and start exploring information at their own. Peers become important and they move out from parental domain. They start perceiving parents as controlling and nagging (Helgeson, 2012). As girls get older they may get into some relationship that may further reduce strength in mother-daughter relation (Bojczyk, Lehan, McWey, VesseyMelson, & Kaufman, 2011). The mother-daughter relationship depends on the age of the daughter as well, in adolescence mostly this relationship gets weaker, but it gets strengthened at the time when a girl herself becomes a mother (Rossi, 1990). This means that age may have a curvilinear relationship with mother-daughter relationship than linear. That could be the reason of this hypothesis being rejected as the sample of the study was based upon young female adults.

Fifth hypothesis was that girls during menstruation prefer taking hot food as compared to cold foods. This hypothesis got approved (See Table 7). Majority of the participants reported to prefer taking hot foods over cold foods during menstruation. Research shows that adolescents and their mothers believed that foods which are thought to have hot effect and are usually taken in cold seasons (dry natural products, liver, and eggs) should be taken excessively while cold (desserts, yogurt, and green vegetables) ought to be abstained from during periods (Stein et al., 1996). That may be due to the reason as reported in one of the questions that altering the diet is important because if the girls do not alter the diet then it increases pain in the abdomen or increases weight or effect blood flow.

Sixth hypothesis was that girls who use ready-made napkins experience less changes in appetite, sleep, energy, and food intake during menstruation and have less menstrual symptoms as compared to those who use homemade napkins. This hypothesis got confirmed

(Table 8); findings revealed differences among two groups with respect to the use of napkins. It showed that girls who use home-made napkins experience more pre and post menstrual symptoms as compared to those who use sanitary napkins. This may be due to the infections that may have been caused by using home-made pads. Research suggests (Ali & Rizvi, 2010) that use of homemade pads is not an unhygienic practice, but rather the way that women use it, is unhygienic. Common practices and beliefs are like cloth in sunlight after one has washed them. In the present study research too (see Mathews, 1995), 57% of the girls experienced white fluid discharge, foul smell, and post-menstrual symptoms may be because of using home-made pads or related unhygienic practices.

Conclusion

Based on findings of the current study, it is concluded that overall lack of knowledge and awareness related to menstruation among female participants existed. Girls prefer taking hot foods during menstruation. The mother-daughter relationship is a predictive factor for girls' prior knowledge related to menstruation and water intake during menstruation. Strength in mother-daughter relationship decreases with age of the participants. Mother-daughter relationship increases the symptoms and changes experienced during menstruation. Educated mothers have a better relationship and communication with their daughters as compared to less educated mothers.

Implications

Despite of the fact that the sample was from Islamabad, still there are certain practices that are too conventional, based on misconceptions and unhygienic ways. Mother is the main source in imparting knowledge and promoting practices related to menstruation, if the message is not conveyed properly about menstruation; girls are often ashamed of this experience being a taboo or practice unhygienic ways of dealing with menstruation (Mathews, 1995). Hence increased knowledge/awareness and management may instill a positive attitude and management of menstruation among female students. Awareness programs should be targeted for mothers to impart proper scientific knowledge regarding menstruation, so that mother could convey better and knowledge based menstruation related practices to their daughters during socialization process. Myths about menstruation needs to be studied, so that by challenging them better practices related to menstruation can be enforced for better reproductive health of women.

Limitations and Suggestions

Following are a few limitations of the current study; however, recommendations are proposed for future research to address these limitations.

Data was cross-sectional. As nature of mother-daughter relationship may vary with age, therefore, longitudinal study can be planned to study its impact on menstruation related practices in female youth. Sample size and age of sample was much restricted which challenges the external validity of the findings. In future, larger data and much diverse sample can be recruited. Mother and Adult Daughter Questionnaire used in the study was not translated and validated in the present study; this may have affected the findings in indigenous context. In future, some measure in indigenous context may be developed to have more culturally based findings or confirmatory factor analysis could be run to confirm existing factor structure. Practices Misconceptions and Management amongst Adolescent Girls (Ali & Rizvi, 2010) was modified with permission of original authors and scoring categories were defined to achieve objectives of the current study. However, this measure needs to be carefully validated and translated in future research.

References

Aflaq, F., & Jami, H. (2012). Experiences and attitudes related to menstruation among female students. *Pakistan Journal of Psychological Research, 27*(2), 22-34.

Ali, T. S., & Rizvi, S. N. (2010). Menstrual knowledge and practices of female adolescents in urban Karachi, Pakistan. *Journal of Adolescence, 33*(4), 531-541.

Blumberg, S. J., Foster, E. B., Frasier, A. M., Satorius, J., Skalland, B. J., Nysse-Carris, K. L., & O'Connor, K. S. (2012). *Design and operation of the national survey of children's health*. National Centre for Health Statistics. Retrieved from https://pdfs.semanticscholar.org/2810/0849f76eca44b 8685af6cb2ce6709c3b30eb.pdf

Bojczyk, K. E., Lehan, T. J., McWey, L. M.., Vessey Melson, G. F., & Kaufman, D. R. (2011). Mothers' and their adult daughters' perceptions of their relationship. *Journal of Family Issues, 32*(4), 452-481.

Cooley, H. M., Stankovich, J., & Jones, G. (2003).The association between hormonal and reproductive factors and hand osteoarthritis. *Maturitas, 45*(4), 257-265.

Costos, D., Ackerman, R., & Paradis, L. (2002). Recollections of menarche: Communication between mothers and daughters regarding menstruation. *Sex Roles*, *46*(1-2), 49-59.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Sage Publications.

Freeman, E., Rickels, K., Sondheimer, S. J., & Polansky, M. (1990). Ineffectiveness of progesterone suppository treatment for premenstrual syndrome. *Jama*, *264*(3), 349-353.

Helgeson, V. S. (2012). *The psychology of gender* (4th ed.). Boston: Pearson.

Kichler, J. C., & Crowther, J. H. (2008). Young girls' eating attitudes and body image dissatisfaction: Associations with communication and modelling. *The Journal of Early Adolescence*, *29*(2), 212-232.

Kirk, J., & Sommer, M. (2006). Menstruation and body awareness: Linking girls' health with girls' education. *Royal Tropical Institute (KIT), Special on Gender and Health*, 1-22.

Mathews, A. (1995). Menstruation issues in Bangladesh. *Footsteps*, *24*, 2-3.

Mehra, S. (Ed.; 1995). *Adolescent girl: An Indian perspective*. MAMTA Health Institute for Mother and Child.

Moawed, S. (2001). Indigenous practices of Saudi girls in Riyadh during their menstrual period. Retrieved from http://www.who.int/iris/handle/10665/119008

Pham, T. M., Fujino, Y., Mikami, H., Okamoto, N., Hoshiyama, Y., Tamakoshi, A., & Yoshimura, T. (2009). Reproductive and menstrual factors and thyroid cancer among Japanese women: The Japan collaborative cohort study. *Journal of Women's Health, 18*(3), 331-335.

Rastogi, M. (2002). The Mother-Adult Daughter Questionnaire (MAD): Developing a culturally sensitive instrument. *The Family Journal*, *10*(2), 145-155.

Rembeck, G. I., Möller, M., & Gunnarsson, R. K. (2006). Attitudes and feelings towards menstruation and womanhood in girls at menarche. *Journal of Paediatrics, 95(*6), 707-714.

Rossi, P. H. (1990). *Of human bonding: Parent-child relations across the life course*. Piscataway: Transaction Publishers.

Sommer, M. (2012). Menstrual hygiene management in humanitarian emergencies: Gaps and recommendations. *Waterlines*, *31*(1-2), 83-104.

Stein, A., Murray, L., & Cooper, P. (1996). Infant growth in the context of maternal eating and maternal depression: A comparative study. *Psychological Medicine, 26*, 569

Thakre, S. B., Thakre, S. S., Reddy, M., Rathi, N., Pathak, K., & Ughade, S. (2011). Menstrual hygiene: Knowledge and practice among adolescent school girls of Saoner, Nagpur district. *Journal of Clinical and Diagnostic Research*, *5*(5), 1027-1033.

Tucker, S. K. (1990). Adolescent patterns of communication about the menstrual cycle, sex, and contraception. *Journal of Pediatric Nursing*, *5*(6), 393-400.

Wicks-Nelson, R, & Israel, A. C. (2006). *Behavioral disorders of childhood* (6th ed.). Pearson.

Wertheim, E. H. (2002). Parent influences in the transmission of eating and weight related values and behaviors. *Eating Disorders*, *10*(4), 321-334.

Zayas, L. H., Bright, C. L., Alvarez-Sanchez, T., & Cabassa, L. J. (2009). Acculturation, familism, and mother-daughter relations among suicidal and non-suicidal adolescent Latinas. *The Journal of Primary Prevention*, *30*(4), 351-369.

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