Pakistan Journal of Social Research
ISSN 2710-3129 (P) 2710-3137 (O)
Vol. 5, No. 2, June 2023, pp. 1229-1237.
https://doi.org/10.52567/pjsr.v5i04.1344
www.pjsr.com.pk

SOCIAL SUPPORT, QUALITY OF LIFE AND MENTAL HEALTH PROBLEMS AMONG FEMALES WITH MENSTRUATION PROBLEMS

Umara Rauf*

Assistant Professor, Department of Psychology, GC Women University, Sialkot umara.rauf@gcwus.edu.pk

Mahnoor Zahid

BS Psychology Student, Department of Psychology, GC Women University, Sialkot

Farah Ashiq

BS Psychology Student, Department of Psychology, GC Women University, Sialkot

ABSTRACT

Mensuration problems occurs due to the disturbance in blood discharge during mensuration cycle, effecting emotional, physical, and social well-being. This research focusses on the relationship among females with mensuration problems on the variables of social support, mental health issues (Depression, Anxiety, and Stress) and Quality of Life. Based on previous research, it is hypothesized that (1) Social support would have relationship with mental health problems and quality of life among females with menstruation problems. 2) Social support would have significant relationship with all sub-domains of quality of life among females with menstruation problems. 3). Social Support would have negative relationship with subdomains of DASS i.e., depression, anxiety, stress. A purposive sample of 206 female with menstruation problem from different private and government hospitals of Sialkot were selected. Their age was 13 to 40 years. Their minimum education level was at least middle. They belong to nuclear and joint family setup. A self-demographic sheet was administrated along with Multidimensional Scale of Social Support (Zimet, Dehlem, Zimet, and Farly, 1988), Quality of Life (John Flanagan, 1970), Depression Anxiety Stress (Lovibond, 1992). Findings revealed that social support has significant negative relationship with mental health problems, i.e., depression, anxiety, and stress (p<0.05, p<0.01). Further, social support has significant positive relationship with overall quality of life and all sub-domains of quality of life (p<0.05, p < 0.01). This research is helpful in promoting mental health and improving quality of life of female related to menstruation cycle in their life. Further, mental health practitioners and medical health practitioners can also incorporate strategies in their services that may enhance their well-being and mental health. **Keywords:** Menstruation problems, Quality of Life, Social Support, Stress, Anxiety, Depression.

INTRODUCTION

Mensuration is an important key element in female's reproductive health. Menstruation disease effect the women lifestyle, relationship, emotional health, and overall wellbeing (Steiner, Macdougall, & Brown, 2003). During menstruation, the discharge of blood from the uterus through the vagina, occurring at regularly once a month in female life (House, Mahon, Cavill, 2013). So many cases unreported due to cultural reasons however, different types of menstrual disorder are common including Irregular menstruation, abnormal bleeding, amenorrhea, dysmenorrhea, premenstrual symptoms menorrhea, oligomenorrhea and polymenorrhea (Kumar, Jeffcoate, Malhotra, 2008). These disorder effects the women's quality of life and daily functioning. Most common type is dysmenorrhea that refers to the symptom of cramps occurs painful menstruation (Hillard & Deitch, 2008). Another disease is

_

^{*} Corresponding Author

Oligomenorrhea in which infrequent or very light menstruation, occurring at period of more than one-month intervals (Wiksten-Almströmer, Hirschberg, & Hagenfeldt, 2009). Excessive menstrual blood loss interferes with a woman's overall well-being, and material quality of life falls in menorrhagia syndrome. Quality of life is highly compromised in females with menstruation problems (Van Ejik, et al., 2016) hence, limited literature was available related to these issues (Dicker, et al., 2017).

Previous research indicates that quality of sleep, mental health, social support is interrelated and influence females. Quality of life and health behavior is associated with social support, they influence the health behavior of increasing the ability of new information and connect interpersonal relationship that encourage to engage in health lifestyle (Shin, Jeon, & Cho, 2022).

Some predisposing factors such as poor mental health (anxiety, depression etc.) poor physical health, unhealthy dietary habits, and lack of social support contributed to overall well-being of women with mensuration problems (Liu, Gold, Lasley, & Johnson, 2004). Lazarus and Folkman's (1986) stress appraisal theory have demonstrated that a person will perceive a situation more stressful when it will exceed beyond his/her own capacities to face and deal that situation. And the way he/she will cope will consequently affect the well-being.

According to recent study female's overall well- being, emotional health and interpersonal relationship are affected by menstrual problems with obvious issues related to their mental health (Sarwar & Rauf, 2021). Many research data have highlighted the relationship between mensuration problems and psychological disturbances. Females tend to suffer more with mood disturbances and anxiety related symptoms during menstruation time (Manikandan, 2019). Further any kind of stress whether it was emotional, physical, or mental was positively related with mensuration problems in females (Mariola & Czajkowska, 2019). Stress is the risk factor of dysmenorrhea. There is positive relation between dysmenorrhea, interpersonal problem, and negative emotions (Lei, Chen, & Liu, 2019). Another research predicted that dysmenorrhea is common among female and its severity effects the sleep and quality of life (Hamzekhab, Laksham, & Schoep, 2019; Sahin, 2018).

Jeon, Cha and Sok (2014) studies results revealed that social support was an affecting factor that change female lifestyle which are predictors of menstrual health. Another significant study showed that social support causes improvement in mental health of those females which have any menstruation problems. Nazish and Raffique (2018) also found positive correlation between high psychological stress and menstrual problems. Some other studies revealed that pre-menstruation syndrome rate is high in young girls that intensified depression and lower down QOL (Kizu, 2016). More data depicted dysmenorrhea as a leading cause of heavy bleeding and mental stress, effecting disturbed daily life functioning (Dale, E., Gerlach, D.H., Wilhite, A.L., 1979; Faramarzi, et al, 2016) and lower quality of life (Kiran, 2017 & Geetha et al, 2016).

Another study was conducted by Kiran (2017) described that majority of women suffered from menorrhagia have had poor quality of life. Another research showed consistent findings that behind some mensuration problem there is a leading cause of mental stress with consequence of poor quality of life and discomforted feeling (Halle, 2017; Olalekan, 2016), and irregular menstrual cycle leads towards disruption in work and other important areas of life (Raval et al., 2016). Barron, Flick, Cook, Homan, and Campbell (2008) also found that high level of stress is significantly linked to incidence of dysmenorrhea and Psychiatric disorder have more in those females who have irregular menstruation cycle as compared to without menstruation problems.

Social support acts as a buffer to promote emotional and physical health and reduce the stressful life events and less social support is significantly associated with emotional problems and more menstruation pain as compare women with stable social support (Alonso & Coe, 2001). It also acts as a protective factor against stressful conditions (Cobb, 1976). It also works as an exchange of resources between two persons for the concern of improving well-being. (Shumaker & Brownell, 2010) and for promoting resilience (Alonso & Coe, 2001) and is positively associated with life satisfaction that increased daily functioning (Sahin, Ozer, & Yanardag, 2019; Lee & Goldstein, 2016).

Some comparatives between females with and without menstruation problems have highlighted that females with the menorrhagia have low quality of life and emotional disturbance as compared to those who have normal menstrual cycle (Gokyildiz, Aslan, Beji, & Mecdi, 2013) while such females who had

excessive menstruation bleeding suffer from low quality of life as compared to those who have normal menstruation bleeding (Laksham, Selvaraj, & Kar 2019).

Recent findings related to types of mensuration problems have indicated that young females who suffered from dysmenorrhea had poor scores in physical functioning and have lack of social support, whereas poor psychosocial functioning is found more in females with amenorrhea (Faramarzi, et al., 2016). However, social support is found to be a positive outcome barrier for stress and increased physical and emotional health (Kordi, Mohamadirizi, & Shakeri, 2013).

Hypothesis

- 1. Social support would have significant negative relationship with mental health problems (depression, anxiety, stress) among females with menstruation problems.
- 2. Social support would have significant positive relationship with overall quality of life and its subdomains among females with menstruation problems.

METHODOLOGY

Participants

A purposive sample of females with mensuration problems (N=206) were taken from different private and government hospitals of Sialkot. Their age was 13 to 40 year (M=21.34, SD 9.45) and they belonged to all socioeconomic status. There minimum level of education was middle, and they belonged to joint and nuclear family setup.

Inclusion and Exclusion Criteria:

These criteria include:

- 1. Age 13 to 40 were selected for current study.
- 2. Females belonging to all socioeconomic status were part of research.
- 3. Both nuclear and joint family setups were included.
- 4. Those females were included who were particularly suffering from mensuration related problems and were taking consultations from specialist doctors of different private and government hospitals. Other chronic female related issues were excluded from this study.

Measurements

Self- Developed Demographic Sheet:

Demographic variables including (Name, age, number of siblings, birth order, family system, education level, marital status, number of children, socioeconomic status, employment, status of employment and income level, Nature of disease, duration of disease, number of treatment and its duration.

Multidimensional Perceived Social Support (Zimet, Dehlem, Zimet, & Farley, 1988):

It consists of 12 items with 7-point Likert type scale. It measures social support from family, friends, and support from others. Its Urdu language version translated by Rizwan and Aftab (2009) were used in the current study. The coefficient reliability of this scale was .85.

WHO-BREF Quality of life (Flanagan, 1970):

This scale consists of 15 items. It has four domains including physical, psychological, social, and environmental. Its Urdu version translated by Khan et al., (2003) was used in current study. Cronbach alpha reliability of this scale is 0.62.

Depression Anxiety Stress Scale (DASS) (Lovibond & lovibond, 1992)

It was originally developed by (Lovibond, 1992) and translated by (Aslam) that consists of 21 items and 7-liket scale. The DASS-21 consists of three self- report scales to measure the depression, anxiety, and stress level of a person.

Ethical consideration:

At first, approval was collected from departmental research review committee, authors of the scales and from authorities of different hospitals for data collection. Consent was also taken from study participants, and they were assured of confidentiality, privacy of their data and right from study at any stage.

Procedure

This study was conducted in different government and private hospital i.e., City Hospital, Sialkot, Kashmir Medical Complex, Sialkot, Munawar Surgical Hospital, Sialkot, Khalida Memorial Hospital, Sialkot,

Medicare Center, Sialkot and The Chest Hospital, Sialkot. After the consent of the authorities of the hospitals, participants were approached. They were told about the purpose of the study and after getting their consent for participation a self-developed demographic sheet was administered along with different study scales. After obtaining the data, results were computed through SPSS.

Statistics Analysis

The data was analyzed through SPPSS-20 version. Demographics variables were computed on (categories, frequencies, and percentage). Pearson product moment coefficient of correlation was used in all scales to find out the relationship between variables.

RESULTS

This part includes the percentages of demographic characteristic and variables computed through SPSS. Further relationship among model variables and subdomains of model variables was found through Pearson product moment correlation coefficient.

Table 1. Socio-Demographics characteristics and variables of sample (N=206)

Demographics Categories		f	%	
Age	13-19	61	29.6	
	20-26	65	31.6	
	27-33	33	16.0	
	34-40	47	22.8	
Family setup	Nuclear	143	64.6	
,	Joint	63	65.0	
Education	Middle	29	29.6	
	Matric	32	4.9	
	Inter	52	69.4	
	Graduation	68	30.6	
	Post-graduation	25	14.1	
Marital status	Married	63	15.5	
	Unmarried	136	25.2	
	Divorce	5	33.0	
	Widow	2	12.1	
	Separate	1	30.6	
No. of children	0	146	66.0	
1101 01 011110101	1-3	51	2.4	
	4-6	7	1.0	
	7-10	1	0.5	
Socio-economic status	Lower	17	70.9	
2 9 9 10 9 9 110 1111 2 9 111 11 11	Middle	178	24.8	
	Upper	11	3.4	
Employment	Employed	40	0.5	
	Unemployed	166	8.3	
Job status	Government	34	86.4	
	Private	82	5.3	
	Other business	90	19.4	
Income level	10,000-13,000	64	80.6	
1000110	31,000-50,000	89	16.5	
	51,000-100,000	43	39.8	
	Above one lac	10	43.7	
Nature of disorder	Dysmenorrhea	77	31.1	
reaction disorder	Menorrhagia	62	43.2	
	Oligomenorrhea	67	20.9	
	Normal	1	4.9	
Duration of disorder	6-11 months	79	37.0	
01 01001001	1-10 years	50	29.8	
	11-20 years	11	32.2	
	Above 21 years	65	0.5	
No. of treatment	0	24	38.0	

	1-4	156	24.0
	5-8	21	5.3
	9-12	4	31.3
Duration of treatment			
	Normal	18	75.0
	1-6months	125	10.0
	7-12months	42	9.1
	Above 12	21	8.7

Table 2. Pearson product moment coefficient of correlation of social support with mental health

problems and quality of life in current sample.

Categories	Social Support	MHP	QOL
Social Support	-	204**	.219**
MHQ		-	- 325**
QOL			-

^{**.} Correlation is significant at 0.01 levels (2-tailed)

Above tables shows that social support has significant negative relationships with mental health problems and is positively associated with quality of life among females with mensuration problems. Further, mental health problems have significant negative relationship with QOL.

Table 3. Pearson product moment coefficient of correlation of multidimensional perceived social support (MPSS) with all sub-domains of quality of life (QOL) among females with menstruation problems.

Variables	Social Support	Physical domain	Psychological domain	Social domain	Personal domain
Social support	-	.144*	.204**	.237**	.173*
Physical Domain		-	.217**	.314**	.210**
Psychological Domain			-	.321**	.342**
Social Domain				-	.214**
Personal Domain					-

^{*}Correlation is significant at the 0.05 level (2-tailed)

Note: Above table shows that different dimensions of perceived social support are significantly and positively associated with all sub-domains of QOL.

Table. 4. Pearson product moment coefficient of correlation of social support with depression, anxiety, and stress among females with menstruation problems.

Variables	Social Support	Depression	Anxiety	Stress
Social Support	-	224**	172*	143
Depression		-	.187*	.167
Anxiety			-	.275**
Stress				-

^{**}Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Note: Result indicates that multidimensional perceived social support is significantly and negatively correlated with depression, anxiety, and stress in current sample.

DISCUSSION

The target of the current study is to explores the relationship between menstruation disorders and their negative psychological effects (mental health) on females. Sahin, Kasap, Kirli, Yeniceri, and Topal (2018) find out that there is a positive relationship between mental health and dysmenorrhea, as well as sever dysmenorrhea symptoms leads low quality of life in women.

In 2018, Raffique and Al-Sheikh have revealed her studies that there is a significant positive correlation between mental health and menstrual problems. The current study results revealed that social support has significant negative relationships with mental health issues and positive relationship with quality of life among females with mensuration problems (p<0.01). These results consistent with previous literature. One researcher describes that majority of women, complaining of menorrhagia issues and has strong relationship between menstruation disorders and quality of life (Zafar, 2017).

Same reason defines another study that was conducted by Sahin, Kasap, Kirli, Yeniceri, and Topal (2018) dysmenorrhea causes low quality of life among adolescents that leads heavy bleeding. Our current study analysis reveals the strong relationship between social support and quality of life (r=.219**). The analysis of one study explores the positive relationship in those women's who receive high social support from their family they have high quality of life too. Low social support can cause poor quality of life and high social support increase high quality of life. Social pressure and lack of social support is risk factors in females to lead menstruation related issues.

The current findings shown that menstruation disorders lead mental health issues such as anxiety, stress, irritability, mood swings, anger, and depression. Severity of disorder increasing psychological disorders. Menstruation disorders bring mental stress, discomfort, and eventually low quality of life. Pakistani culture encourages the strong familial relationship, so our results were predicting this phenomenon that females who gain social support from their family culture they have high quality of life. Mensuration can disturb daily routine activities and social life as well. We can say that positive communication with family, friends and spouse reduce the psychological symptoms such as anxiety, and depression among females. The females who receive the high social support mostly away from depression and other mental problems (Ghasemipoor, & Jahanbakhsh, 2010). Harandi., Taghinasab, and Nayeri (2017) defined that people with high level of social support stay healthy and away from illness.

Moreover, in (1976), Social support represents as guard against stressful situations this concept proposed by Cobb and according to him it affects the individual routine work and health. Social support gives the individual to feeling of love, care and being loved. In (2015) Quraishi et al., highlighted that stress effects menstrual cycle of female's and these problems are associated with the mental health issues. Some other studies revealing that females who have heavy menstruation bleeding and irregular menstrual have low quality of life (Mahmood & Jabeen, 2013). Latest researches have revealed that females with oligomenorrhea suffered with significant psychological issues such as irritability, anxiety, mood swings, aggression and low quality of life and emotional disturbance as compared to those females who have normal menstruation cycle (Yavari, 2014; Gokyildiz, 2013). Lack of social support is risk factors in females to lead menstruation related problem (Flynn, 2006). The present study focused on social support as a predictor of quality of life and mental health symptoms among females with menstruation problems. Previous literature found the negative relationship between social support and anxiety, depression, and stress symptoms (Shi, Wang, Yao, Su, Zhao & Zhan, 2017).

CONCLUSION

Form the current findings, it is concluded that social support acts as a buffer against mental health problems and positively linked with quality of life among females with menstruation problems. This study sheds great importance of mental health during menarche among females. Due to severe pain and other problems occurred during mensuration cycle has great effect on quality of life among females, in their daily life

functioning etc. Support from family, friends and significant others prevent them from being caught by severe mental disorders and help them in working the daily life chores and matters in effective manner.

REFERENCES

- Alonso, C., and Coe, C. L. (2001). Disruptions of social relationships accentuate the association between emotional distress and menstrual pain in young women. *Health Psychology*, 20(6), 411.
- Barron, M. L., Flick, L. H., Cook, C.A., Homan, S. M., and Campbell, C. (2008). Associations between psychiatric disorders and menstrual cycle characteristics. *Archives of psychiatric nursing*, 22(5),254-65.
- Cobb, S. (1976). Presidential address-1976. Social support as a moderator of life stress. Psychosom med 38(5), 300-314. doi: 10.1097/00006842-1909000-00003.
- Dale, E., Gerlach, D.H., Wilhite, A.L., (1979). Menstrual dysfunction in distance runners. *Obstet Gynecol*, 54 (1), 47–53.
- Dicker, D., Nguyen, G., Abate, D., Abate, K. H., Abay, S. M., Abbafati, C., Abbasi, N., Abbastabar, H., Abd-Allah, F., Abdela, J., and Abdelalim, A. (2018). Global, regional, and national age-sex-specific mortality and life expectancy, 1950–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The lancet*, 392(10159),1684-735.
- Faramarzi, H., Mehrabani, D., Fard, M., Akhavan, M., Zare, S., Bakhshalizadeh, S., Manafi, A., Kazemnejad, S., and Shirazi, R. (2016). The potential of menstrual blood-derived stem cells in differentiation to epidermal lineage: A preliminary report. *World journal of plastic surgery*, 5(1),26.
- O'Flynn N. (2006). Menstrual symptoms: the importance of social factors in women's experiences. *The British journal of general practice : the journal of the Royal College of General Practitioners*, 56(533), 950–957.
- Geetha, P., chenchuprasad, C., Sathayavathi, R. B., Bharathi T., Surendranadha, R. K., & Kodanda, K.R. (2016). Effect of socioeconomic conditions and lifestyle on menstrual characteristics among rural women. *J. Women's health care.5*, doi:10.4172/21670420.1000295.
- Ghasemipoor., M., & Jahanbaksh., G. S. (2010). The relationship between the social support and mental health in Lorestan university students in 2009. *Yafteh*, 12(1),57–64.
- Gokyildiz, S., Aslan, E., Beji, N. K., and Mecdi, M. (2013). The effects of menorrhagia on women's quality of life: a case-control study. International Scholarly Research Notices.
- Hamzekhan, M. & Gandomani, S.J. (2019). The relation between sleep quality & primary dysmenorrheal student University of Medical science Shahroud.
- Hale (2017). The correlation of social support with mental health: A meta-analysis. *Electronic physician*, 9(9), 5212.
- Hillard, P. J., & Deitch, H. R. (2008). Menstrual disorders in the college age female. *Pediatric Clinics*, 52(1), 179-97.
- House, S., Mahon, T., Cavill, S. (2013). Menstrual hygiene matters: a resource for improving menstrual hygiene around the world. *Reproductive Health Matters*, 21(41), 257-9.
- Harandi, T. F., Taghinasab, M. M., & Nayeri, T. D. (2017). The correlation of social support with mental health: A meta-analysis. *Electronic physician*, *9*(9), 5212–5222. https://doi.org/10.19082/5212
- Jeon, G. E., Cha, N. H., & Sok, S. R. (2014). Factors influencing the dysmenorrhea among Korean adolescents in middle school. *Journal of physical therapy science*, 26(9), 1337-1343.
- Khan, M. N., Akhter, M. S., Ayub, M., Alam, S., Laghari, and N. U. 92003). Translation and validation of quality-of-life scale, the brief version. Journal of the College of Physicians and Surgeons--pakistan: JCPSP, 13(2),98-100.
- Kordi, M., Mohamadirizi, S., and Shakeri, M. T. (2013). The relationship between occupational stress and dysmenorrhea in midwives employed at public and private hospitals and health care centers in Iran (Mashhad) in the years 2010 and 2011. Iranian journal of nursing and midwifery research, 18(4),316.
- Kumar, P., Jeffcoate, S. N., Malhotra, N. (2008). *Jeffcoat's Principles of Gynecology*. Butterworths.
- Kizu, H. (2016). The relationship between quality of life and social support among adolscentes.doi:10.1051/shsconf/20173701053.

- Laksham, K. B., Selvaraj, R., & Kar, S. S. (2019). Menstrual disorders and quality of life of women in an urban area of Puducherry: A community-based cross-sectional study. *Journal of family medicine and primary care*, 8(1), 137–140. https://doi.org/10.4103/jfmpc.jfmpc_209_18
- Lazarus, R. S., & Folkman, S. (1986). Cognitive Theories of Stress and the Issue of Circularity. In M. H. Appley, & R. Trumbull (Eds.), Dynamics of Stress. Physiological, Psychological, and Social Perspectives (pp. 63-80). New York: Plenum. https://doi.org/10.1007/978-1-4684-5122-1_4.
- Lee, C. Y., & Goldstein, S. E. (2016). Loneliness, Stress, and Social Support in Young Adulthood: Does the Source of Support Matter? *Journal of youth and adolescence*, 45(3), 568–580. https://doi.org/10.1007/s10964-015-0395-9
- Lei, C., Chen, Y, and Liu, S. E. (2019). Loneliness, stress, and social support in young adulthood: Does the source of support matter? Journal of youth and adolescence, 45(3), 568-80.
- Liu, Y., Gold, E. B., Lasley, B. L., and Johnson, W. O. (2004). Factors affecting menstrual cycle characteristics. American journal of epidemiology, 160(2),131-40.
- Mahmood, M., & Jabeen, N (2013). Pattern of menstrual irregulation amongst women presenting to gynecological outpatient department. *J. Islamabad medical and dental college*. 2 (1), 9-12.
- Olalekan, S. (2016). Primary dysmenorrheal & menstrual symptoms in Indian female student prevalence impact & management. *Global Health Sciences*, 8,53632.
- Quraishi, S.R., Waghachavare, V.B., Gore, A.D., & Dhumale G.B. (2015). Are menstrual problems associated with the mental health? *A cross sectional study among Graduation College girls. The international medical journal Malaysia*, 14 (2) 53-60.
- Rafique, N., & Al-Sheikh, M. H. (2018). Prevalence of menstrual problems and their association with psychological stress in young female students studying health sciences. *Saudi medical journal*, *39*(1), 67–73. https://doi.org/10.15537/smj.2018.1.21438
- Raval, C.M., Panchal, B.N., Tiwari, D.S., Vala, A.U & Bhatt, R.B.(2016). Prevalence of premenstrual syndrome & premenstrual dysphoric disorder among college student of Bhavnagar, Gujarat. *Indian Journal of Psychiatry*, 58, 1164-170.
- Rizwan, M., and Aftab, S. (2009). Psychometric properties of the multidimensional scale of perceived social support in Pakistani young adults. Pakistan Journal of Psychology, 40(1), 51-65.
- Sahin, D. S., Ozer, O., Yanardag, M. Z. (2019). Perceived social support, quality of life and satisfaction with life in elderly people. Educational Gerontology, 45(1), 69-77.
- Sarwar, U., & Rauf, U. (2021). social support, quality of life and mental health problems among females with and without menstruation problems: a comparative study. *Khyber Medical University Journal*, 14(4), 206-10.
- Shi, J., Wang, L., Yao, Y., Su, N., Zhao, X., & Zhan, C. (2017). Family function and self-esteem among Chinese university students with and without grandparenting experience: Moderating effect of social support. Frontiers in psychology, 8, 886. pmid:28611720.
- Shin, H., Jeon, S., & Cho, I. (2022). Factors influencing health-related quality of life in adolescent girls: a path analysis using a multi-mediation model. *Health and Quality of Life Outcomes*, 20(1), 1-12.
- Shumaker, Sally & Brownell, Arlene. (2010) toward a Theory of Social Support: *closing conceptual gaps, Article in journal of social issues* 40(4):11-36 April 2010.
- Steiner, M., Macdougall, M., Brown, E. (2003). The premenstrual symptoms screening tool (PSST) for clinicians. *Archives of Women's Mental Health*, 6(3), 203-9.
- Tylor, E.S. (n.d). Health Psychology. (9th e.d.). Stress.chap.6. pp.113115. California: Los Angeles.
- Van Eijk, A. M., Sivakami, M., Thakkar, M. B., Bauman, A., Laserson, K. F., Coates, S., and Phillips-Howard. (2016). Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis. BMJ open,6(3)
- Wiksten-Almströmer M, Hirschberg, A. L., and Hagenfeldt, K. (2009). Reduced bone mineral density in adult women diagnosed with menstrual disorders during adolescence. *Acta obstetricia et gynecologica Scandinavica*, 88(5), 543-9.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., and Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41.