Estimation of Prevalence of Premenstrual Syndrome and Habit of Menstrual Hygiene Practice in Adolescent Students of A Medical University

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Abstract

Background: Premenstrual syndrome is characterized by cluster of symptoms that reoccur every month in luteal stage of a woman's menstrual cycle. Estimating frequency of premenstrual syndrome in teenagers was the goal of this research. As adolescents are new to these changes, it's also important to make them aware about habit of menstrual hygiene to avoid further health issues.

Methodology: Total 225 girl students of Health University, Bathinda, were invited for the study, participants were adolescent girls of age 18-19 years, campus residents and those were willing to participate in the study. An interactive session was taken for all the girl students of various constitutional colleges of Adesh University. Sociodemographic self-designed questionnaire was distributed (which included questions about their usage of sanitary pads, age at menarche etc.) along with daily records of severity of

problems was distributed and followed up the students for two months. Those students submitted fully filled record of two months, were given premenstrual symptoms screening tool for adolescents to calculate the premenstrual syndrome and premenstrual syndrome scale (PMSS) to calculate severity of the symptoms.

Result: The premenstrual syndrome was calculated from the data extracted from premenstrual symptoms screening tool used for adolescent in percentage form and prevalence of moderate to severe PMS in this study group was 80.92%. 98% participants showed moderate, intensity of the symptoms and only 1.9% were having mild severity of the symptoms. Adolescent girls were following menstrual hygiene protocols and were using commercial sanitary pad.

Keywords: premenstrual syndrome, PSST-A, PMSS, daily records of severity of problems and menstrual hygiene.

Introduction

The adolescence is the age of transformation from childhood to womanhood as tremendous changes occurs in body of the girl. Premenstrual syndrome (PMS) has a complex etiology yet not understood fully. The PMS symptoms include a variety of somatic, psychological, behavioral, affective, cognitive, neuro-vegetative, and autonomic symptoms which are experienced by women luteal stage of woman's menstrual i.e. a week before the menstruation. All women of all age from menarche to the menopause experience one of the other symptoms in their life.

WHO and International Statistical Classification of Diseases, Tenth Revision (ICD-10) guidelines state that symptoms must be present throughout the luteal phase and must go away when menstrual blood flow stops. Approximately one hundred fifty to two hundred symptoms and indicators are linked to premenstrual syndrome in women who have menstruation. Currently, there is no validated laboratory test available. (Derman et al., 2004). The commonest symptoms are breast tenderness, abdominal pain, legs pain, swelling of lower limb, water retention, irritability, abdominal blotting, change appetite and mood swings etc.

The guidelines of ACOG and NIMH states that the diagnosis can be made if a woman shows any symptom from somatic as well from the affective symptom list and symptoms should ease, once the flow starts (Kathleen & Gerrish, 2004). Prevalence estimates for PMS in scientific literature vary from forty percent to ninety percent. (Direkvand et al. (2013) & Ranjbaran et al. (2017).

With this background present research was undertaken to find prevalence of premenstrual syndrome and practice of hygiene during menstruation among adolescent girls of medical stream.

Methodology

Study design: Cross sectional descriptive study

Study participants: The adolescent girl students with age 18-19 years who were in 1st year or 1st/2nd semester of the program were recruited, during student induction program of the constitute colleges of Health University, Bathinda, Punjab, India.

Selection criteria: The guidelines of the American College of Obstetrics and Gynaecology and DSM- V, were considered;

Inclusion/Exclusion criteria: Girls residing in University campus hostels; who completely filled daily record of severity of symptoms problem (DRSP)

for previous consecutive two months and had at least one core affective and at least one core somatic symptom present, had attained menarche, regular menstruation were included whereas girls who were pre-diagnosed cases of hypothyroidism, asthma, epilepsy, pelvic inflammatory disease, endometriosis, polycystic ovary syndrome, psychosis and a bipolar disorder, somatic symptom disorder, participated in psychotherapy for same cause in the past or currently, pre diagnosed acute suicidal tendencies, taking antidepressant/antipsychotic or hormone therapy in last 3 months were excluded.

Total 225 girl students of Health University Bathinda, were invited for the study. Verbal and written consent were taken from the girls. 23 participants were excluded as they were not staying in the campus hostels of Adesh University. So, 202 girls were included in the study.

Diagnostic Tools

- Daily records of severity of problems (DRSP) for 02 months
- Premenstrual symptoms screening tool for adolescents (PSST-A)
- premenstrual syndrome scale (PMSS)

Data collection: Data collection was done in three stages.

First stage: Upon first interaction with students, an interactive lecture was organised for all the girl students of the constitute colleges of University, Bathinda Punjab. Socio-demographic data sheet which included questions about medical history, age at menarche, span of menstruation, type of sanitary pads usages, habit frequency of change of sanitary pads and habit of washing of genital organ during menstruation, was distributed among the students and collected in the same interaction after 20 minutes dully filled forms were collected and analysed of the complete questionnaire. Around 05 participants were excluded because they did not fulfil the inclusion criteria

Second stage: Daily Records of Severity of Problems (DRSP) Questionnaire was distributed to all the girls who were part of the study after first phase. Participants were asked to mark the symptoms only if they had experienced it. Follow up at individual level was done to motivate them to fill the DRSP daily and finally 197 participants completed.

Third stage: Premenstrual symptoms screening tool for adolescents (PSST-A) was used to diagnose premenstrual syndrome (Steiner et al. 2003), With a satisfactory Cronbach's alpha score of 0.90, tool's dependability was validated.

Confirmation of moderate-severe kind requires simultaneous fulfilment of following 3 conditions: Out of the items in first part of questionnaire, at least one needs to be moderate or severe. Out of items in 2nd section of questionnaire, a minimum of 4 must be moderate or severe. Further, to evaluate intensity of the PMS symptoms, premenstrual syndrome scale (PMSS) (Padmavathi and Dhanapal 2014) was used. The Inter-rater reliability of the scale was reported between 0.81 and 0.97.

Result

The present study was carried out among girl students of constituent colleges residing in the hostels of Health University, Bathinda, Punjab during academic years 2022-2023. Around 157 participants were diagnosed with premenstrual syndrome. Therefore, prevalence of PMS in this study group was 80.92% whereas around 37 (19.07%) participants were not having PMS (Figure1). According to PMSS, 154 (98%) participants

showed moderate intensity of the symptoms and only 03(1.9%) participants were having mild intensity (Figure2).

Mean menarche age of the participants was 13.01±1.22 years and mean span of menstruation cycle was 29.49± 1.79. The statistics of present study showed 100% recommended cleaning habits practice.

All the (100%) participants were using commercial sanitary pads. The result reported that 73% of adolescent were changing absorbent every six hours, 26% reported 4-hourly change and merely 01% reported 10-hourly change of absorbent. (Figure 3).

Discussion

Many changes occur on many levels, including the physical, psychological, and behavioral, throughout the adolescent years. Worldwide, an estimated 1.2 billion people are considered adolescents; in India, this accounts for about 21% of total population.

During menstruation, a girl's reproductive life begins, and the hypothalamic-pituitary axis regulates the cyclical loss of the endometrium. Both mental and bodily symptoms and indications return to them time and time again. When they occur during late luteal phase and get in the way of everyday life, we call it premenstrual syndrome (PMS). Tension, irritability, depression, anxiety, mood swings, craving carbohydrate-rich foods, sleep disturbances, and physical complaints like abdominal bloating, peripheral oedema, and breast tenderness are all symptoms and signs of premenstrual syndrome (PMS). Even though there is no definitive scientific test for premenstrual syndrome, 150 symptoms and indicators have been linked to the condition. For that reason, researchers at the Health University of Bathinda set out to determine how common premenstrual syndrome is among female students.

The present study reported mean menarche age to be 13.01±1.22 years which aligns with findings of Malekiet al.2014, who reported a similar distribution of menarche age, the range of age was between 10 to 16 years & mean menarche age was 12.59 ±1.25. on contrary, Williams et al. 2019 observed an earlier onset of menarche and delayed menarche at the age of 15 years was uncommon. The probable reason could be due to regional and genetic differences and exposure to the environment may have hastened puberty. These variances demonstrate environmental, social, dietary and genetic factors 'interactions determine menarche age. Present studied found that a sedentary lifestyle, increased screen time, poor eating habits & lack of physical activity might be contributing to early menarche. The length of menstrual cycle of most of adolescent girls (70%) was of 30 days (29.49 ±1.79) which aligns with existing literature of Brown et al. 2016, who noted that the majority of adolescents tend to develop regular cycles within a few years of menarche.

The present study reports a high prevalence of Premenstrual Syndrome (PMS) at 80.92%. Previous studies have also shown varying prevalence rates, with some reporting lower rates (like 61.5% in Sarkar et al. 2015), while others have found even higher rates (like 86% in Upadhyay et al. 2023). This variability is attributed to differences in methodology used in the studies (Ghani et al. 2016) and potentially among different ethnic groups and cultures (Ismaili et al. 2016). Possible explanations for the high incidence among health-related college students include mental toll of coursework & fact that medical students are more likely to be aware of condition and its symptoms.

Prevalence of PMS was considerably greater among people who were between the ages of 18 - 21 and were hostellers. Higher prevalence of PMS of present suggest earliest diagnose and treating of PMS to be the prime key to prevent adverse effect of PMS as suggested by Bhuvaneswari et al. 2019 and Buddhabunyakan et al. 2017. College student absenteeism is significantly impacted by this disease; thus it's is crucial that participants be more informed about it so that they aren't ashamed to seek therapy. Therefore, women's health and wellbeing could be greatly enhanced if the prevalence of premenstrual syndrome were to decrease.

The study's findings on menstrual hygiene practices align with previous research, particularly the work of Brown et al. (2016) and Martinez et al. (2018), which also highlighted the preference for frequent absorbent changes to maintain hygiene. Specifically, the study suggests that individual preferences play a significant role in how often people choose to change their absorbent materials, emphasizing the importance of this personal choice in maintaining hygiene. Cent percent usage of sanitary napkins suggests access to and use of high-quality sanitary napkins and safe disposal of sanitary napkins in an environmentally friendly manner.
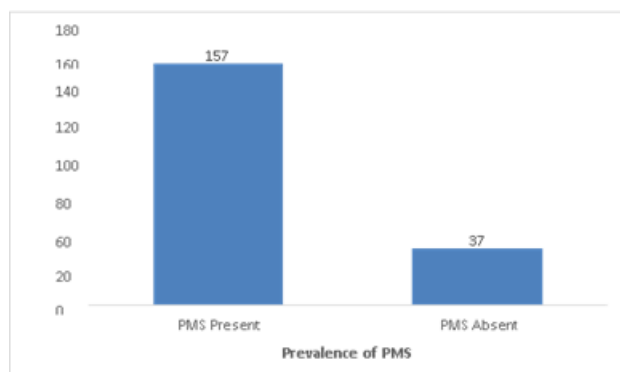

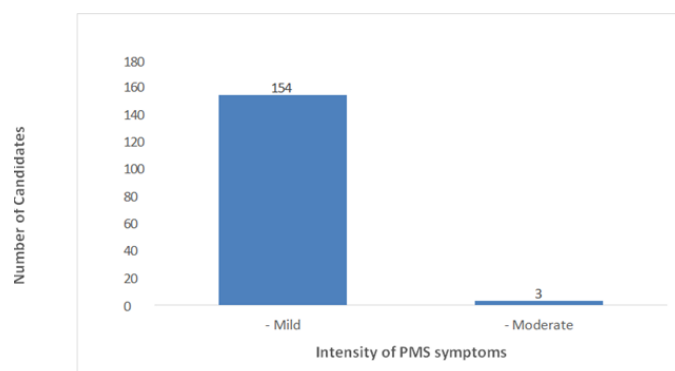Figure 1: Prevalence of PMS diagnosed with PSST-A in adolescent girls

Figure 2: Distribution of participants according to severity of intensity of PMS symptoms on premenstrual symptoms scale
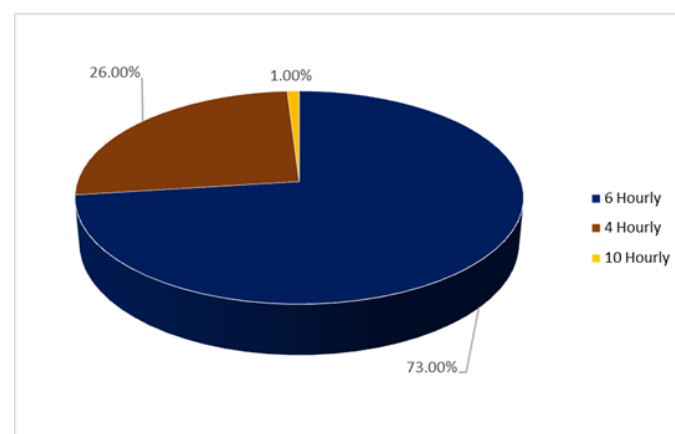

Figure 3: Percentage distribution of participants according to habit of changing of absorbent

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