ORIGINAL ARTICLE

To Assess and Evaluate the Premenstrual and Menstrual Comprehensive Symptoms Scale for Grading the Menstrual Problems among Adolescent Girls

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Abstract

Adolescence is defined by the World Health Organization (WHO) as the period between the ages of 10 and 19. In India, adolescents make up 19.3% of the population. The onset of menarche marks this era. Menstrual cycle disorders or irregularities rank among the most common gynecological issues among adult females, particularly adolescents. The target population's most common menstrual issues include dysmenorrhea and premenstrual symptoms. In India, only 48% of teenage females know anything about menstruation before their first period. Extensive research instruments were not employed in the investigation to assess menstrual issues.

Objective of study:

- To assess the grading of premenstrual symptoms and menstrual symptoms.
- To assess the premenstrual and menstrual symptoms score for different variables.
- To check the reliability of the scale.

Material: A standardized self-made comprehensive scale used.

Research design: Observational, correlational, Interventional study.

Techniques: Purposive sample technique.

Sample size: A total of 12 adolescent girls in Wardha schools.

Result: The study finding shows that a total of 12 samples are involved in the study of Premenstrual symptoms, and physical symptoms with a mean 24.8333, standard deviation 14.55918, minimum 14.00 and maximum 62.00, affective symptoms with mean 2.2500, The average symptoms are 3.36087, minimum and maximum values are 10.00; the average behavior and concentration symptoms are 0.6667, minimum and maximum values are 5.00; the average negative symptoms are 10.4167, minimum and maximum values are 8.00 and 19.00; the average PMDD symptoms are 27.5833, minimum and maximum values are 20.00 and 50.00; the average combined symptoms are 11.7500, minimum and maximum values are 7.00 and 30.00. For menstrual symptoms, physical symptoms were recorded with a mean of 26.7500, standard deviation: Of 14.89432, with minimum of 14.00 and maximum of 55.00 Average of 5.5833, standard deviation of 5.17790, lowest of 0.00, maximum of 15.00, were recorded for affective symptoms. Focus and conduct indicators were noted with an average of 1.1667, standard deviation of 2.51661, lowest 0.00, and highest 7.00, PMDD was assessed with a mean 6.3333, standard deviation of 3.82179, minimum of 3.00 and maximum of 16.00, and standard deviation of 4.83281, minimum 7.00 and maximum 21.00. Negative symptoms were reported with mean of 10.4167, PBAC with a mean 5.5833, standard deviation 1.31137, minimum 4.00 and maximum 8.00. The mean and standard deviation of dysmenorrhea were 12.3333, 3.86907, and 10.00 and 23.00, respectively, for the minimum and maximum values. The mean for menorrhagia was 5.5833, standard deviation of 1.31137, minimum of 4.00 and maximum of 8.00 and amenorrhea was recorded with a mean of 0.0, standard deviation 0.0, minimum 0.00 and maximum 0.00.

Conclusion: According to the findings of the current study, premenstrual and menstrual symptoms scores for various variables are meaningful and can be used to gauge menstrual issues. A thorough teaching program on menarche and menstrual issues in schools could support girls in seeking appropriate medical care and coping more effectively.

Keywords: Adolescent's girls, Comprehensive menstrual symptoms, Gynecology, Menstruation, Obstetrics.

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Introduction

Adolescence, a period marking the change from infancy to adulthood, is marked by a rapid rate of development of the body, brain, endocrine system, emotions, and senses as well as a transition shifting from total reliance to a modicum of independence. The Adolescence is a time when girls prepare physically and mentally for becoming a mother in a healthy way. In addition to having an impact on their health, adolescent girls' health has a direct bearing on the health of future populations because they are the primary carriers of genetic material. In India, girls under the age of 20 make up over a quarter of the population.[1]

The monthly experiences of a woman are among the things that impact her reproductive health, which adds a potent tool for evaluating typical development and excluding out pathological

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conditions from the mix. Menstrual cyclic disorders or irregularities are a common gynecological issue for female adults, particularly adolescents, and are a significant source of anxiety for both the individual and their family. Studies concluded that, a significant majority of women of reproductive age experience.[2]

Among the many different menstrual illnesses that can afflict a woman are premenstrual symptoms, dysmenorrhea, irregular menstruation, amenorrhea, oligomenorrhea, polymenorrhea, unusual vaginal bleeding, and menorrhagia.[3]

Studies reveal that a sizable proportion of women of reproductive age struggle with period-related health issues. In addition to being expensive, menstrual problems are one of the leading causes of school absences and low academic performance in young females. Knowledge that boosts their self-esteem and academic achievement. The menstrual cycle of a woman can greatly influence her reproductive health. However, following a few years of menarche, menstruation develops a new rhythm that many young girls find difficult to comprehend. The target population's most typical menstrual issues (dysmenorrhea and premenstrual symptoms).[4,5]

Menarche typically starts at a 12.4-year-old average age, taking place in the age range of 10–16. The menarche age, is a crucial stage in an it's an important time in a girl's life and a part of the intricate process of her emotional and physical development. The first menstrual period, or menarche, is referred to as such. Most women associate the Menarche with puberty, which is frequently considered as a sign of fertility from both a social and a medical perspective.[6,7] Girls normally reach menarche between the ages of 10–16, however, this age varies significantly by geographic location, race, ethnicity, and other specific traits, including dietary variables. Cycle disorders or irregularities are a major source of anxiety for women and their families as well as a serious gynecological problem for adult females, particularly adolescents. Research has indicated that a significant segment of women within the reproductive age group experience health problems associated with their menstruation. Any departure from the regular cycle is considered an abnormal menstrual cycle. Adolescent girls are more likely to experience menstruation disorders such as premenstrual syndrome, oligomenorrhea, amenorrhea, menorrhagia, hypomenorrhea, polymenorrhea, and dysmenorrhea.[8,9] The term dysmenorrhea refers to uncomfortable periods, which may involve intense menstrual cramps. Amenorrhea is defined as three months without a monthly period followed by a few menstrual periods. that occur more than 35 days apart is known as oligomenorrhea and frequent menstrual periods that occur less than 21 days apart are known as polymenorrhea.[10] Menorrhagia is defined as bleeding that exceeds 8 days in duration on a regular basis. Under the condition known as hypomenorrhea, there may be very little, transient uterine bleeding. In India, just 48% of teenage females are aware of menstruation before their first period.

Objective of the Study

- To assess the grading of premenstrual symptoms and menstrual symptoms.
- To assess the premenstrual and menstrual symptoms score for different variables.
- To check the reliability of scale.

Material

A standardized self-made comprehensive scale used.

Source of support: Nil
Conflict of interest: None

Research Design

Observational, core relational, interventional study.

Techniques

Purposive sample technique.

Sample Size

A total of 12 adolescent girls in Wardha schools.

Results

The study finding shows that a total of 12 samples are involved in the study of premenstrual symptoms, physical symptoms with a mean 24.8333, standard deviation 14.55918, minimum of 14.00 and maximum of 62.00, affective symptoms with the mean of 2.2500, standard deviation 3.36087, minimum 0.00 and maximum 10.00, concentration/behavior symptoms with the mean of 0.6667, standard deviation 1.49747, minimum 0.00 and maximum 5.00, negative symptoms with the mean of 10.4167, standard deviation 3.62963, minimum 8.00 and maximum 19.00, PMDD with the mean of 27.5833, standard deviation 10.42251, minimum 20.00 and maximum 50.00 and combined symptoms with mean 11.7500, standard deviation 7.33764, minimum 7.00 and maximum 30.00. For menstrual symptoms, physical symptoms recorded with mean 26.7500, standard deviation 14.89432, minimum 14.00 and maximum 55.00, affective symptoms recorded with mean 5.5833, standard deviation 5.17790, minimum 0.00 and maximum 15.00, concentration/behavior symptoms recorded with mean 1.1667, standard deviation 2.51661, minimum 0.00 and maximum 7.00, Negative symptoms recorded with mean 10.4167, standard deviation 4.83281, minimum 7.00 and maximum 21.00, PMDD recorded with mean 6.3333, standard deviation 3.82179, minimum 3.00 and maximum 16.00, PBAC recorded with mean 5.5833, standard deviation 1.31137, minimum 4.00 and maximum 8.00, dysmenorrhea recorded with mean 12.3333, standard deviation 3.86907, minimum 10.00 and maximum 23.00, menorrhagia recorded with mean 5.5833, standard deviation 1.31137, minimum 4.00 and maximum 8.00 and amenorrhea recorded with mean 0.0, standard deviation 0.0, minimum 0.00 and maximum 0.00 (Tables 1 and 2).

Discussion

The results of this study describe the menstrual experience of healthy women, providing a starting point for comparison with women who report having menstrual problems. In a community-based sample of two menstrual cycles, The fifty physical, social, and psychological symptoms of 900 women were recorded every day in a notebook. Thirteen items from the literature on premenstrual syndrome (PMS) and 25 items from the DSM-IV criteria for premenstrual dysphoric disorder (PMDD) were included. Positively phrased variations of some of the PMDD items were found in an additional 12 items. The study's focus was on women's health, not menstruation specifically, the women were informed. Time sequence charts revealed that the first day of menstruation was the peak for every symptom, with severity levels reaching two standard deviations above the mean. When symptoms were

Table 1: Descriptive statistics of premenstrual symptoms score for different variables (Premenstrual symptoms)

Variables	*N*	*Minimum*	*Maximum*	*Mean*	*Standard deviation*
Physical symptoms	12	14.00	62.00	24.8333	14.55918
Affective symptoms	12	0.00	10.00	2.2500	3.36087
Concentration/behavior symptoms	12	0.00	5.00	0.6667	1.49747
Negative symptoms	12	8.00	19.00	10.4167	3.62963
PMDD	12	20.00	50.00	27.5833	10.42251
Combined symptoms	12	7.00	30.00	11.7500	7.33764

Table 2: Descriptive statistics of menstrual symptoms for different variables (Menstrual symptoms)

Variables	*N*	*Minimum*	*Maximum*	*Mean*	*Standard deviation*
Physical symptoms	12	14.00	55.00	26.7500	14.89432
Affective symptoms	12	0.00	15.00	5.5833	5.17790
Concentration/behavior symptoms	12	0.00	7.00	1.1667	2.51661
Negative symptoms	12	7.00	21.00	10.4167	4.83281
PMDD	12	3.00	16.00	6.3333	3.82179
PBAC	12	4.00	8.00	5.5833	1.31137
Dysmenorrhea	12	10.00	23.00	12.3333	3.86907
Menorrhagia	12	4.00	8.00	5.5833	1.31137

phrased positively as opposed to negatively, women were more likely to support distress. This study illustrates the lag between peak symptom severity at menstrual onset and hormonal changes during the luteal phase, underscoring the critical need to reduce bias in menstrual symptom self-reports. How and amount to which women with a suspected illness deviate from this baseline trend requires more investigation.[11,12]

Current research has demonstrated how the menstrual cycle phase affects anxiety and PTSD results. It also explores potential neurobiological underpinnings for these effects and identifies methodological barriers to further scientific research. PTSD, as well as the biochemical and psycho-physiological mechanisms connected to anxiety and PTSD. Retrospective self-reports of premenstrual worsening of anxiety symptoms and the protective impact of estradiol on memory extinction learning in healthy women are the most consistent findings. The lack of a rigorous methodology for menstrual cycle phase assessment and conflicting definitions of menstrual cycle phases likely contribute to other conflicting results. Personalized prevention and therapies for women require more study that addresses these constraints and integrates the intricate relationships between hormones associated to the menstrual phase, heredity, and psychological sensitivity.[13,14]

One study was done to evaluate the oligomenorrheic/amenorrheic (Oligo/Amen) sporty women's attitudes toward food and psychological traits after a 12-month nutrition intervention. Eating disorder is the main etiology of menstruation irregularities and energy deficit in female athletes.[15] While psychological therapy is recommended as part of treatment when food intake is raised, a major concern is whether or not increased food consumption exacerbates bad eating behaviors.[16] Intention-to-treat analysis of the refuel.

A controlled experiment with random assignment (#NCT00-392873) involving 113 female athletes [age (mean ± SEM): 20.9 ± 0.2 kg/m^2; BMI: 21.9 ± 0.4 years]. Women were randomized to either continue their physical activity and maintain their energy consumption (Oligo/Amen Control, $n = 36$) or increase it by 20–40% beyond baseline calorie requirements (Oligo/Amen + Cal, $n = 40$). Ovulating women in the reference group (OVref, $n = 37$) continued their diet and exercise regimens. Body composition, eating attitudes, stress, and depressive symptoms were assessed at baseline and every 3 months. Compared to the OVref group, the Oligo/Amen groups were more likely to be skinny, have cognitive impairment, and be at risk for eating disorders at baseline ($p < 0.001$). In comparison to the Oligo/Amen control group, the Oligo/Amen + Cal group did not exhibit psycho-behavioral outcomes, but there was an increase in fat mass and % body fat ($p < 0.010$) as a result of higher calorie consumption. Regardless of group, cognitive restraint decreased ($p < 0.001$) and coping resilience increased ($p < 0.007$) over 12 months, while perceived stress ($p = 0.143$) and depressive symptoms ($p = 0.344$) did not change. In Oligo/Amen women who do sports, a long-term nutritional intervention that consists of a gradual increase in caloric intake under the supervision of a qualified dietitian and psychologist improves body weight and fat mass without worsening eating disorders, stress, or depressive symptoms (Table 3).[14]

Using a descriptive study design, 315 female students were chosen at random to take part in the research. The participants were given a standard questionnaire to complete. The data were evaluated using the Statistical Package for Social Sciences (SPSS) 16.0, and the results were shown in tables with frequency counts and percentages. Chi-square was used to run tests that were statistically significant. Dysmenorrhea was reported in 78.1% (242/310) with the majority ignoring the pain. Less than average 40.6% (126/310) of the participants had high knowledge about dysmenorrhea and 63.5% (197/310) had a negative attitude towards dysmenorrhea. Restrictions on physical activities were one of the main impacts of dysmenorrhea, affecting 77.2% of patients (187/242) and 59.1% of patients (143/242). The findings revealed a statistically significant association ($p < 0.01$) between the age of the respondents and the kind of dysmenorrhea treatment they sought.[16–19]

Table 3: Reliability analysis

Premenstrual symptoms		*Menstrual symptoms*	
Physical symptoms		*Physical symptoms*	
Cronbach's alpha	No. of items	Cronbach's alpha	No. of items
0.945	14	0.940	14
Affective symptoms (Mood changes)		Affective symptoms (Mood changes)	
Cronbach's alpha	No. of items	Cronbach's alpha	No. of items
0.912	11	0.919	11
Changes in concentration (Behavioral symptoms level)		Changes in concentration (Behavioral symptoms level)	
Cronbach's alpha	No. of items	Cronbach's alpha	No. of items
0.868	6	0.944	6
Negative symptoms		Negative symptoms	
Cronbach's alpha	No. of items	Cronbach's alpha	No. of items
0.932	8	0.951	8
Premenstrual dysphonic disorder		Premenstrual dysphonic disorder	
Cronbach's alpha	No. of items	Cronbach's alpha	No. of items
0.985	4	0.848	4
Combined symptoms		Dysmenorrhea	
Cronbach's alpha	No. of items	Cronbach's alpha	No. of items
0.925	7	0.720	4

Recommendations

- Doctors should inform girls and others who look after them, such as parents or guardians, about the normal cycle length range for subsequent menses as well as what to anticipate from their first menstrual period.
- When girls start menstruation, doctors should inquire about the girls' menstrual pattern and the first day of their last menstrual cycle during every preventive care or comprehensive appointment.
- Early detection of possible health issues for adults may be enhanced by identifying irregular menstruation cycles throughout youth. Clinicians need to have an understanding of the adolescent girl patient's menstrual patterns, the capacity to distinguish between normal and atypical menstruation, and the ability to assess the patient maturity.

Conclusion

The present results of the study that has been indicating that the premenstrual and menstrual symptoms scores for various factors are meaningful and can be used to evaluate menstrual issues.

References

1. Negriff S, Dorn LD, Hillman JB, et al. The measurement of menstrual symptoms: Factor structure of the menstrual symptom questionnaire in adolescent girls. J Health Psychol 2009;14(7):899–908. DOI: 10.1177/1359105309340995.
2. Baker FC, Lee KA. Menstrual cycle effects on sleep. Sleep Med Clin 2018;13(3):283–294. DOI: 10.1016/j.jsmc.2018.04.002.
3. Omidvar S, Bakouei F, Amiri F, et al. Primary dysmenorrhea and menstrual symptoms in Indian female students: Prevalence, impact and management. Global Journal of Health Science [Internet] 2015. DOI: 10.5539/gjhs.v8n8p1351.
4. Ameade EPK, Amalba A, Mohammed BS. Prevalence of dysmenorrhea among University students in Northern Ghana; Its impact and management strategies. BMC Women's Health 2018;18:39. DOI: 10.1186/s12905-018-0532-1.
5. Mahon JN, Rohan KJ, Nillni YI, et al. The role of perceived control over anxiety in prospective symptom reports across the menstrual cycle. Arch Womens Ment Health 2015;18(2):239–246. DOI: 10.1007/s00737-014-0456-1.
6. Negriff S, Dorn LD, Hillman JB, et al. The measurement of menstrual symptoms: Factor structure of the menstrual symptom questionnaire in adolescent girls. J Health Psychol 2009;14(7):899–908. DOI: 10.1177/1359105309340995.
7. Elmaoğulları S, Aycan Z. Abnormal uterine bleeding in adolescents. J Clin Res Pediatr Endocrinol 2018;10(3):191–197. DOI: 10.4274/jcrpe.0014.
8. Selin Elmaoğulları, ZeyraAycan. DOI: 10.4274/jcrpe.0014 Continuum (MinneapMinn) 2021;27(3):686–702. DOI: 10.1212/CON.0000000000001010.
9. Pavlović JM. Headache in women. Lancet Child Adolescent Health 2018;2(9):677–688. DOI: 10.1212/CON.0000000000001010.
10. Ackerman KE, Misra M. Amenorrhoea in adolescent female athlete Lancet Child Adolesc Health 2018;2(9):677–688. DOI: 10.1016/S2352-4642(18)30145-7.
11. Nillni YI, Rasmusson AM, Paul EL, et al. The impact of the menstrual cycle and underlying hormones in anxiety and PTSD: What do we know and where do we go from here? Curr Psychiatry Rep 2021;23(2):8. DOI: 10.1007/s11920-020-01221-9.

12. Garber AK, Cheng J, Accurso EC, et al. Weight loss and illness severity in adolescents with atypical anorexia nervosa. Pediatrics 2019;144(6):e20192339. DOI: 10.1542/peds.2019-2339.
13. Strock NCA, De Souza MJ, Mallinson RJ, et al. 12-months of increased dietary intake does not exacerbate disordered eating-related attitudes, stress, or depressive symptoms in women with exercise-associated menstrual disturbances: The REFUEL randomized controlled trial. Psychoneuroendocrinology 2023;152:106079. DOI: 10.1016/j.psyneuen.2023.106079.
14. Bahrami A, Avan A, Sadeghnia HR, et al. High dose vitamin D supplementation can improve menstrual problems, dysmenorrhea, and premenstrual syndrome in adolescents. Gynecol Endocrinol 2018;34(8):659–663. DOI: 10.1080/09513590.2017.1423466.
15. Manisha U, Anuradha L. Effect of high frequency transcutaneous electrical nerve stimulation at root level menstrual pain in primary dysmenorrhea. J Bodyw Mov Ther 2021;26:108–112. DOI: 10.1016/j.jbmt.2020.12.025.
16. Wong LP. Attitudes toward menstruation, menstrual-related symptoms, and premenstrual syndrome among adolescent girls: A rural school-based survey. Women Health 2011;51(4):340–364. DOI: 10.1080/03630242.2011.574792.
17. Strock NCA, De Souza MJ, Mallinson RJ, et al. 12-months of increased dietary intake does not exacerbate disordered eating-related attitudes, stress, or depressive symptoms in women with exercise-associated menstrual disturbances: The REFUEL randomized controlled trial. Psychoneuroendocrinology 2023;152:106079. DOI: 10.1016/j.psyneuen.2023.106079.
18. Huang C, Lin B, Yuan Y, et al. Associations of menstrual cycle regularity and length with cardiovascular diseases: A prospective study from UK Biobank. J Am Heart Assoc 2023;12(11):e029020. DOI: 10.1161/JAHA.122.029020.
19. Armour M, Ee CC, Hao J, et al. Acupuncture and acupressure for premenstrual syndrome. Cochrane Database Syst Rev 2018;8(8):CD005290. DOI: 10.1002/14651858.CD005290.pub2.