

Attitude Towards Menstruation, Social Adjustment, and Mood States During Menstruation Among Young Women

Afsheen Anjum and Humaira Jami

Quaid-i-Azam University

The present study was aimed to explore the relationship between attitude, social adjustment, and mood states related to menstruation among female students. Sample comprised of 317 girls (age range 18 to 26 years) taken from different colleges and universities of Islamabad and Rawalpindi. Attitude towards Menstruation Scale (Aflaq & Jami, 2012), Social Adjustment Scale (Weissman & Paykel, 1974), and Mood States Scale (Terry, Lane, Lane, & Keohane, 1999) were used to measure variables of the study for which satisfactory alpha reliabilities were achieved. Findings based on correlation confirmed the assumption that social adjustment during menstruation had significant positive relationship with attitude towards menstruation and significant negative relationship with mood states that is poor mood during menstruation is related to poor adjustment. Mood states were also significant negative correlation with attitude towards menstruation that is better attitude is linked with better mood states during menstruation. Mediation analysis indicated that attitude towards menstruation was a significant predictor of social adjustment, while, mood state acted as a mediator between this relationship. Based upon findings, in future intervention plans focusing at attitude and mood states related to menstruation to enhance social adjustment during this phase can be designed.

Keywords: Menstruation, menarche, mood states, social adjustment, attitudes

Menstruation is the monthly cycle that may take place after every 28 days in women and pubescent girls involving shedding of the uterus lining through the vagina. The lining made up of tissue and blood develops monthly to nourish a fertilized egg. In the absence of fertilized egg, the lining is shed off from the uterus. This process may

Afsheen Anjum, and Humaira Jami, National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.

Correspondence concerning this article should be addressed to Afsheen Anjum, National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan. Email: afsheekashmiri@gmail.com

last between two to seven days. It may occur before 12 years of age and may take years before a this cycle becomes regular (Carlson et al., 2009). Menstruation is one of the most important stage in a women's life as it signifies puberty and beginning of adulthood, and signals about the possibility of fertility (Khan, 2010) and an indication of developing sexuality in a girl (Ali, Ali, Waheed, & Memon, 2006). Genetic and environmental factors, especially nutritional status, influence timing of menarche. This is far more a complicated process involving biological, psychological, and behavioral changes (Khan, 2010).

World-over, menstruation is a taboo subject and often perceived with stigma, especially in low socioeconomic residents of Karachi, Pakistan (Ali et al., 2006). This stigma is built upon traditional beliefs that menstruating women are impure and prevailing reluctance to discuss it as any normal phenomenon in society. Therefore, adolescents feel inhibited to share their related experience and consider menstruation as something to be ashamed of. Such constraints leads to menstrual unhygienic condition that can cause infections of urinary tract, pelvic and vaginal; and ultimately, emerging shame lead to lowering of the girls' self-esteem (Oche, Umar, Gana, & Ango, 2012; Rizvi & Ali, 2016).

Attitude depicts relatively stable organization of beliefs, feelings, and behavioral tendencies towards social objects, people, events, etc. (Vaughan & Hogg, 2005). Attitude towards menstruation can be mixed, positive or negative feelings across cultures (Amaral, Hardy, Hebling, & Faundes, 2005) that is associated with experiencing menstrual symptoms like pain of some kind (Rhudy & Bartley, 2010), change in sexual desire (Gangestad, Thornhill, & Garver, 2002), and olfactory sensitivity (Farage, Osborn, & MacLean, 2008). Negative views are reflected by the beliefs about menstrual blood as unclean and causing impurity, need to maintain secrecy about menstruation and by physical discomfort associated with it. Contrarily, positive views includes that it rejuvenates the body, clears impurities, and is indicative of fertility (Britton, 1996).

Lack of knowledge about menstruation may lead to perceiving it wrongly or negatively that lead to negative or neutral attitude towards menstruation. While, adequate and accurate knowledge may lead to correct or right perception about menstruation and positive attitude towards it (Adewuyi & Akinade, 2010; Rana & Jami, in press). Menstruation represents the girl's entrance to womanhood; therefore, her family may impose strict rules on her social behavior. At the same time, it may bring into positive changes in the social role of the Pakistani women. Such conflicting messages are expressed by display

of negativity and the development of menstrual disorders (Springer, Abbott, & Reisbig, 2009).

Moods are emotional states and feelings/affects that are less specific, intense, and likely to be triggered by a particular situation or event. These can be with positive or negative valence, that is, people generally talk about being in a good mood or a bad mood (Clark, 2005). Some of the mood states which have been linked with women's cycle and mostly experienced during menstruation are fatigue, tension, and/or irritability (Davydov, Shapiro, Goldstein, & Chicz-DeMet, 2005), depression (Harlow, Wise, Otto, Soares, & Cohen, 2003), and anxiety and hostility (Davydov, Shapiro, & Goldstein, 2004). These mood states may effect adjustment during menstrual cycle.

Social adjustment reflects reciprocal interaction between the individual and the social environment. Weissman and Paykel (1974) explained five major areas of social functioning including, work, home, social and leisure activities, relationships with extended family, marital relationship, and in role of parents. Awareness about menstruation also influences social adjustment among females. It was found (Munday, Keshwani, Mudey, & Goyal, 2010) that a large portion of the women utilized piece of cloth to manage menstruation and reused that cloth after washing it with soap or water and (see also Maji, 2016), some disposed off the material by blazing it after using them for 4 - 5 months. Very few women use clean napkins accessible in the market; conceivably because of low financial status, less accessibility at provincial regions, and lack of awareness and due to this the girls get physically effected and less socially adjusted (Oche et al., 2012; Rizvi & Ali, 2016).

Naeem, Klawitter, and Aziz (2015) conducted a study through UNICEF and adopted a conceptual framework menstrual hygiene management (MHM) in 2013-14. Qualitative research gave an in-depth understanding of girls' needs and their preferences to address MHM-related issues. Simple and focused interventions for developing and strengthening mechanism for distribution of MHM supplies and better washing facilities were designed and executed. Six weeks after the implementation of these interventions showed significant improvement in MHM conditions in girls' schools. Girls and teachers applauded this initiative that was indicator of future sustainability.

This shows that facilities at school effect girls' school attendance during their menstrual periods. The availability and privacy of toilets in schools determine whether female students can manage their menstruation cycle hygienically including changing their sanitary napkins and washing during the school day. While, the absence of a

sense of privacy and safety in schools with respect to toilet condition may promote anxiety among girls that their condition will become visible to other students in school (Sommer, 2010), hence, affect them socially.

Cognitive consistency theories emphasize the cognitive component of attitudes as building blocks of an attitude. One tries to ensure consistency in cognitions (Brown, 2006). Menstruation may affect cognitions, that is, a belief about its significance in women's reproductive life may clash with existing cultural beliefs of being unclean and experiencing pain. This may lead to cognitive dissonance causing anxiety that may affect social adjustment during menstruation. So theory explains that if attitudes are positive, mood states may get positive, and this may enhance socially adjustment.

One study demonstrated that the mood fluctuation during menstruation has a significant role in the well-being of women. This normal/regular reproductive cycle is accompanied with physiological, psychological, and behavioral changes that repeatedly occur every month. These changes that may remit within a short span of the time after onset of menses, but cause distress and significantly impair everyday functioning in interpersonal, social, and occupational domains (Gonda et al., 2008).

Findings of a study showed that those girls having difficult menstrual experiences (e.g., severe pain) had negative attitude and low mood states. Such girls are more likely to experience absenteeism and concentration and attention related problems in their studies and in their professional life because of menstruation. Source of information is very important in this regard, and girls who have their mother as a source of information regarding menstruation had more positive attitude towards menstruation as compared to those having others (sisters, friends, relatives, and media) as source of information (Aflaq & Jami, 2012). Nevertheless, research also shows that women who have more liberal attitude towards menstruation experience less psychological stresses and menstrual difficulties (Rice, 1991).

The main objective of the present study is to find out the relationship between attitudes, social adjustment, and mood states related to menstruation. Aforementioned literature reveals that menstruation is stigmatized and is considered as a taboo, which inhibits girls to discuss the issues and experiences related to this. Girls avoid going to college or universities during this phase and maximum absenteeism occurs. Therefore, impact of their experiences in emotional and social functioning goes unattended that needs special attention for better reproductive health of female segment of the

population. Past studies suggested that menstruation is related to high suicide and accident rates, employment and school absentee rates, poor academic performance and acute psychiatric problems (Afridi, Tabassum, Aman, Tabassum, & Durrani, 2005; Yang et al., 2012). Therefore, present study is aimed to demonstrate the burden of menstruation and may provide awareness to the people, hence, that may help to address sufferings during menstruation and their impact on family, academic settings, and social relationships.

The objectives of the present study were to examine the relationship between attitudes, social adjustment, and mood states related to menstruation among young women and to determine predictive role of attitude towards menstruation in social adjustment and mood states during menstruation.

Hypotheses

Based on past literature it is assumed that:

1. Attitude towards menstruation is positively associated with social adjustment during menstruation.
2. Attitude towards menstruation is positively related with mood states during menstruation.
3. Mood states mediate between attitude towards menstruation and social adjustment during menstruation.

Method

Sample

Girls ($N = 317$) from Quaid-i-Azam University and International Islamic University experiencing menstruation were selected. Age range was 20-27 years ($M = 22.21$, $SD = 1.74$). Students were studying in bachelors and masters programs.

Measures

Following measures were used to study variable of the study.

Attitude towards Menstruation Scale (AMS). This measure developed McHugh and Wasser in 1959 (as cited in Shaw & Wright, 1967) and adapted by Aflaq and Jami (2012) was used in the study to measure attitudes toward menstruation. It comprised of 35 items, out

of which 22 were reverse scored. The items were rated on a 5-point scale and response categories were from *Strongly agree* to *Strongly disagree*. High score represented positive attitude towards menstruation. Score range could be 35-135. Total time required for the administration of this scale was 10-15 minutes.

Social Adjustment Scale. It was developed by Weismann and Paykel (1947). English version of scale was used. The original scale comprised of 54 items, but only 24 items were used in this research, as rest of the items were related to one's role in marital relationship and being parent that were not applicable to the young girls. Four-subcales of Social Adjustment Scale used were adjustment related to Academic Settings, Home Settings, Social and Leisure Activities, and Extended Family. The scale was 5-point Likert type. The possible score range was 23-121. High score on each domain showed good adjustment and low score showed maladjustment in respective domains. In present study, Social Adjustment Scale was modified according to menstruation. The instructions were modified and participants were asked to report their adjustment "during menstruation" at end of all items.

Profile of Mood States-Adolescents (POMS-A). This scale was developed by Terry, Lane, Lane, and Keohane (1999). English version of scale was used. It consisted of 24 items assessing six dimensions of the mood namely: Anger, Confusion, Depression, Fatigue, Tension, and Vigour. It was a Likert-type scale in which high score indicated bad mood and low scores indicated good moods. In present study, measure was modified according to menstruation. The instructions were modified and participants were asked to report their moods "during menstruation".

Procedure

Participants were approached in classroom setting; their written consent for volunteer participation was sought. They were informed about the objective of the study and its potential significance. Participants were given the questionnaire and were requested to answer the items honestly and appropriately. They were assured about confidentiality and anonymity of the data and that given information would be used for research purpose only that was required for the partial fulfillment of degree. Participants took 20-25 minutes to complete questionnaires. Finally, participants were acknowledged for their cooperation.

Results

The aim of the study was to explore relationship between attitude towards menstruation, social adjustment, and mood states during menstruation among female students. The internal consistency of measures was determined through Cronbach’s alpha reliability coefficient for the present sample. Pearson Product Moment Correlation was used to determine the relationship between variables of the study, while, multiple regression analysis was used to study mediation role of mood states for attitudes towards menstruation in prediction social adjustment.

Descriptive Statistics and Alpha Reliability Coefficient of Measures

In order to examine the descriptive statistics to ascertain normal distribution of data on measures, mean, standard deviation, skewness, and kurtosis were computed. Table 1 shows the reliability coefficients and descriptive of all scales.

Table 1

Descriptive Statistics and Alpha Reliability Coefficient of Social Adjustment Scale, Attitude towards Menstruation, and Profile of Mood States-Adolescents (N=317)

Scale	items	α	M (SD)	Range		Skewness	Kurtosis
				Actual	Potential		
SAS	28	.81	103.21(13.17)	60-132	28-140	-.53	.14
AS	6	.50	22.40 (3.58)	12-30	6-30	-.59	.47
HM	6	.57	21.32 (4.01)	6-30	6-30	-.28	.18
SLA	9	.65	31.41 (5.45)	15-44	9-45	-.48	-.11
SEF	7	.72	28.06 (4.75)	13-35	7-35	-.85	.46
POMS-A	24	.91	38.39 (17.70)	24-96	6-105	.31	-.43
ATMS	35	.85	113.13(15.06)	66-157	35-175	-.00	.06

Note. SAS = Social Adjustment Scale; AS = Academic Setting; HM = Home Setting; SLA= Social and Leisure Activities; SEF = Extended Family; MS= Profile of Mood States-Adolescents; ATMS = Attitude towards Menstruation Scale.

Table 1 reveals that Cronbach’s alpha reliability range from .50 to .91 for Academic Setting and Profile of Mood States-Adolescents, respectively. Alpha reliabilities of the measures lie in the acceptable range, while, subscale of Academic setting and Home Setting has low

reliability. Generally, better adjustment in all domains is reflected based on mean and so is better attitudes, and mood states are also reflect better mood. Skewness and kurtosis lie in acceptable range ± 1 , hence, reflecting normal distribution of data.

Correlation between Attitude towards Menstruation, Mood State, and Social Adjustment

Pearson Product Moment Correlation was used to determine the relationship between variables of the study.

Table 2

Correlation Matrix of Social Adjustment, its Subscales, Mood states and Attitude (N = 317)

S.No	Variables	1	2	3	4	5	6	7
1	Social adjustment	-	.68**	.66**	.78**	.79**	-.43**	.20**
2	Academic setting		-	.38**	.34**	.43**	-.28**	.13*
3	Home setting			-	.31**	.33**	-.29**	.16**
4	Social and leisure activities				-	.50**	-.36**	.11
5	Extended family					-	-.32**	.18**
6	Mood states						-	-.51**
7	Attitude towards menstruation							-

Note. Grey highlights show total to subscale correlations and inter-subscale correlations.

* $p < .05$. ** $p < .01$.

Table 2 represents the correlation among social adjustment its subscales, mood states, and attitude. Social adjustment is significantly correlated with its subscales, which reflects construct validity of the Social Adjustment Scale. Table 2 shows that social adjustment is significantly negatively related with mood states during menstruation, it explains that as mood states become positive, social adjustment also increases during menstruation and vice versa. In mood states, high score means bad moods and low score means good mood states. All domains of social adjustment including overall score are significantly positively correlated with attitude towards menstruation, except social and leisure activities, which does not show any significant relationship. As the attitude towards menstruation is more positive there is high social adjustment among girls during menstruation or vice versa. Table 2 also reveals that there is significant negative

relationship between mood states and attitude towards menstruation. High score on the measure of mood states shows more negative mood. Hence, findings show that as negative mood states decreases attitude towards menstruation becomes positive or vice versa. Hence, hypotheses 1 and 2 are confirmed.

Attitude towards Menstruation as Predictor

Linear regression analysis was done to check the attitude towards menstruation as a predictor in mood states and social adjustment along its subscales.

Table 3

Simple Linear Regression Analysis for Attitude towards Menstruation Predicting Mood States, Social Adjustment and Its Subscale (N = 317)

DV's	Attitude toward Menstruation					
	R	R ²	F	B	β	S.E.
Mood states	.51	.26	115.13***	-.60**	-.51**	.05
Social Adjustment	.20	.04	13.12***	.17**	.20**	.04
Academic Setting	.13	.01	5.77*	.03*	.13*	.013
Home Setting	.16	.02	8.80**	.04**	.16**	.01
Social and Leisure	.11	.01	3.86*	.04	.11	.02
Extended Family	.18	.03	11.44**	.05**	.18**	.01

*p < .05. **p < .01. ***p < .001.

Results of linear regression in Table 3 illustrates that attitude is significantly predicting mood states, social adjustment, and its domains. Table shows that if attitude towards menstruation is positive mood states also get better as high score on mood states show bad mood, hence, reflected through negative sign. Attitude contributes 26% of variance in mood states. Attitude towards menstruation also significantly predicts social adjustment during menstruation along all domains except leisure and social activities. It holds maximum variance that is 3% in for extended family related social adjustment among all domains. Overall Table 3 illustrates that attitude plays a significant predicting role in mood states, social adjustment, and its domains.

Mediation of Mood State in the relationship between Attitude toward Menstruation and Social Adjustment

Role of mood states as a mediator between attitude towards menstruation and social adjustment was explored through multiple regression analysis using hierarchical method.

Table 4

Mediating Effect of Mood States between Attitude towards Menstruation and Social Adjustment (N=317)

Variables	Model 1 <i>B</i>	Model 2 <i>B</i>	95% CI
Constant	83.42**	119.53**	[105.89 —133.18]
Attitude	.20**	-.03	[-.42 ---.25]
Mood states (Mediator)		-.45**	[-.13 --- .07]
R^2	.04	.19**	
ΔR^2		0.15	
F	13.12**	36.84**	
ΔF		23.72	

Note. *B* = unstandardized regression coefficient.

* $p < .01$. ** $p < .001$.

Table 4 shows the results of mediation analysis explaining indirect effect of mood states between attitude towards menstruation and social adjustment. The results indicate that attitude towards menstruation is a significant predictor of social adjustment explaining 4% variance. This variance is increased to 19% in Model 2 on adding mood state as a mediator, which indicates that it's indirect effect is present which causes 15% variance in social adjustment, while, attitude loses significance in Model 2 when mood states are entered as mediator. It means that attitude predicts social adjustment indirectly through mood states. If attitudes get positive, so is social adjustment, however, if mood states during menstruation get negative, it may lead to less social adjustment even if attitudes are positive. Mediation was further validated through the results of Sobel's Test which was significant at $p < .01$ with z-value of 6.19.

Discussion

The present study was aimed at exploring the relationship between attitude towards menstruation, social adjustment, and mood states during menstruation.

Results showed that social adjustment was negatively related with mood states during menstruation, it explains that as mood states become positive, social adjustment of the participants increase. Past researches also shows that social adjustment that is having meaningful relationships and interactions with others in various settings like academics, home, with extended family, has the potential to have the most damaging effects emotionally if one is not socially adjusted since the social aspect encompasses a large portion of the day (Baker &

Siryk, 1999). Mood fluctuation during menstruation has a significant impact on the well-being of healthy women. Onset of menstruation causes distress that may disturb everyday functioning in social and professional settings (Gonda et al., 2008). Dysmenorrhea and premenstrual symptoms that are distressing lead to school absenteeism, work, and facing problems in household activities (Zafar, Sadeeqa, Latif, & Afzal, 2017).

Attitudes are also found to be associated with social adjustment and have a predictive role in both mood states and social adjustment. These assumptions have been confirmed in this study. Past research shows that girls who had tough menstrual experiences (e.g. severe pain) had negative attitude (Aflaq & Jami, 2012). The physiological, psychological, and behavioral changes that repeatedly occur in female reproductive cycle and remitting shortly after that effects mood states and social adjustment (Gonda et al., 2008). Women who have positive approach towards menstruation experiences less menstrual difficulties and perceive less stressors in life (Rice, 1991).

Girls who have negative attitude towards menstruation are conscious while attending the social gatherings. The reason might be that, physically and psychologically they do not feel comfortable (Aflaq & Jami, 2012). Girls try to avoid moving in any type of setting and therefore their daily routine activities are also disturbed. As the attitude towards menstruation is positive there is high social adjustment seen among girls during menstruation (Koff, Rierdan, & Stubbs, 1990). Another study also consistent with the present study showed that attitude play very significant role in making mood states of individuals (Sigmon, Dorhofer, Rohan, & Boulard, 2000).

Current study showed attitude also significantly predict social adjustment. Past researches also reveal that attitude towards menstruation is associated with the reporting of menstrual symptoms and difficulties. A woman with a negative attitude towards menstruation has associations with more difficulties and perceiving stressor as compared to woman with a positive attitude (Lee et al., 2010).

Feel lethargic, angry, and irritable mood were most reported symptoms in the present sample and beside, this less interest and difficulty in concentrating in daily tasks were also among most reported symptoms. Almost, all girls experience variations of emotions that is mood swings, depression, anxiety, sleeplessness, lethargy, and irritability (Rice, 1991). It is estimated that 60-80% women experience discomfort and pain, related to premenstrual Syndrome (Aflaq & Jami, 2012). Hence, current study confirmed the

assumption (Hypothesis 3) that the mood state was a significant mediator between attitude towards menstruation and social adjustment. The results indicated that attitude towards menstruation was a significant predictor of social adjustment, but when mood state was added in the Model 2, their direct relationship with each other became weak through mood state and attitude lost its significance in predicting social adjustment. Mood state significantly mediates in role of attitudes toward menstruation in predicting social adjustment in academic, home, and relational settings. Past researches also prove present assumptions (Gonda et al., 2008). This confirms the cognitive dissonance theory that experiences during menstruation in terms of bodily, social, and behavioral changes can have impact on attitudes despite of strong significance of menstruation in women's life. These may lead to respective mood states that is if attitudes are negative dissonances arise, which leads to negative mood states that may lead to impaired social adjustment or vice versa.

Implications

This research is useful as it highlights the sensitive topic like menstruation, which is considered as taboo in our society. Though the sample is not representative of all cities and rural areas of Pakistan, still it provides picture of attitude towards menstruation, social adjustment, and mood states of young girls. Perhaps it is the first quantitative study of its kind in Pakistan that has focused different aspects of menstruation. This research provides basic information to the researchers in Pakistan to further work on this issue. It will help researchers to ponder and mediate on other relevant dimensions and to help develop hypotheses in this regard.

This study will be beneficial in raising awareness among people regarding physical, psychological, and social aspects of menstruation.

As this study shows that attitude affect social adjustment as well as mood states of girls during menstruation, so there should be awareness programs based on attitude change to help the girls attain better social adjustment and mood changes.

It has been observed from the researches and results of present study that it is not only the experiences that shape the attitude towards menstruation, but mainly their negative perception, social adjustment, and mood states regarding this natural process which they perceive as threatening. So this study is helpful to psychologist and health practitioners to provide girls counselling to improve their mental schemas, moods, and adjustment during menstruation.

Limitations and Recommendations

One shortcoming of this research is the limited sample size and age range and data were only collected from college and universities of Rawalpindi and Islamabad. It is highly recommended for the further researches to take other age group and uneducated people should also be taken to check their attitude towards menstruation, social adjustment, and mood states during menstruation. To create awareness regarding any sexual issue, it is advisable to involve both gender and check men's attitude towards menstruation, as how their attitude involve in mood states and social adjustment of their partner.

Data should be collected from other setting too including rural areas to increase generalization of findings. Sample may not be representative one as convenient sampling was used for sample selection. It is recommended for the future researchers to use random sampling technique, if possible.

Another important drawback of the present study is the usage of English measures that could not be translated due to time constraints; it is recommended for the future researchers to use indigenous measures to study in local population.

There is no specific measure for social adjustment during menstruation available in Pakistan. Available measures were modified in the present study. So there is need to develop specific scale to measure social adjustment during menstruation.

Conclusion

Findings helped to conclude that attitude towards menstruation predicts social adjustment and mood states during menstruation. Mood state is a strong mediator for attitude towards menstruation in predicting social adjustment during menstruation.

References

- Adewuyi, T. D. O., & Akinade, E. A. (2010). Perception and attitudes of Nigerian women towards menopause. *Procedia-Social and Behavioral Sciences*, 5, 1777-1782.
- Aflaq, F., & Jami, H. (2012). Experiences and attitudes related to menstruation among female students. *Pakistan Journal of Psychological Research*, 27(2), 201-224. Retrieved from <http://www.pjprnip.edu.pk/pjpr/index.php/pjpr/article/view/195>.

- Afridi, B., Tabassum, S., Aman, Z., Tabassum, W., & Durrani, R. (2005). Premenstrual syndrome: Frequency and severity in young college girls. *Journal-Pakistan Medical Association*, 55(12), 546.
- Ali, T. S., Ali, P. A., Waheed, H., & Memon, A. A. (2006). Understanding of puberty and related health problems among female adolescents in Karachi, Pakistan. *Journal of Pakistan Medical Association*, 56, 68-72.
- Amaral, M. C. F., Hardy, E., Hebling, E. M., & Faundes, A. (2005). Chemical modification of chitosan by phosphorylation: An XPS, FT-IR and SEM study. *Journal of Biomaterials Science, Polymer Edition*, 16(12), 1575-1593.
- Baker, S. R., & Siryk, G., (2004). Intrinsic, extrinsic, and a motivational orientations: Their role in university adjustment, stress, well-being, and subsequent academic performance. *Current Psychology*, 23(3), 189-202.
- Brown, I. (2006). Nurses' attitudes towards adult patients who are obese: Literature review. *Journal of Advanced Nursing*, 53(2), 221-232.
- Britton, C. J. (1996). Learning about "the curse": An anthropological perspective on experiences of menstruation. *Women's Studies International Forum*, 19 (6), 645-653.
- Carlson, G. A., Findling, R. L., Post, R. M., Birm, B., Blumberg, H. P., Correl, C., & Tohen, M. (2009). AACAP 2006 Research Forum-Advancing research in early-onset bipolar disorder: Barriers and suggestions. *Journal of Child and Adolescent Psychopharmacology*, 19(1), 3-12.
- Clark, A. V. (2005). *Psychology of moods*. New York: Nova Publishers. Retrieved from https://www.novapublishers.com/catalog/product_info.php?products_id=1778
- Davydov, D. M., Shapiro, D., & Goldstein, I. B. (2004). Moods in everyday situations: Effects of menstrual cycle, work, and personality. *Journal of Psychosomatic Research*, 56(1), 27-33. Retrieved from [http://dx.doi.org/10.1016/S0022-3999\(03\)00602-0](http://dx.doi.org/10.1016/S0022-3999(03)00602-0)
- Davydov, D. M., Shapiro, D., Goldstein, I. B., & Chicz-DeMet, A. (2005). Moods in everyday situations: Effects of menstrual cycle, work, and stress hormones. *Journal of Psychosomatic Research*, 58(4), 343-349. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0022399904006439>
- Farage, M. A., Osborn, T. W., & MacLean, A. B. (2008). Cognitive, sensory, and emotional changes associated with the menstrual cycle: A review. *Archives of Gynecology and Obstetrics*, 278(4), 299-307. doi:10.1016/S0301-0511(03)00076-0
- Gangestad, S. W., Thornhill, R., & Garver, C. E. (2002). Changes in women's sexual interests and their partner's mate-retention tactics across the menstrual cycle: Evidence for shifting conflicts of interest. *Proceedings of the Royal Society of London B: Biological Sciences*, 269(1494), 975-982. doi: 10.1098/rspb.2001.1952

- Gonda, X., Telek, T., Juhasz, G., Lazary, J., Vargha, A., & Bagdy, G. (2008). Patterns of mood changes throughout the reproductive cycle in healthy women without premenstrual dysphoric disorders. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 32(8), 1782-1788. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0278584608002327>
- Harlow, B. L., Wise, L. A., Otto, M. W., Soares, C. N., & Cohen, L. S. (2003). Depression and its influence on reproductive endocrine and menstrual cycle markers associated with perimenopause: The Harvard Study of Moods and Cycles. *Archives of General Psychiatry*, 60(1), 29-36. doi:10.1001/archpsyc.60.1.29.
- Khan, S. (2010). *Menstrual hygiene management in Pakistan*. Retrieved from <http://irsp.org.pk/menstrual-hygiene-management-pakistan/>
- Koff, E., Rierdan, J., & Stubbs, M. L. (1990). Conceptions and misconceptions of the menstrual cycle. *Women and Health*, 10(1), 199-136.
- Lee, J. M., Pili, S., Gebremariam, A., Keirns, C. C., Davis, M. M., Vijan, S., ... Gurney, J. G. (2010). Getting heavier, younger: Trajectories of obesity over the life course. *International Journal of Obesity*, 34(4), 614-23. doi: 10.1038/ijo.2009.235
- Munday, A. B., Keshwani, N., Mudey, G. A., & Goyal, R. C. (2010). A cross-sectional study on awareness regarding safe and hygienic practices amongst school going adolescent girls in rural area of Wardha District, India. *Global Journal of Health Science*, 2(2), 225-231.
- Maji, S. (2016). A study on menstrual knowledge and practices among rural adolescent girls in Burdwan District, West Bengal. *International Journal of Advanced Research*. doi:10.21474/IJAR01/1558
- Naeem, K., Klawitter, S., & Aziz, A. (2015). Learning, acting, and learning (LAL) research on schools' menstrual hygiene management (MHM), Pakistan. *Waterlines*, 34(1), 103-112.
- Oche, M. O., Umar, A. S., Gana, G. J., & Ango, J. T. (2012). Menstrual health: The unmet needs of adolescent girls in Sokoto, Nigeria. *Scientific Research and Essays*, 7, 410-418.
- Rana, G., & Jami, H. (in press). Knowledge/awareness and practices related to menstruation among female students: Role of mother-daughter relationship. *Pakistan Journal of Psychological Research*, 33(2).
- Rhudy, J. L., & Bartley, E. J. (2010). The effect of the menstrual cycle on affective modulation of pain and nociception in healthy women. *PAIN*, 149(2), 365-372. doi.org/10.1016/j.pain.2010.02.041
- Rice, F. P. (1991). *The adolescent* (5th ed.). U.S.: University of Maine.
- Rizvi, N., & Ali, T. S. (2016). Misconceptions and mismanagement of menstruation among adolescent girls who do not attend school in Pakistan. *Journal of Asian Midwives*, 3(1), 46-62.

- Sigmon, S. T., Dorhofer, D. M., Rohan, K. J., & Boulard, N. E. (2000). The impact of anxiety sensitivity, bodily expectations, and cultural beliefs on menstrual symptom reporting: A test of the menstrual reactivity hypothesis. *Journal of Anxiety Disorders, 14*(6), 615-633.
- Springer, P. R., Abbott, D. A., & Reisbig, A. M. J. (2009). Therapy with Muslim couples and families: Basic guidelines for effective practice. *Family Journal, 17*(3), 229-235. doi: 10.1177/1066480709337798
- Sommer, M. (2010). Putting menstrual hygiene management on to the school water and sanitation agenda. *Waterlines, 29*(4), 268-278.
- Terry, P. C., Lane, A. M., Lane, H. J., & Keohane, L. (1999). Development and validation of a mood measure for adolescents. *Journal of Sports Sciences, 17*(11), 861-872.
- Vaughan, G., & Hogg, M. A. (2005). *Introduction to social psychology*. Sydney: Pearson Education.
- Weissman, M. M., & Paykel, E. S. (1974). *The depressed woman: A study of social relationships*. University of Chicago Press. Retrieved from <http://psycnet.apa.org/index.cfm?>
- Yang, D., Shi, Y., Zhao, H., Shi, Y., Cao, Y., Li, Z., & Wu, D. (2012). Genome-wide association study identifies eight new risk loci for polycystic ovary syndrome. *Nature Genetics, 44*(9), 1020-1025.
- Zafar, M., Sadeeqa, S., Latif, S., & Afzal, H. (2017). Pattern and prevalence of menstrual disorders in adolescents. *International Journal of Pharmaceutical Sciences and Research*. doi: 10.13040/IJPSR.0975-8232.9(5).2088-99.

Received 24th March, 2017

Revision received 25th October, 2018