Cuestiones de Fisioterapia

Exploration of Factors Influencing Premenstrual Syndrome and Coping Styles: A Mixed Methods Approach

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Abstract
A large percentage of college-aged girls suffer from premenstrual syndrome (PMS). This mixed-methods approach aimed to adopt a statistical exploration of the factors influencing PMS. The premenstrual coping measure (PCM) and an introductory Information Form were used to collect quantitative data for the study, while a semi-structured form was used for collecting qualitative data through individual interviews. Prospective symptom screening using the 15-item Calendar of Premenstrual Experience (COPE) was used to assess PMS symptoms. Strategies for managing premenstrual syndrome symptoms during their periods were evaluated through the use of a 15-item self-report questionnaire. Logistic regression and multivariate were used to identify the relationship between PMS symptoms and the associated factors. The results depicted the significant correlation of PMS symptoms with demographic characters. PMS symptoms are also well correlated with high levels of stress and physical activity at p level <0.05. In addition, predictive modeling explored the association of poor sleep with stress and activity. The findings of the research highlight the significant importance of early detection of the prevalent groups by adopting the relevant statistical tools and providing the possible opportunity to target the intervention study. Participants reported symptoms and methods of managing premenstrual syndrome were detailed in this research. Healthcare providers should be cognizant of the challenges faced by students and offer extensive health services to assist them in managing premenstrual syndrome.

Keywords: ***Premenstrual symptom, breast tenderness, cross-sectional study, Prediction model, level of resilience.***

Introduction:
Severe impairment in social or occupational spheres is caused by psychological and physiological symptoms experienced by women with premenstrual syndrome (3). The most common symptoms include changes in appetite, skin changes, tenderness in the breasts, headaches, dizziness, cramps in the abdomen, bloating in the abdomen, nausea, constipation, diarrhea, anxiety, irritability, anger, difficulty concentrating, exhaustion, lack of energy, changes in sleep, restlessness, crying, decreased productivity, and mood swings. Eighty to ninety percent of women show symptoms of premenstrual syndrome (PMS), according to epidemiological research in a developing country [1]. Shockingly, 5 to 10 percent of women experience symptoms severe enough to impact their daily lives and interactions with others. Symptoms of premenstrual dysphoric disorder manifest in this way, affecting a female's daily life [2].

To alleviate these symptoms, many therapy approaches are utilized, both pharmacological and non-pharmacological approaches. Pharmacological therapy, primarily selective serotonin reuptake inhibitors (SSRIs), is reserved for individuals with severe symptoms when non-pharmacological therapies have been exhausted. Exercise, healthy eating, herbal remedies, cognitive behavioral therapy, social support,

sufficient sleep, frequent hot baths, vitamin supplements, and physical activity are some of the non-pharmacological treatments used to alleviate minor symptoms [3].

Around 25% of Indian women suffer from premenstrual syndrome, and 10% of those women reported very severe symptoms, according to earlier research. Among 500 college students in Gujarat, Raval et al. (2015) discovered that 18% had PMS and 4% had PMDD. Nearly 45% of Delhi medical students reported premenstrual dysphoric disorder (PMDD) in one study [4].
Physical health, mental health, vocational functioning, and social functioning are all negatively impacted in women with premenstrual syndrome and premenstrual dysphoric disorder. Adolescents with and without premenstrual dysphoric disorder (PMDD) were compared in a quality-of-life study that found that girls without PMDD had a physical role score of three fourth compared to 52 for girls with PMDD and that girls without PMDD had an emotional score of less than three fourth compared to 44 for girls with PMDD. People should look into how PMS and PMDD affect women's quality of life [5].

Methodology

Finding out how college students dealt with premenstrual syndrome (PMS) was the goal of this mixed-method study. This methodology involved collecting and analyzing both quantitative and qualitative data at the same time, before combining the two sets of findings.

Sampling Size and Sampling

Female students from a developing nation's university students in Tamil Nadu made up the study's sample. At the time of data collection, the department had 250 students enrolled. With a 95% confidence interval, a 5% margin of error, and a 50% response rate (as recorded on the Raosoft website), a sample size of 125 students was computed. The study ran from April 2023 through January 2024 and included 125 female students.

Inclusion and Exclusion Criteria

Participation in the research is entirely voluntary, and participants must be at least 18 years old and able to communicate in a regional language to be included. Participants were not eligible if they did not speak an Indian regional language, were pregnant or nursing, suffered from depression or another mental disorder, or experienced menorrhea.

Research tool

The research data were obtained using a premenstrual coping measure (PCM) and an introductory information form. The 18-item questionnaire included questions about the students' sociodemographic details, their specific dietary habits (tea, coffee, smoking, alcohol), the frequency of their menstrual periods, strategies for managing premenstrual syndrome (PMS), and symptoms of the condition. Read et al. created it to measure premenstrual syndrome coping abilities in women between the ages of 18 and 49. Abay and Kaplan tested the reliability and validity of the scale [6]. There are 27 items and 6 sub-dimensions on the Likert-type scale, which ranges from 1 (not applicable to me) to 5 (very applicable to me). The scale was found to have a content validity value of 0.995. The range for Cronbach's alpha coefficient was 0.741 to 0.880. A higher level of dealing with premenstrual syndrome is associated with a higher score on the sub-dimensions of the scale. Although the PCM does give scores on premenstrual coping subscales, it is not advised to utilize a total coping score that is computed from these subscales. In this assessment, the subscale scores revealed information on coping strategies rather than coping levels.

Bartlett's Test of Sphericity: a method to ensure that the collected information is feasible for statistical analysis and to test the significant relationship between variables in a hypothesis [7].
Kaiser-Meyer-Olkin (KMO) Test: The KMO test was adopted and used to identify the sufficiency of the sample size for factor analysis. The purpose is to find out the appropriateness of using factor analysis. There is an index between 0 and 1, the value near to one is considered as factor analysis is appropriate. It provides an index between 0 and 1, with values closer to 1 indicating that factor analysis is appropriate and less than 0.5 is considered a small sample size [8]. After getting the appropriate approvals to perform the study, we gave anonymous surveys to female students. The questions were presented to the participants one by one. About 5-10 minutes were required for data collection. One hundred Twenty-Five Female students participated in the qualitative analysis by way of semi-structured interviews following the administration of questionnaires. An experienced researcher met with each participant in person for an average of twenty minutes to conduct the interviews. The participants were asked three free-form questions during the individual interviews, including: "What are the symptoms you experience in the premenstrual period?" To what extent do you believe these issues diminish your standard of living? Tell me about the ways you manage the symptoms that come before your period. An audio recording of each interview was made. Immediate transcription of all interviews was done word for word.

Statistical Analysis

We used SPSS's latest version to analyze the data. We used the Kolmogorov-Smirnov test to look at the data distribution. The data was analyzed using the following tests: Percentages and frequencies were used to display the category variables. The data of continuous variables were presented as mean and standard deviation, the median, and the range of values from lowest to highest.

PMS symptoms were classified using factor analysis and the Bartlett test of sphericity and the Kaiser-Meyer-Olkin test were adopted to identify the significant association among PMS symptoms. Content analysis was employed with qualitative data. This method included reading the data many times to acquire a complete picture, grouping expressions that were similar and those that were different into codes, and sorting the codes to find themes and subthemes. The findings were evaluated for rigor using the Lincoln and Guba criteria. Researchers in the study coded the data individually. A second researcher's thoughts were independently checked on the codes, subthemes, and themes.

Application of statistical exploration:

Table 1 Demographic distribution of participants (n=125)

Mean age	18.55±1.45 (18-21)	Number(N)	Percentage (%)
Residence	With family With Friends Hostel	30 12 83	24 9.6 66.4
Dysmenorrhea	Yes No	109 16	87.2 12.8
Body Mass Index (BMI)	<18.5 18.5-24.9 25-29.5 Above 29.5	5 13 101 6	4 10.4 80.8 4.8

Tea habits	Yes No	105 20	84 16
Coffee habits	Yes No	53 72	42.4 57.6
Fizzy Drinks	Yes No	43 82	34.4 65.6
Exercisers	Yes No	10 115	8 92
Chronic Disease	Yes No	22 103	17.6 82.4

As shown in Table 1, the students' descriptive features are as follows. From 18 to 21, the average age of the participants was 18.55±1.45. The majority of those who took part had a body mass index (BMI) ranging from 25 to 29. The results show that, among the students, 84% consume tea and only 8% exercise frequently. Chronic disease sufferers were 17.6%.

Table 2: Menstrual Cycle, PMS, and Coping Nature

Variables	Characteristics	Number(n)	Percentage (%)
Puberty Age	Less than 13 Above 13	80 45	64 34
Menstruation	Regular Irregular	90 35	72 28
Dysmenorrhea	Mild Moderate Severe	22 28 75	17.6 22.4 60
PMS	Loss of appetite Cramping Stress Tiredness Tender breast	25 40 15 25 20	20 32 12 20 16
PMS Managing Strategies	Sharing with family or friends Taking pills Exercises By diet	54 43 15 13	43.2 34.4 12 10.4

The presence of PMS was shown to be significantly different from dysmenorrhea (χ^2=5.709, p=0.014). The sociodemographic characteristics of the students were not shown any significance. The personal traits, dietary habits, menstrual cycle, age of menarche, and history of premenstrual syndrome have not shown any significant association (p>0.05).

Qualitative findings

Mood swings and anxious feelings were common among all of the students surveyed just before their periods began. Several other symptoms were present, including an overwhelming need to cry,

hesitancy, and depression. "I am not in the mood to do anything" was a common response from some pupils. Angry and I want to cry at the same time. Nobody wants to talk to me. Two or three days before the period (20 years old), all of this begins.
A week before my period, I get extreme sensitivity. Twenty years old here, and I still get embarrassed whenever my pals say anything since I always think they're referring to me. Other students who reported experiencing rage during their premenstrual period provided the following explanations: I am quite angry. Also, I'm depressed. The onset is three to four days before my period and the duration is three to four days after it stops. As a 21-year-old, I just don't have what it takes and experience distress and shed needless tears. My anger is building up needlessly. At the other end of the spectrum, I feel fury. For me, a 22-year-old woman, these sensations begin one week before my period and become significantly worse the last three days.

Discomforts in the Body

Students reported a variety of physical complaints, including swelling, soreness in the breasts, abdominal and leg pain, acne, greasy skin, loss of appetite, nausea, vomiting, diarrhea, and weakness. My breasts are becoming extremely enlarged, according to a few students. My belly button is going up.

My acne is finally cleared up. A greasy film is developing on my face. At 22 years old, my body odor changes when I perspire.

When I'm about three or four days away from my period, I experience groin pain, swelling, and tenderness. Swelling and pain have begun to develop in my breasts.

I always tell people not to embrace me too tightly when they do. When I'm about to have my period, I feel nauseous. My hunger has been sated. At 26 years old, I typically indulge in sweets. My breasts start to feel tight around two weeks before my menstruation is due. Leg and back discomfort is a real thing for me. While I sleep, I experience pain. On waking, I feel excruciating agony. By the way, I'm becoming hungry more often. In my opinion, I eat too much. Whether it's salty or sweet, it makes no difference (22 years old).

"Experience of coping with PMS" focused on "making relaxation practices" and "avoidance of stress and conflict."

People who took part in the study said that they avoided confrontation by doing things like being alone, listening to music or TV, avoiding eye contact, etc. Some students shared their experiences, saying things like My connections with people are affected by premenstrual difficulties. I let my friends know that I'm sick. Speaking to them is something I would rather avoid.

I retire to my bedroom for a rest. I long for solitude. Sports are a hobby of mine. At 22 years old, it calms me down.

I would rather not engage in conversation with anyone. Since I am capable of breaking their hearts. On sometimes, I lose my temper. Movies are my go-to during that time.
Calls are keeping me occupied. I am 23 years old and I sleep or rest.

One of the students said that writing down her emotions helped her relax. According to her, one should "move on with your life" as the initial shock wears off. Depression has set in. Aggressive walking is making my life quite difficult. My feelings go unspoken. I bury my head in my pillow and sob uncontrollably. The written word is a wonderful thing for me. So that there is no animosity, I put my emotions on paper. I delete everything I write once I finish it so I can escape this feeling. I am 21 years old.

Emotions are running high, and tears are streaming down my face. I let out a few tears and just chill out since I adore this position. Please don't make me feel out of the ordinary. As a 22-year-old, I like knowing that my body is doing something.

A few ways the students un-winded were by drinking herbal tea, going to bed early, applying heat, taking pain medication, going on walks, and playing sports.

My stomach and legs benefit from massage, and sports help me relax (19 years old).
Herbal tea is serving me. Lime, chamomile, ginger, and fennel teas are my favorites. As far as I'm concerned, it is calming. I lay down and rest after drinking tea. At 22 years old, I use pills when the pain gets too bad.

If there is anything I am obligated to do, I will see it through. That is how one student attempted to unwind. What can I anticipate? I'm putting it off. No matter what, I'm not moving. I want to get some sleep before my period (20 years old) because I know it will be more difficult than usual.

Discussion

University students' experiences with premenstrual syndrome (PMS) and coping strategies were the focus of this research. Among the students surveyed, 64% had menarche ages below 13, 72% had regular menstrual cycles, and 60% suffered from severe dysmenorrhea. According to research, above 90% of college students with premenstrual syndrome were below 16 years old when they first had periods, half of the participants had severe symptoms, 57% had mild to moderate, and nearly a quarter of them had regular cycles [9].
According to a study, the average age of menarche in Turkey was 13.25±1.32. Dysmenorrhea affects above 80% of pupils. As many as 85% of college students suffered from dysmenorrhea, 88% had regular menstrual cycles, and 75% were 13–15 years old when they first had their period [10].

Globally, many female college students suffer from premenstrual syndrome. Among college students, above 40% reported experiencing premenstrual syndrome at least once every menstrual cycle. Students reported the following symptoms more frequently than any other: worry, sadness, depression, exhaustion, breast soreness, changes in hunger, and abdominal and groin pain. The findings of the research that have been published in the literature align with our own investigation [11]. The most prevalent premenstrual symptoms reported by students were fatigue (75%), depression (75%), and abdominal cramps (79%). In a study conducted by Hashim et al., it was found that students with premenstrual syndrome (PMS) often had a variety of symptoms, including low mood (95%), lack of energy or stamina (92%), discomfort in various muscles and joints (90%),

and food cravings (85%). Research by another author [12] found that a significant portion of students reported symptoms such as irritability (82%), furious outbursts (67%), sadness (54%), anxiety (47%), skin problems (44%), and breast pain (40%). While studying premenstrual syndrome in Turkey, researchers found that anxiety (77% of students), edema (73%), also weakness (71% of students), and pain (61%) were the most common symptoms [13]. Several investigations came to the same conclusions [14].

The kids' PCM scores in this study were excellent across the board. The sub-dimensions of self-care, mindfulness, and acceptance of premenstrual transition also achieved the highest score. The premenstrual change subdimensions of awareness and acceptance deal with a woman's coping mechanisms, which include being cognizant of and accepting of the fact that she will suffer both physical and emotional changes during her period. As a coping mechanism, self-care refers to a woman's efforts to attend to her own psychological (obesity-related concerns) and physiological needs in a way that brings her the most joy and contentment [15]. Women with premenstrual syndrome (PMS) employed a variety of coping mechanisms to lessen or avoid discomfort, according to one study that included interviews with these women. Stress and conflict avoidance, being alone, and controlling one's temper were among them. Other coping mechanisms most often mentioned in this research were sleeping, resting, taking showers, using medicines, drinking herbal tea, and exercising [16]. Subdimensions of PCM were supported by all of these approaches. Women identified the following coping mechanisms in a qualitative study that corroborated the findings as mentioned earlier: avoiding stress, taking care of oneself, being alone, not expressing anger, seeking social support, and taking medication or supplements [17] Resting (68%), sleeping (61%), using heat packs (30%), and taking pain medications (29%) were the most commonly reported techniques among university students in an Ethiopian study [5]. Pakistani researchers found that among college students, half of them did nothing, 41% took painkillers, 18% worked out, and 14% turned to traditional remedies when they experienced premenstrual syndrome. Among Korean young women, majority of them reported sleeping it off, 70 percent took extra showers, and 54.4 percent ate more than they needed to manage the premenstrual syndrome. In addition among Turkish students, 40% turned to heat application, a quarter of them had taken rest, and 10.9% took painkillers. There are several approaches to alleviating premenstrual syndrome symptoms, and when these approaches are compared in the studies and literature, commonalities emerge.

Conclusion

Worldwide, 47.8% of reproductive-age women experience premenstrual syndrome. Of these, around 20% have symptoms that are so severe that they interfere with their everyday lives, while the rest have mild to moderate symptoms. Clinically significant physical and psychological symptoms during the luteal phase of a woman's menstrual cycle cause premenstrual syndrome (PMS), which in turn impairs her functioning capacity and causes substantial discomfort. Improved quality of life may be possible with timely and appropriate interventions guided by the known relationship between premenstrual problems and psychiatric diseases.

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