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Impact of menstruation on physical and mental health of young adolescent girls

Shinu Kochhar
MA Clinical Psychology, Department of Psychology, Lovely Professional University

Dr. Sanjay Ghosh
Assistant Professor, Department of Psychology, Lovely Professional University

***Abstract*---**This study was undertaken to study the Impact of Menstruation on Physical and Mental Health of young adolescent girls. Two different phases (Pre-menstrual phase and post menstrual phase) were taken to assess the impact of the premenstrual symptoms screening tool revised for adolescents (PSST-A), Measure of Adolescent Coping Strategies (MACS), Well-Being Index (WBI–CVSV)andAdjustment Inventory for School Students (AISS–SS) . The age of the subjects ranges from 13 to 16 years (grade 8th to 10th). Results revealed that the subjects of pre phase of menstruation showed deterioration in premenstrual symptoms screening tool revised for adolescents (PSST-A), Measure of adolescent coping strategies, emotional well-being, psychological well-being, spiritual well-being. The subjects of post menstrual phases showed stronger psychological characteristics in measure of adolescent coping strategies and levels of adjustment. It was also confirmed by the study that the magnitude of the problem comes down during the post phase of menstruation. Physical health was proved a significant factor during menstruation from which other associated symptoms and problems may generate. So, physical and mental health are very much associated with menstruation for the females during their adolescence.

***Keywords*---**menstruation, adolescence, premenstrual symptoms, well-being, adjustment, coping.

Introduction

The word "menstruation" is etymologically affiliated to "moon." The word is actually procured from the Latin word 'mensis' meaning month, which in turn is obtained from the Greek word 'mene' meaning moon. A popular notion suggests that the moon had a part to play in a woman's menstruation or menstrual cycle. It might arise due to the extremely similar periods of time of the two cycles-

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menstrual cycle (28 days) and lunar cycle (29.5 days). The study of "The regulation of menstrual cycle and its relationship to the moon" by inspection, laboratory assessment, and clinical viewing was based on the theory of conventional Chinese medicine that human physiological rhythms display harmony with other natural rhythms. A simultaneous relationship between the menstrual cycle and lunar rhythm was confirmed. (Sung Ping Law, 1986). In a life cycle, a woman's body is vulnerable to a plethora of changes. The pattern of these consistent changes in a woman—which is a deciding factor for pregnancy is called the menstrual cycle. When an ovum is not fertilized, the lining of the uterus sheds and causes haemorrhage, called menstruation. Demonstrating the statement "Menstrual cycle: Cry of the uterus," if the egg that is emanated by the ovary is unfertilized, it merely passes on through the uterus, out of the vagina, and is gone. The outer cells that line the uterus are then discarded for the month, together with blood that is delivered as they tear themselves away from the wall. This is known as "menstrual flow." Menstruation is often considered to be the "weeping of a disappointed womb" when pregnancy does not occur (Sarah Yager, October 2, 2013).

As stated by the World Health 0rganization (WHO), "health" is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." For women, menstrual health is a fundamental fragment of overall health, as menstruation can have a notable impact on mental, physical, and social well-being. Mental health refers to emotional, behavioral, and cognitive well-being. It's all about how people think, feel and behave. Sporadically, people use the term "mental health" to signify the non-existence of a mental disorder. Many reviews have proposed that women may be at risk of a higher degree of suicide attempts and completed suicides in the menstrual stage (Saunders & Hawton, 2006). Physiological symptoms surrounding menstruation may give rise to mental health issues. Discomfort and physical pain (dysmenorrhea) is a common phenomenon (45% to 95% of women studied, Proctor & Farquhar, 2006).

Adolescence is seen as a transitional period from childhood to adulthood and is depicted by an intense gush in emotional, mental, hormonal, and physical growth. As the future generations' direct reproducers, the health of adolescent girls impacts not only their own health but also the future population's health. According to the American Psychological Association (APA) Dictionary, psychological factors that contribute to the development of personality, the maintenance of health and well-being, and the etiology of the mental and behavioral disorder are those factors that affect the care of the well-being and the etiology of mental and behavioral disorders. These factors also add their contribution to the development of personality. A study showed a positive correlation between menstruation signs and depression, stress, and anxiety (Mohamadirizi, S., & Kordi, M., 2013). Furthermore, another study (by Chandra-Mouli, V., & Patel, S. V., 2017) focuses on the impact of menstruation through three parameters, in which when the psychological impact was studied it was seen that many girls have a negative response to their first period. For example, a majority of girls going to school in one study in India describe menarche as an appalling or terrifying event, and many cried when they saw their blood. In a study by (Acheampong, K., 2019) it was seen that female adolescents who attained menarche, had mal adaptive coping pattern before their periods stared.

Whereas, previous research findings on premenstrual coping have studied the relationship between ways of coping and premenstrual symptom severity (Warren, C. J., & Baker, S.,1992). and some studies have examined the coping at different phases of the menstrual cycle.(Fontana, A. M., & Palfai, T. G., 1994). In accordance with the points mentioned above, a paradox also arises which suggests the positive impacts of menstruation in adolescent girls. The theory of Robert and David (2004) shows that dysmenorrhea is normal but can be exaggerated if it is influenced by psychological and physical factors like stress and the influence of the hormone's prostaglandins and progesterone. Menarche may be seen as "a symbol of sexual maturity" (Conger 1973), a positive view, apparently. Physical factors are those physiological and biological factors that influence the growth and the development of an organism. Menstruation-related impacts are mostly negative, as highlighted in a study by (Chandra-Mouli and Patel Reproductive Health, 2017), namely- worry, cramps, discomfort. Overall, 88.7% of experienced changes reported by post-menarche girls and 89.4% of anticipated changes reported by pre-menarche girls were negative.Majority of females had one or more problems related to their premenstrual cycle. Premenstrual Syndrome (PMS) was reported by the majority of the subjects. (Sharma, P et al., 2008) A study (by Nur Azurah et al., 2013) confers that adolescents who have dysmenorrhea have the most inferior score in physical function. In a journal it was concluded that, the hormonal pattern of adolescent menstrual cycles is far from uniform. It is very likely that in addition to gonadotropins, oestradiol and progesterone, androgens may also have a role in the development and maintenance of normal menstrual function in the female. (Apter,D.et.al,1978). In accordance with the points mentioned above, a paradox also arises which suggests the positive impacts of menstruation in adolescent girls. The American College of 0bstetricians and Gynecologists in 2015 published a committee opinion, validated by the American Academy of Pediatrics, that called for the menstrual cycle to become an important sign. Indeed, experiencing menstruation regularly is an important health sign among women and adolescents. It was emphatically pointed out that abnormal menstrual patterns in adolescence may lead the way to early discovery of potential health problems and may lead clinicians to identify and potentially tend to girls with anovulatory cycles who are at high-risk for long-term cycles that are irregular, polycystic ovary syndrome (PCOS), and infertility.

According to the American Psychological Association (APA) Dictionary, components (e.g., attitudes) that influence behavior or thought in a social setting or that affect self-concept vis-à-vis other groups of people refer to the social factors. Some of the studies determine that socioeconomic status (Dasgupta & Sarkar, 2008), religion (Dhingra et al., 2009; Guterman, Mehta, & Gibbs, 2008), education, and family background have a crucial impact on the menstrual practices of the adolescent girls. One of the researchers works emphasized the social impact of menstruation, concluding that social and cultural practices regarding menstruation depend on girls' attitude, education, family environment, belief, and culture. The study marks and suggests the need for hygiene and health programs for adolescent girls (Kumar, A., & Srivastava, K., 2011). Furthermore, another study (by Chandra-Mouli, V. et al, 2017) focuses on the impact of menstruation through three parameters in which when the social impact was studied it was seen thatactivities of daily routines get limited by menstruation

among a quarter of girls in rural parts of India. Female students from a combination of rural and urban settings in India reported restrictions on who they could touch while menstruating. Other social restrictions frequently reported include avoiding social or physical activities (e.g., functions and sports), refraining them from religious activities, or missing school. Such absences diminish opportunities for successful educational, psychosocial, and cognitive development during the critical period of adolescent growth. (Klein JR, et.al., 1999). As such, it is associated with many psychological and social issues such as girls' and women's gender identity (Flaake 2005), sexuality (Schooler et al. 2005), body image (Roberts and Waters 2004), reproductive lives (Johnston-Robledo et al. 2007), and social status (Young 1997). Further, women's knowledge about, attitudes toward, and experiences with all aspects of menstrual life vary with their social location (Chrisler and Zittel 1998; Marvan and Trujillo 2009).

Methods

Objectives

- To investigate psychological correlates –namely psychological well-being, coping with the environment, and nature of adjustment related to menstruation in comparison with pre and post phase of menstruation of females aged between 13 - 16 years.
- To see the effect of physical correlates- namely general health and warning signs of menstruation in comparison with pre and post phase of menstruation of females aged between 13-16 years.
- To examine the effect of social correlates- namely interpersonal relationship related to menstruation in comparison with pre and post menstruation phase of the female aged between 13-16 years.

Hypothesis

- There will be no relation between psychological correlates - namely psychological well-being, coping with the environment, and nature of adjustment related to menstruation in comparison with pre and post menstruation of females aged between 13 - 16 years.
- There will be no relation between physical correlates- namely general health and warning signs of menstruation in comparison with pre and post phase of menstruation of females aged between 13-16 years.
- There will be no relation between social correlates – namely interpersonal relationship related to menstruation in comparison with pre and post menstruation phase of the female aged between 13-16 years.

Sample Size

The sample were selected via random sampling method. A total number sample were 100 for the data collection purpose.

Inclusion Criteria

- The inclusion criteria will include female subjects aged 13-16 years.

- The subjects Will be students of classes 8th to 10th, residing in urban areas.

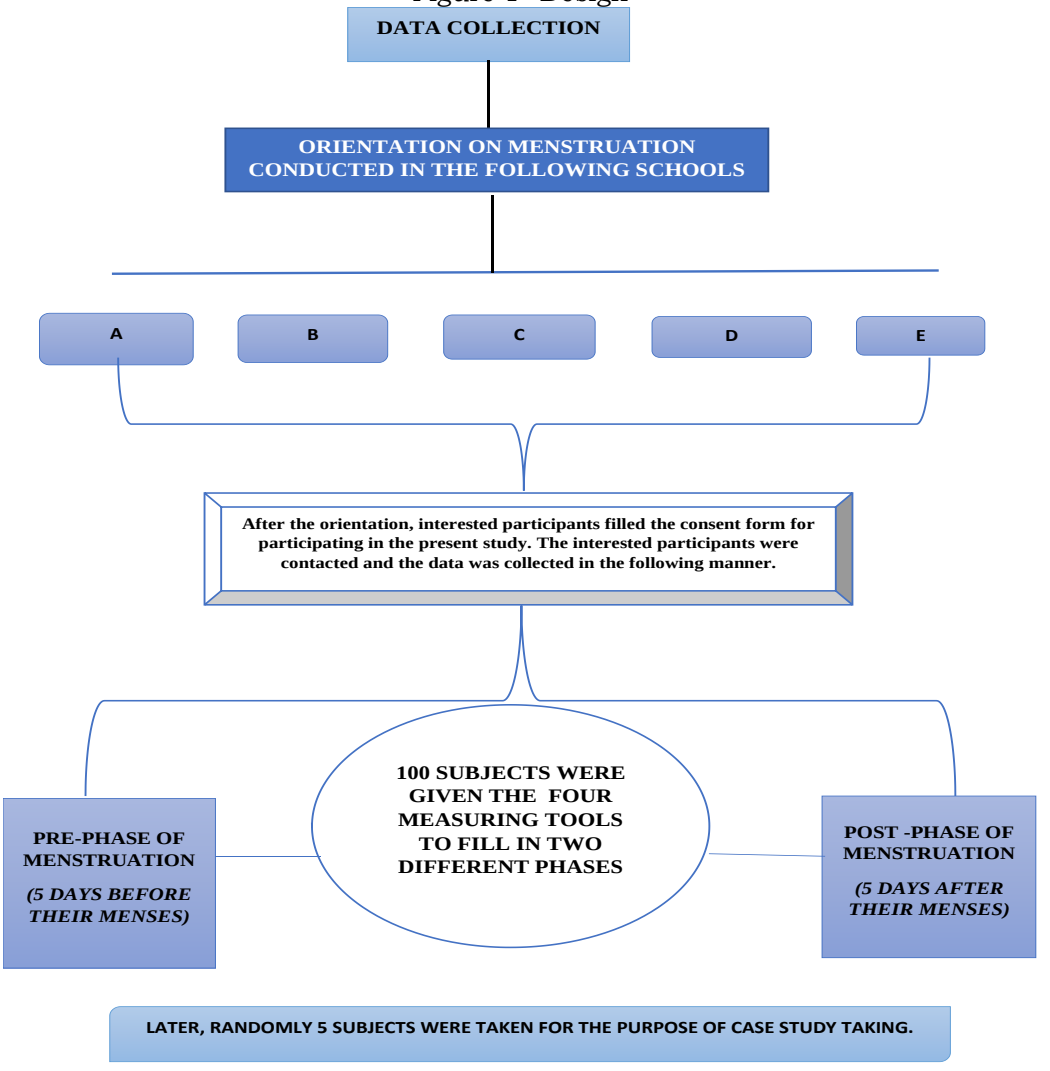
Exclusion Criteria

- The exclusion criteria will include subjects of both below & above the age of 13-16 years, males, and subjects who reside in rural areas.
- The samples will be matched on caste, religion, race, socioeconomic status, and demographic location.

Design

The sample were selected via random sampling. For the purpose of data collection, a total number of samples were 100.

Figure 1- Design



Measuring tools

1. The premenstrual symptoms screening tool revised for adolescents (PSST-A)- It was developed by Meir Steiner, Miki Peer, Eva Palova, Ellen W. Freeman, Mary Macdougall, and Claudio N. Soare. The PSST-A consists of 19 items, in which 14 premenstrual symptoms, and five functional items, in line with DSM-IV criteria. It is applicable to female adolescents 12 to 18 years of age. In the present study, this tool is denoted as T1.
2. Measure of Adolescent Coping Strategies (MACS)- It was developed by Sigrun Sveinbjornsdottir and Einar Baldvin Thorsteinsson. This scale consists of 34 items Language-
   English. It is applicable to female adolescents.In the present study, this tool is denoted as T2.
3. Well-Being Index (WBI–CVSV) –
   It was developed by V. L. Chauhan and Varsha Sharma. This index scale consists of 50 items divided into six dimensions–1. Emotional, 2. Psychological, 3. Social, 4. Spiritual, 5. Self-Awareness, 6. Physical. Language-Hindi/English. It was administered at the age of 13 and above year.In the present study, this tool is denoted as T3. The dimensions are denoted as-T3-D1, T3-D2, T3-D3, T3- D4, T3-D5,T3-D6. The overall score is represented by OA.
4. Adjustment Inventory for School Students (AISS–SS) –
   It was developed by A. K. P. Sinha and R. P. Singh. This inventory consists of 60 items. It measures adjustment in three areas — I. emotional, II. social and III. educational. Language-Hindi/English. For Age group 14 to 18 years.In the present study, this tool is denoted as T4.
   The dimensions are denoted as – T4-D1, T4-D2, T4-D3. The overall score is represented by OA.

Procedure

To conduct the present study, the data was collected by conducting orientations in various schools of Jalandhar, Punjab. Firstly, permission was taken from each school then orientation was presented with an aim to share knowledge regarding the process of menstruation. The orientations were conducted for the selected sample size i.e., females aged 13-16 years who belonged to grade- 8^{th} to 10^{th}. In the orientation process the present study was also introduced and the interested female candidates were asked to fill the consent form. The consent form included their personal details and contact numbers. Later, through which they were contacted and their periodic dates were noted in accordance with their pre and post phases of menstruation. As per, their periodic dates they provided with the measuring tools.

During their pre phase dates females were asked to fill the pre-phase of menstruation form and during their post phase dates females were asked to fill the post- phase of menstruation form. Both the forms consisted the same measuring tools. The tools for administering the test were used in the online mode on 100 female adolescents who were interested to be a part of the study .While distributing the tools the subjects were also given assurance about the confidentiality of their responses and instructions were also given to the subjects

carefully. All the precautions were taken care. The data was collected using virtual platforms through google forms. Each female adolescent was also provided with an e- certificate after the completion of their respective data collection. To include a brief qualitative aspect in the present study, case study taking was also done with the help of 5 female subjects who were selected randomly. Statistical analysis like mean, SD, t-test are computed by the assistance of SPSS 20.0 version.

Results

Table 1- Distribution of scores of the respondents during their pre- phase of menstruation

Sr. No.	T1	T2	T3-D1	T3-D2	T3-D3	T3-D4	T3-D5	T3-D6	T3-OA	T4-D1	T4-D2	T4-D3	T4-OA
1	21	27	21	36	60	25	29	18	189	9	13	12	34
2	29	37	18	30	57	21	27	16	169	12	18	25	55
3	31	37	11	22	46	13	20	15	127	12	21	16	49
4	21	33	27	42	62	23	34	27	215	15	12	6	33
5	16	21	16	29	40	13	15	11	124	18	24	24	66
6	8	8	25	35	56	20	36	21	193	11	21	15	47
7	26	40	17	30	55	20	36	25	183	15	15	12	42
8	27	33	23	41	64	22	36	24	210	12	13	8	33
9	32	51	11	29	61	24	24	13	162	19	10	18	47
10	24	56	21	27	52	16	26	19	161	26	15	19	60
11	21	59	26	39	63	25	35	24	212	16	12	10	38
12	20	44	25	42	73	25	42	30	237	10	11	8	29
13	25	57	18	34	55	20	25	20	172	14	16	10	40
14	24	57	26	43	53	24	32	26	204	16	21	9	46
15	12	12	20	43	60	25	45	26	219	15	19	13	47
16	8	27	27	45	60	24	37	27	220	12	13	10	35
17	41	61	19	29	61	21	28	22	180	19	15	8	42
18	31	42	18	30	58	16	31	21	174	16	21	11	48
19	8	53	24	44	69	24	40	30	231	8	9	3	20
20	31	55	18	36	47	21	31	17	170	19	8	22	49
21	40	44	13	27	49	15	22	16	142	22	25	26	73
22	14	48	23	36	66	25	34	24	208	15	13	10	38
23	24	54	23	33	57	24	33	25	195	11	14	15	40
24	25	49	14	30	53	22	30	16	165	15	26	16	57
25	39	23	26	35	62	20	35	29	207	12	16	4	32
26	19	56	12	29	36	20	27	25	149	30	19	15	64
27	20	38	20	40	51	25	30	20	186	19	22	12	53
28	22	29	25	43	60	23	34	23	208	10	12	7	29
29	41	41	9	28	45	14	24	18	138	25	17	20	62
30	14	35	16	28	52	17	25	19	157	19	13	13	45
31	4	39	24	44	62	25	40	27	222	9	6	9	24
32	10	39	21	39	57	23	33	23	196	14	16	15	45
33	12	54	27	45	71	25	37	27	232	11	12	8	31
34	6	45	21	40	54	20	31	21	187	17	11	11	39
35	21	64	27	41	66	20	35	30	219	15	9	5	29
36	35	41	12	23	47	17	27	20	146	22	20	16	58
37	25	49	24	33	45	17	34	22	175	11	10	4	25
38	19	33	20	31	55	21	28	16	171	22	15	16	53
39	26	54	18	29	47	19	28	15	156	27	18	22	67
40	36	34	16	28	44	21	27	17	153	24	19	15	58
41	16	28	22	38	59	24	39	22	204	10	20	18	48
42	0	38	23	41	55	19	42	22	202	12	12	3	27
43	11	38	19	32	54	21	37	21	184	18	15	13	46
44	26	64	21	36	61	25	38	28	209	17	14	13	44
45	15	31	14	34	53	19	29	17	166	19	19	17	55
46	21	42	26	36	60	15	38	19	194	15	9	12	36
47	35	31	9	35	49	14	31	19	157	15	21	12	48
48	32	31	15	30	56	19	28	19	167	15	12	18	45
49	29	62	13	33	49	21	27	21	164	13	14	18	45
50	32	74	18	34	45	21	30	19	167	14	16	14	44

51	20	62	19	38	61	19	29	28	194	18	17	19	54
52	40	56	18	30	57	21	26	23	175	17	20	12	49
53	41	46	24	39	59	25	37	24	208	10	9	9	28
54	24	55	25	40	67	23	38	30	223	21	13	11	45
55	32	57	19	30	46	21	31	17	164	15	19	23	57
56	17	44	18	34	49	18	26	20	165	24	22	16	62
57	17	56	22	35	62	16	30	18	183	17	8	12	37
58	29	48	24	31	67	23	34	17	196	10	7	10	27
59	42	61	14	25	47	22	25	17	150	21	22	19	62
60	23	49	19	29	39	13	31	22	153	16	19	20	55
61	10	30	26	40	55	25	39	22	207	12	12	17	41
62	33	49	18	34	57	12	32	19	172	17	23	18	58
63	23	61	19	33	51	11	23	11	148	21	16	17	54
64	43	60	11	30	45	24	26	23	159	15	16	11	42
65	29	50	16	27	48	15	29	18	153	17	21	22	60
66	20	34	18	33	44	15	27	25	162	13	14	19	46
67	23	50	17	32	51	19	31	23	173	17	19	13	49
68	9	19	22	29	57	16	28	25	177	10	21	10	41
69	22	41	17	34	63	21	35	17	187	17	24	27	68
70	11	57	22	34	51	21	33	18	179	18	14	20	52
71	27	49	28	41	56	25	24	26	200	22	15	9	46
72	11	19	21	33	54	20	30	20	178	9	9	15	33
73	23	37	15	35	63	17	32	22	184	27	15	22	64
74	16	54	22	38	60	23	32	22	197	28	18	16	62
75	22	48	23	38	60	24	30	25	200	11	16	11	38
76	36	68	19	30	54	19	29	14	165	30	18	19	67
77	14	19	21	41	53	20	34	22	191	11	13	10	34
78	23	30	9	24	41	23	28	26	151	17	20	18	55
79	29	20	16	33	53	19	29	20	170	16	18	15	49
80	16	41	25	41	57	23	37	28	211	14	10	10	34
81	18	33	18	37	61	18	36	21	191	18	14	20	52
82	20	46	24	34	57	23	36	19	193	11	10	13	34
83	6	5	25	40	46	16	36	23	186	17	26	15	58
84	32	24	23	37	52	24	37	19	192	18	14	11	43
85	20	58	18	34	50	16	35	20	173	10	18	16	44
86	25	33	14	23	40	14	23	20	134	15	19	17	51
87	18	54	22	33	49	20	31	21	176	20	21	17	58
88	27	33	23	41	64	22	36	24	210	12	13	8	33
89	8	53	24	45	69	24	40	30	231	8	9	3	20
90	23	49	19	29	39	13	31	22	153	16	19	20	55
91	21	59	26	39	63	25	35	34	212	16	12	10	38
92	40	56	18	30	57	21	26	23	175	17	20	12	49
93	23	37	15	35	63	17	32	22	184	27	15	22	64
94	24	55	25	40	67	23	38	30	223	21	13	11	45
95	20	58	18	34	50	16	35	20	173	10	18	16	44
96	19	56	12	29	36	20	27	25	149	30	19	15	64
97	25	49	24	33	45	17	34	22	175	11	10	4	25
98	32	31	15	30	56	19	28	19	167	15	12	18	45
99	21	27	21	36	60	25	29	18	189	9	13	12	34
100	29	50	16	27	48	15	29	18	153	17	21	22	60

Table 2- Distribution of score of the respondents during their post- phase of menstruation

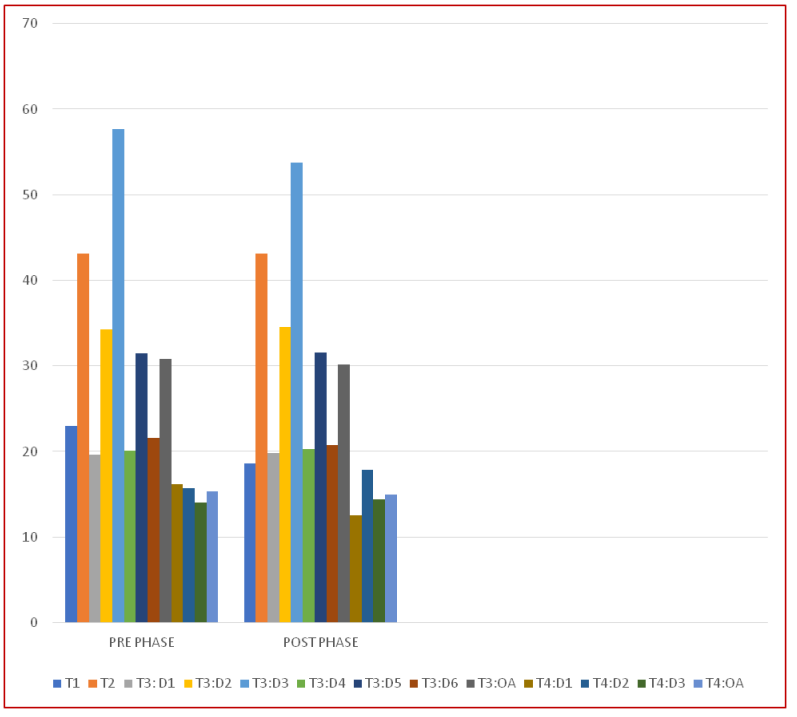
Sr. No.	T1	T2	T3-D1	T3-D2	T3-D3	T3-D4	T3-D5	T3-D6	T3-OA	T4-D1	T4-D2	T4-D3	T4-OA
1	12	29	20	34	62	25	29	18	188	5	16	13	34
2	29	34	18	33	48	18	30	22	169	1	23	17	41
3	17	37	20	32	54	21	28	19	174	20	20	20	60
4	8	47	28	43	71	25	41	29	237	1	13	7	21
5	12	24	17	26	38	16	15	12	124	14	22	23	59
6	10	4	22	31	55	18	34	19	179	3	22	13	38
7	14	33	18	30	55	23	32	23	181	9	14	11	34
8	0	39	24	42	67	21	38	23	215	8	14	8	30
9	13	53	18	36	63	25	27	23	192	19	5	16	40
10	22	44	19	31	50	18	27	14	159	12	22	16	50
11	12	49	28	41	59	23	33	24	208	6	16	9	31
12	1	50	28	44	73	25	38	30	238	1	11	7	19
13	7	49	25	41	54	22	32	27	201	13	16	10	39
14	30	61	26	42	59	21	31	26	205	6	20	6	32
15	6	8	20	44	61	25	38	25	213	7	18	11	36
16	9	40	25	45	65	24	38	28	225	8	13	9	30
17	32	54	19	30	64	20	30	20	183	14	16	9	39
18	45	62	14	28	50	17	30	13	152	13	20	11	44
19	25	43	17	31	60	20	33	14	175	19	28	26	17
20	29	34	18	33	48	18	30	22	169	1	23	17	41
21	25	36	11	26	45	18	28	18	146	22	17	26	65
22	8	58	20	38	61	24	33	22	198	13	16	9	38
23	19	49	24	34	55	23	38	25	199	8	13	14	35
24	21	49	14	35	49	21	30	19	168	17	29	17	63
25	27	37	25	43	59	24	38	29	218	7	17	7	31
26	18	46	13	26	37	18	28	20	142	25	21	18	64
27	7	19	25	41	68	25	39	26	224	10	20	7	37
28	23	21	27	41	56	23	26	20	193	5	19	8	32
29	36	41	11	24	38	14	29	17	133	19	22	22	63
30	14	33	20	32	56	18	27	20	173	14	17	13	44
31	5	45	26	42	63	25	39	28	223	7	7	8	22
32	10	47	22	39	55	22	36	27	201	8	15	15	38
33	1	51	28	45	72	21	39	28	233	5	11	8	24
34	12	59	20	34	58	25	29	22	188	10	10	9	29
35	19	62	25	41	67	20	35	28	216	9	15	4	28
36	36	47	23	25	49	16	33	19	165	12	14	17	43
37	0	36	28	39	63	21	41	22	214	6	10	3	19
38	14	43	26	38	64	24	32	22	206	15	10	18	43
39	22	44	19	31	50	18	27	14	159	12	22	16	50
40	6	32	22	35	51	19	30	21	178	14	13	8	35
41	30	28	14	33	49	17	31	12	156	13	19	16	48
42	39	57	17	32	47	22	29	19	166	16	23	24	63
43	18	46	13	26	37	18	28	20	142	25	21	18	64
44	32	60	20	37	57	25	36	28	203	10	16	9	35
45	12	29	20	34	62	25	29	18	188	5	16	13	34
46	17	52	27	37	61	20	34	22	201	8	12	12	32
47	30	34	11	39	52	13	30	20	165	14	23	15	52
48	19	19	21	35	59	21	29	16	181	12	13	19	44
49	6	51	20	34	56	21	33	22	186	11	15	9	35
50	17	61	16	30	44	22	29	16	157	7	17	8	32

51	18	37	24	38	49	21	35	28	195	13	17	18	48
52	28	47	16	33	42	18	22	12	143	24	21	17	62
53	13	31	27	40	60	25	33	25	210	7	10	9	26
54	15	65	24	37	71	22	37	30	221	17	16	9	42
55	39	57	17	32	47	22	29	19	166	16	23	24	63
56	27	51	16	36	50	19	29	24	174	14	25	19	58
57	23	59	23	39	65	21	37	19	204	20	21	21	62
58	3	56	26	41	61	23	35	22	208	9	8	9	26
59	21	67	15	31	51	17	35	21	170	14	22	20	56
60	27	44	12	23	43	13	22	16	129	16	23	24	63
61	0	31	28	39	60	24	41	24	216	8	16	13	37
62	10	19	20	33	54	17	31	20	175	17	21	18	56
63	30	55	15	33	39	17	34	14	152	21	28	15	64
64	21	61	19	41	60	23	41	25	209	14	17	15	46
65	30	55	15	33	39	17	34	14	152	21	28	15	64
66	14	34	20	31	45	16	26	26	164	14	17	18	49
67	10	38	24	37	55	23	35	22	196	15	20	11	46
68	27	44	12	23	43	13	22	16	129	16	23	24	63
69	25	43	17	31	60	20	33	14	175	19	28	26	73
70	19	43	23	37	56	25	36	18	195	13	12	17	42
71	13	61	26	33	63	25	30	21	198	19	17	19	55
72	6	17	20	37	57	21	35	20	190	6	12	14	32
73	22	47	21	35	60	18	40	23	197	20	18	19	57
74	15	51	24	30	50	18	31	25	178	16	13	13	42
75	30	28	22	39	59	21	37	23	201	7	19	12	38
76	21	61	19	41	60	23	41	25	209	14	17	15	46
77	13	23	24	40	54	23	41	24	206	8	15	8	31
78	27	44	12	23	43	13	22	16	129	16	23	24	63
79	30	28	14	33	49	17	31	12	156	13	19	16	48
80	5	44	28	39	59	24	39	27	216	12	9	10	31
81	14	33	20	32	56	18	27	20	173	14	17	13	44
82	31	56	26	37	63	25	37	15	203	6	13	10	29
83	4	9	25	38	50	15	29	23	180	15	23	13	51
84	13	30	25	40	61	24	41	24	215	12	16	10	38
85	26	60	11	36	44	16	34	20	150	11	15	13	39
86	38	37	15	27	40	14	21	21	138	17	21	17	55
87	22	30	20	28	46	19	32	20	165	18	17	16	51
88	22	63	20	36	44	24	37	28	189	21	20	17	58
89	28	50	16	37	51	17	30	24	175	17	20	19	56
90	3	73	18	33	60	21	34	22	188	14	26	21	61
91	13	56	19	34	52	21	29	21	176	11	15	11	37
92	12	34	18	37	53	22	33	17	180	14	26	20	60
93	45	62	14	28	50	17	30	13	152	13	20	11	44
94	12	24	17	26	38	16	15	12	124	14	22	23	59
95	12	59	20	34	58	25	29	22	188	10	10	9	29
96	28	47	16	33	42	18	22	12	143	24	21	17	62
97	27	51	16	36	50	19	29	24	174	14	25	19	58
98	12	24	17	26	38	16	15	12	124	14	22	23	59
99	30	34	11	39	52	13	30	20	165	14	23	15	52
100	17	61	16	30	44	22	29	16	157	7	17	8	32

Table 3-Comparative analysis of the respondents in pre and post phase of menstruation

	PRE-PHASE		POST- PHASE			
Categories	Mean	SD	MEAN	S.D	t value	Remarks
T1	23.01	9.49	18.67	10.57	3.06	Statistically Significant at 0.01 level
T2	43.14	14.30	43.2	14.32	0.03	Not Significant
T3 : D1	19.69	4.70	19.87	4.93	0.26	Not Significant
T3 : D2	34.34	5.51	34.58	5.37	0.31	Not Significant
T3 : D3	57.71	8.002	53.79	8.72	3.53	Statistically Significant at 0.01 level
T3: D4	20.14	3.74	20.31	3.50	0.33	Not Significant
T3: D5	31.51	5.26	31.61	5.65	0.15	Not Significant
T3: D6	21.64	4.47	20.81	4.80	1.26	Not Significant
T3:OA	30.83	14.55	30.16	13.19	0.34	Not Significant
T4: D1	16.21	5.26	12.6	5.52	4.73	Statistically Significant at 0.01 level
T4: D2	15.76	4.59	17.93	5.07	3.17	Statistically Significant at 0.01 level
T4: D3	14.08	5.40	14.43	5.47	0.45	Not Significant
T4 : OA	15.35	1.12	14.98	2.71	1.26	Not Significant

Figure 1- Graphical representation of the comparative analysis of pre and post phase of menstruation of the subjects



Discussions

The premenstrual symptoms screening tool revised for adolescents (PSST-A) has been employed to identify core premenstrual stress symptoms and other

premenstrual symptoms. In this dimension, it has been found that the subjects scored below average in pre and post screening. From the mean scores, it has been found that the mean of the subjects screened before the menstruation was higher, compared to their post menstrual screening (Pre-Mean = 23.01, Post Mean = 18.67). From the SD scores, it has shown that subjects showed slightly more variability in their scores in post screening (Pre SD = 9.49, Post SD = 10.57). The t value (3.06) has been found statistically significant at 0.01 level. It implies that the difference between mean scores of this dimension has been found statistically significant. The results are very much in line with the previous research findings (Sharma, P et al., 2008) which has indicated that the symptoms of premenstrual tension and its consequences are much more prevalent in the premenstrual phase in comparison to the post menstrual phase. The results are also found in contrary with (Lauren Sharkey, 2020).

In the dimension of measure of coping strategies, it has been examined that the female subjects scored average in pre and post phase of menstruation. From the mean scores, it has been seen that the mean scores of coping were higher in the post phase as compared to the pre phase coping level. (Pre-Mean = 43.14, Post Mean = 43.2). Thus, it may be said that coping strategies in pre-menstruation are found to be more prominent among the subjects who are in post menstrual phase. From the SD scores (Pre SD = 14.30, Post SD = 14.32). It reflects that subjects showed slightly more variability in their scores in coping levels of post phase. The t value (0.03) has not been found to be significant. It indicates that the difference of mean scores is due to chance factors. The present findings are similar to previous research studies (Kwabena Acheampong et al,2019) who also mentioned females are better coped during the post menstrual phase. The results have been found opposite to other research findings. (Warren, C. J., & Baker, S.,1992 and Fontana, A. M., & Palfai, T. G., 1994)

Well-being index is used to study the concept of well-being which indicates individual satisfaction in different domains of one's life. This test is implied to assess the different dimensions and their levels of well-being. In the dimension of emotional well-being, it has been found that the subjects scored above average level of emotional well-being in both pre and post phases of menstruation. From the result it was seen that the mean scores (Pre-Mean = 19.69, Post Mean = 19.87) of emotional well-being were lower in the pre phase as compared to the post phase. The SD scores (Pre SD = 4.70, Post SD= 4.93) indicated slightly variability in their pre phase level of emotional well-being as compared to the post phase level of the emotional well-being. The t value (0.26) has not been found to be significant. It indicates that the difference of mean scores is due to chance factors. Present findings have been found similar to the previous research findings (Afshan Tabassum, Sadaf Ahmed & Shamoon Noushad ,2015) which also narrate that emotional well-being was lower in premenstrual phase. The results prove contrary to other research findings (De Ronchi et al.,2005) of which indicates that emotional well-being gets better during the follicular phase.

The dimension of psychological well-being indicates the challenges that an individual encounters as they strive to function fully and realize their unique talents. In this dimension, the result showed that female students scored above average level of psychological well-being. It has been found that the mean scores

of pre phase were less than the post phase (Pre-Mean = 34.34, Post Mean = 34.58). The post phase showed slightly higher mean score which indicates slightly higher psychological well-being in comparison to the pre phase. From the SD scores (Pre SD = 5.51, Post SD = 5.37) it has been found that the pre phase of psychological well-being showed slightly more variability of scores as compared to post phase of psychological well-being. The t value (0.31) has not been found to be significant. It indicates that the difference of mean scores is due to chance factors. The result in this area is very much associated with the previous research studies (Jang, D., & Elfenbein, H. A. ,2018) found that the pre phase has a lot of psychological and mental health related issues which impact the psychological well-being. Which indicates that psychological well-being has been found better in the post phase as compared to the pre phase of menstruation. The findings also prove contrary to other research studies [(Garwood and Allen (1979), Brooks-Gunn and Ruble (1980)] found that adolescents viewed menstruation as natural, and not very distressing or bothersome. Thus, their psychological well-being was not deteriorated.

The dimension of social well-being indicates whether and to what degree the individuals are functioning well in their social world. In this dimension, the result indicated that the female adolescents score high levels of social well-being in the pre phase and above average level of social well-being in the post phase. From the mean scores, it has been found that the mean of social well-being measured before the menstruation was higher than the mean score of social well-being measured after the menstruation (Pre-Mean = 57.7, Post Mean = 53.79). From the SD scores (Pre SD = 8.002, Post SD = 8.72) it has been seen that the subjects scored slightly more variability in the post phase as compared to the pre phase of menstruation. The t value (3.53) has been found significant at 0.01 level. This implies that the difference between the means of pre and post phase were statistically significant. The present findings in the dimension of social well-being are very much similar to research studies (Conger,1973). The results found the opposite with different research findings (Nisar, N et al, 2008) which indicated that pre phase of menstrual cycle unpleasantly affects the social well – being of females. Finally, it may be said that in the present study, the subjects during the premenstrual phase showed more social well-being compared to the post menstrual phase.

The dimension of spiritual well-being focuses on different aspects. The personal included a focus on the individual human spirit, the communal aspect included a focus on the in-depth interpersonal relations, the environmental aspect included a focus on connectedness with nature, and the global aspect included a focus on faith. In this dimension, the results indicated that the subjects scored high level of social well-being in both the phases. The mean scores showed that the level of spiritual well-being in the pre phase was higher as compared to the level of social well-being in the post phase (Pre-Mean = 20.31, Post Mean = 20.14). From the SD scores (Pre SD = 3.50, Post SD = 3.74) it has been found that pre phase showed lesser variability among scores as compared to the post phase of menstruation. The t value (0.33) has not been found to be significant. It indicates that the difference of mean scores is due to chance factors. From the section of spiritual well-being, the findings of the present study are very much in line with different research findings (Lustyk, et. Al ,2006) which indicates that during the pre-

phase of menstruation, people experience more spiritual well-being as compared to the post phase. The results are also contrary to the other result findings (Clennel B, 2010).

The dimension of self-awareness indicates the importance of the ability to focus on ourselves. It involves being aware of various aspects of the individual self-including behavior, traits and feelings. The results showed that the mean scores of the post phase are higher than the pre phase of menstruation. It reveals that the level of self-awareness well-being is slightly higher in the post phase as compared to the pre phase of menstruation (Pre-Mean = 31.51, Post Mean = 31.62). The level of self-awareness well-being was seen as above average in both the phases of menstruation. From the SD scores (Pre SD = 5.26, Post SD = 5.65) it reflects that the post phase has shown slightly more variability among their scores as compared to the pre phase of menstruation. The t value (0.14) has not been found to be significant. It indicates that the difference of mean scores is due to chance factors.

From the section of self-awareness well-being, the findings of the present study are very much in line with different research findings (Agarwal N et al., 2018) which indicates that before the onset of menstruation females have slightly higher level of self-awareness as they are informed about the phase by their female family members. The results are also contrary to the other result findings (Jain RB, 2013).

The dimension of physical well-being focuses on the ability to maintain a healthy quality of life, that permits us to get most out of our daily routine activities without any fatigue or distress. The results scores in this dimension showed above average level of physical well-being in both the phases of menstruation. The mean scores (Pre-Mean = 21.64, Post Mean = 20.81) indicated that the level of physical well-being was slightly less in the post phase as compared to the pre phase of menstruation. From the SD scores (Pre SD = 4.47, Post SD = 4.80) it was reflected that the post phase showed slightly higher variability in the physical well-being level as compared to the pre phase of menstruation. The t value (1.26) has not been found to be significant. It indicates that the difference of mean scores is due to chance factors. From the section of physical well-being, the findings of the present study are very much in line with different research findings(Logue, C. M., & Moos, R. H. ,1988) which indicates that during the pre-phase of menstruation, people experience more physical well-being The results are also contrary to the other result findings (Nur Azurah et al., 2013).

The overall result of the well-being index showed low level of well- being in both the phases of menstruation. The mean scores (Pre-Mean= 30.83, Post Mean= 30.16) indicated that the overall level of well-being was slightly more in the pre phase of menstruation as compared to the post phase. From the SD scores (Pre SD= 14.55, Post SD= 13.19). It was indicated that the pre phase showed slightly higher variability in the overall well-being level as compared to the prost phase of menstruation. The t value (0.34) has not been found to be significant. It indicates that the difference of mean scores is due to chance factors.

From the overall result of the well-being index, the findings of the present study are very much in line with different research findings (Moreno-Black, G., & Vallianatos, H. (2005)) which indicate better level of well-being in the pre phase as compared to the post phase. The results are also contrary to the other result findings (Sanders et al, 1983).

Adjustment is the way by which an individual maintains an equilibrium between the needs and the situations. Kulshrestha (1979) enlightened that, the adjustment process is a way in which a person tries to deal with tensions, stress ,conflicts, etc., and meet his or her wants or needs. In this process, the individual also tries to uphold harmonious relationship with the environment. L.F. Shaffer (1961) described that; adjustment is the process by which an individual maintains a balance between its needs and the situations that impact the satisfaction of these needs. In the area of emotional adjustment ,results showed average level of emotional adjustment in the pre phase whereas above average level of emotional adjustment in the post phase of menstruation. Individual scoring high tends to be unsatisfactory adjusted, low scores of individual indicate satisfactory adjustment. The mean scores (Pre-Mean = 16.21, Post Mean = 12.6) reflected that the emotional adjustment is lower in the pre phase as compared to the post phase. From the SD scores (Pre SD = 5.26, Post SD = 5.52) it was found that post phase showed slightly more variability as compared to pre phase of menstruation. The t value (4.73) has been found statistically significant at 0.01 level. It implies that the difference between mean scores of this area has been found statistically significant.

The results are very much in line with the previous research findings (Yu-Ting Chang et al., 2008) which has indicated that the symptoms of premenstrual tension and its consequences impacted the emotional adjustment in comparison to the post menstrual phase. The results are also found in contrary with (Patil, P. ,2016). The social adjustment area scores were calculated and the results showed that both the phases fall under the same level of adjustment i.e., average level of social adjustment. The mean scores showed that the female subjects scored higher in the post phase and this indicated unsatisfactory adjustment as higher scores indicate unsatisfactory adjustment. Whereas the female subjects scored lower in the pre phase which indicated better adjustment as the lower the score, better the adjustment (Pre-Mean = 15.76, Post Mean = 17.93). From the SD scores (Pre SD = 4.59, Post SD = 5.07) it was found that the post phase has shown slightly more variability than the pre phase of menstruation. The t value (3.17) has been found statistically significant at 0.01 level. It implies that the difference between mean scores of this area has been found statistically significant. The results are very much in line with the previous research findings (Patil, P. ,2016) which has indicated better level of social adjustment. The results are also found in contrary with (Kumar, A., & Srivastava, K., 2011).

The educational area of adjustment was calculated and the results showed that both the phases fall under the same level of adjustment i.e., average level of educational adjustment. From the mean scores (Pre-Mean = 14.08, Post Mean = 14.43) it was found that the mean scores of post phase were higher which reflected lower level of adjustment as higher scores indicate unsatisfactory adjustment. Whereas the mean scores were lower in the pre phase which showed

higher level of adjustment as the lower the score, better the adjustment. From the SD scores (Pre SD = 5.40, Post SD = 5.47) it was seen that the pre phase reflected lesser variability as compared to the post phase of menstruation. The t value (0.46) was not found to be significant. It indicates that the difference of mean scores is due to chance factors. The present findings in the area of educational adjustment are very much similar to research studies (Bernstein, B. E. ,1977) No Para menstrual decline was found in mental performance. The results found the opposite with different research findings (Patwardhan, V. ,2007) which indicated that girls were more maladjusted in the area of education before their periods.

The overall result of the adjustment showed higher level of adjustment in both the phases of menstruation. From the mean scores (Pre- mean=15.35, Post mean= 14.98) it was found that the mean scores were more in the pre phase of menstruation which indicated unsatisfactory adjustment as higher the scores, lower is adjustment. It can be said that post phase showed higher level of adjustment as compared to the pre phase of menstruation as the lower the score, better is adjustment). From the SD scores (Pre SD= 1.12, Post SD=2.71)) it was seen that the pre phase reflected lesser variability as compared to the post phase of menstruation. The t value (1.26) was not found to be significant. It indicates that the difference of mean scores is due to chance factors. The results are very much in line with the previous research findings (Pitangui et.al,2013) which has indicated that various factors of menstruation impact the adjustment level of female adolescents during their pre phase as compared to the post phase of menstruation. The results are also found in contrary with (Grief & Ulman, 1982).
In the analysis of overall assessment of different tools, interesting results have come out. In premenstrual screening the subjects scored higher in pre phase of menstruation and in the section of wellbeing the same mentioned above group showed more prominence. Where as in coping strategies and adjustment scale subjects in post phases show better results. Subjects in pre phase generally show premenstrual symptoms which may affect their well – being. It is evident from the previous research findings (Warren, C. J., & Baker, S.,1992 and Fontana, A. M., & Palfai, T. G., 1994). During post phase of menstruation, When the tension of menstruation has diminished, then the subjects showed better coping and adjustment with the environment. The above finding is also very much in line with previous research studies. (Kwabena Acheampong et al,2019).So, the title of the present study has been found very apt and justified and it has rightly found it out that menstruation has several Impact of Menstruation on Physical and Mental Health of young adolescent girls.

Conclusions

It maybe be concluded that there was severe impact of the premenstrual symptoms screening tool revised for adolescents (PSST-A), among the adolescence during their pre-phase of menstruation. Premenstrual tension and its consequences are much more prevalent during premenstrual phase. In psychological well-being the subjects in pre-phases showed more disturbance. The physical well- being also has found deteriorated during the pre-phase of menstruation.

In the dimension of coping strategies, social and educational area of adjustment, have been found better among the subjects during their post phases of menstruation. In some sections of this study, it has been found that the subjects showed very less difference during the pre and post phase of menstruation these are- self-awareness, educational area of adjustmentIn the present study, from the results, it may be said that there is a significant effect of physical and mental health on menstruation. Thus, the null hypothesis has been rejected and alternative hypothesis has been accepted.

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