



Original Article

Impact of Pre-Menstrual Symptoms on Activities of Daily Living Among University Students; Descriptive Cross-Sectional Study

Tayyba Majeed^{1*}, Saleha Abbas¹, Ghalia Safdar², Habiba Shabir³, Ayesha Bajwa⁴, Syed Nasir Ali Shah⁵

^{1*}International Osteopathic Clinic, Lahore, Pakistan. ²Shifa Tameer-e-Millat University, Islamabad, Pakistan. ³Bakhtawar Amin Hospital, Multan, Pakistan. ⁴Central Park Medical College, Lahore, Pakistan. ⁵Sahara College, Narowal, Pakistan.

ABSTRACT

Background: Pre-menstrual syndrome and its symptoms have been recognized as a cluster of mental, emotional and physical symptoms that are associated with the menstrual period and have been known to begin a few days earlier and after the onset of menstruation. Almost forty percent of women who are at their reproductive age suffer from pre-menstrual syndrome and only 5 to 10% are known to suffer from serious psychological demonstration known as a pre-menstrual dysphoric disorder. **Objective:** The objective of this study is to measure the impact pre-menstrual syndrome and its symptoms have on the activities of daily living among university students. **Methods:** The design of this study is descriptive cross-sectional. The data for this study was collected from Lahore Medical and Dental College, Lahore College for Women and University and University of Central Punjab, Lahore. The sampling technique employed was the non-probability sampling technique. The sample size for this study was calculated using the World Health Organization sample size calculator. Young and adult girls aged 18 to 25 years were recruited in our study and who were enrolled in university. Informed and written consent was taken from every participant recruited in our study. The outcome measuring tool employed was The German Pre-Menstrual Syndrome impact questionnaire which was filled by every participant. Data was entered and analyzed by using Statistical Package of Social Sciences version 23. The variables of the study were represented in the form of descriptive statistics, tables, graphs, frequency tables and percentages. **Results:** The results of our study showed that the activities of daily living of 24 (42.9%) participants were mildly affected, 31 (55.4%) were moderately affected and 1 (1.08%) were severely affected by the pre-menstrual symptoms. **Conclusion:** Our study concludes that pre-menstrual symptoms have a significant impact on the activities of daily living of the majority of adult young university females. The results of this study conclude that the activities of daily living of young females were moderately affected by these cyclic pre-menstrual symptoms.

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***Correspondence:** Tayyba Majeed, International Osteopathic Clinic, Lahore, Pakistan

Email: tayybamajeed501@gmail.com

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INTRODUCTION

The Pre-menstrual syndrome is known as a cluster of emotional, mental and physical symptoms that are associated with the monthly menstrual period and are known to begin a few days before and after the inception of menstruation.^{1,2} Forty percent of young adult females who are their reproductive age tend to suffer from pre-menstrual syndrome, and only 5 to 10% of young adult females tend to have serious psychological symptoms which are known as pre-menstrual dysphoric disorder.^{3,4} The causes of pre-menstrual syndrome and the severity of its symptoms have been enlightened throughout the literature from biological and psychological points of view. The significant findings found in pre-menstrual syndrome have been acknowledged endocrinological by abnormal levels of progesterone, serotonin, endorphin and gonadotropins. Use of alcohol, smoking, consuming drinks that are rich in caffeine and excessive consumption of proteins have been also observed to be associated with the severity of symptoms of pre-menstrual syndrome.^{5,6} Psychiatrists and gynecologists have suggested the diagnostic criteria for pre-menstrual syndrome. The American College of Obstetrics and Gynecology states that a minimum of 1 physical and 1 psychological symptom must be observed and reported within 5 days of menstruation and prevailing for at least 3 menstrual cycles monthly.^{7,8}

Confirmation of these symptoms through a prospective daily rating diary for a minimum of 2 menstrual cycles is needed.⁷ The symptoms associated with pre-menstrual syndrome might be categorized into three main domains, which are mental, emotional and physical. These symptoms are observed to differ in severity and intensity and might also disappear with pregnancy, climacterics, contraceptive pills and ovulation injunction.^{9,10} Pre-menstrual symptoms are

usually a cluster of psychological and physical symptoms. The psychological symptoms include irritation, agitation and wrath. The physical symptoms include tenderness in the breast, nausea, abdominal distension, headache, weight gain and diaphoresis.^{6,11} Moderate levels of physical activities must be incorporated into an everyday routine as it has been observed it has a rather significant effect on an individual's general well-being and enhances positivity. American College of Obstetrics and Gynecology recommends incorporating aerobic exercises in the protocols employed for managing females who are suffering from pre-menstrual syndrome.^{12,13}

The sole purpose of our study was to measure the influence and impact of pre-menstrual symptoms on the activities of daily living among young adult university-going females. Countries like Pakistan, which are under the spell of cultural stigma need these topics to be discussed and worked on so that awareness and more healthcare measures can be arranged for lessening down the intensities and severity of these issues. Previously conducted studies, previous research and literature suggest that pre-menstrual syndrome and its symptoms have a huge impact on the mental and physical well-being of females. This topic has been less discussed and researched in developing countries like Pakistan due to cultural stigma. Our current study has the intention to describe comprehensively the impact and influence of pre-menstrual symptoms on activities of daily living of university-going young adult females. Our current study would be able to add authentic data and information to the existing literature focusing on Pakistani young adult females. Our current study might be able to raise awareness regarding pre-menstrual symptoms, their severity and how to handle them among Pakistani females which will be a great aid in developing countries like Pakistan. Our current study might be able to raise more

awareness and guide regarding necessary measures that might be taken both on an individual level and a mass level.

METHODS

This descriptive cross-sectional study was completed after six months of the approval of its synopsis. The data for our study was collected from Lahore Medical and Dental College, University of Central Punjab and Lahore College for Women and University, Lahore, Pakistan. The sampling technique employed for this study was non-probability convenient sampling technique. The sample size for our study was calculated by employing the World Health Organization (WHO) sample size calculator.¹⁴ The confidence interval was taken to be 95% and prevalence was taken to be 0.055%. The sample size was calculated by using the following formula:¹⁴

$$n = \frac{z_{1-\alpha/2}^2 P(1-P)}{d^2}$$

Sample size, n was calculated to be $n= 56$. Our current study recruited young adult girls with ages ranging from 18 to 25 years. Only those young girls were recruited in our study who were enrolled in the university at any level of education.¹⁵ Those young adult girls were not recruited in our study who had a medical diagnosis of dysmenorrhea and premenstrual dysphoric disorder.¹⁵ The participants were recruited in our study according to the inclusion criteria set for our study. Written and informed consent was taken from each participant and the tool employed by us was the German PMS- Impact questionnaire¹⁶ which was filled out by the participant herself. The German Pre-Menstrual Symptoms Impact Questionnaire has been designed to evaluate and assess the impact the premenstrual symptoms have on the performance of daily activities. German PMS- Impact questionnaire has two subcategories, functional and psychological. This is an eighteen-item questionnaire that comprises

two groups with each category comprising nine items in each group. The questions of this questionnaire were answered in a way following the manner of the Likert scale. This scale ranges from one to four in which one represents disagree, two represents hardly agree, three represents mostly agree and four represents strongly agree. The minimum score for this tool was 18 and the maximum score was 72. The outcome score lay between mild, moderate and severe.

The range of mild score was 18 to 36, the range of moderate score was 37 to 54 and the range of severe was 55 to 72. The German PMS- Impact questionnaire has a reliability of 0.95 and a validity of 0.95.¹⁶ The collected data was entered for analysis by employing the statistical package for social sciences version 23. The variables of the study were represented in the form of descriptive statistics, tables, graphs, frequency tables and percentages. Our study was approved by the ethical committee of Lahore College of Physical Therapy. All the information given by the young adult female recruited in our study was made sure to be kept confidential and they were made sure that no ethical issues or harms would occur during and after the conduction of our study.

RESULTS

The mean age was 20.0714 with a standard deviation of 1.96198. Figure I shows us that the frequency of active participants was 19 ($n= 19, 33.9\%$) and the frequency of sedentary participants was 37. ($n= 37, 66.1\%$). Table I shows us that the frequency of participants who were affected mildly by the symptoms was 24 ($n=24, 42.9\%$), the frequency of participants who were affected moderately was, 31 ($n=31, 55.4\%$) and participants who were affected severely was 1 ($n=1, 1.8\%$). Figure II shows cluster bar chart which is showing us the percentages and the number of participants whose activities of daily living

Table 1: Frequency of Impact of Pre-menstrual Symptoms of Activities of Daily Living

Impact on ADLS	Frequency	Percentage
Mild	24	42.9%
Moderate	31	55.4%
Severe	1	1.8%

were affected by the pre-menstrual symptoms.

DISCUSSION

A descriptive cross-sectional study was conducted to determine the effects of pre-menstrual symptoms on the activities of daily living of young adult females of reproductive age. The results of our study showed that pre-menstrual symptoms have a rather huge and significant effect on the activities of daily living of university-going young adult females. By employing the German Pre-Menstrual Symptoms Impact questionnaire the prevalence of these symptoms was found to be 57%. Our current study represented various mental and physical symptoms as the classification of pre-menstrual syndrome. Almost about 55.4% of participants recruited in our study reported that their activities of daily living are moderately affected by pre-menstrual symptoms. Doseok Choi and co-workers conducted a study on determining and evaluating the impact of pre-menstrual symptoms on the activities of daily living of Korean women.² They also worked on determining the knowledge of Korean women on seeking treatment concerning pre-menstrual syndromes. Our current was unable to work on determining this but our study recommends future researchers to find out how much percentage of women have this kind of knowledge.

Their study concluded that pre-menstrual

symptoms are observed to occur frequently and do have a rather significant impact on daily life for a huge proportion of Korean women.² Our current study's conclusion and results agree with their conclusion. Daa E.E Rizk and co-workers conducted a study to determine the prevalence and impact of pre-menstrual symptoms in young adult girls in school going girls in United Arab Emirates.³ Their study concluded that pre-menstrual syndrome is prevalent yet it is an undertreated disorder in young adolescent school-going girls and our study completely agrees with this. Their study observed that pre-menstrual syndrome has adverse effects on young girls' emotional, mental well-being and their educational performance and it can be represented as a significant public health problem. Our study also agrees with this. Their study also concluded that pre-menstrual syndrome is significantly linked with family history, ethnicity and dysmenorrhea. Our study lacked information and data in this regard which is why our study recommends future researchers to conduct studies in Pakistan regarding the association of pre-menstrual syndrome with ethnicity, family history and dysmenorrhea particularly in this group.

Our descriptive cross-sectional study might provide new and innovative knowledge that had not been available from a Subcontinental population especially Pakistan to the literature focusing on finding the impact of pre-menstrual symptoms in a sample size of young adult university-going girls. Our current study also focuses on the dire need for creating a greater understanding and enhanced therapeutic intervention for pre-menstrual symptoms during adolescence. Our current study also suggests creating a better integration of reproductive health care into school health services. Our results clearly show that pre-menstrual symptoms are a

Figure 1: Frequency and Percentage of Lifestyle of Participants

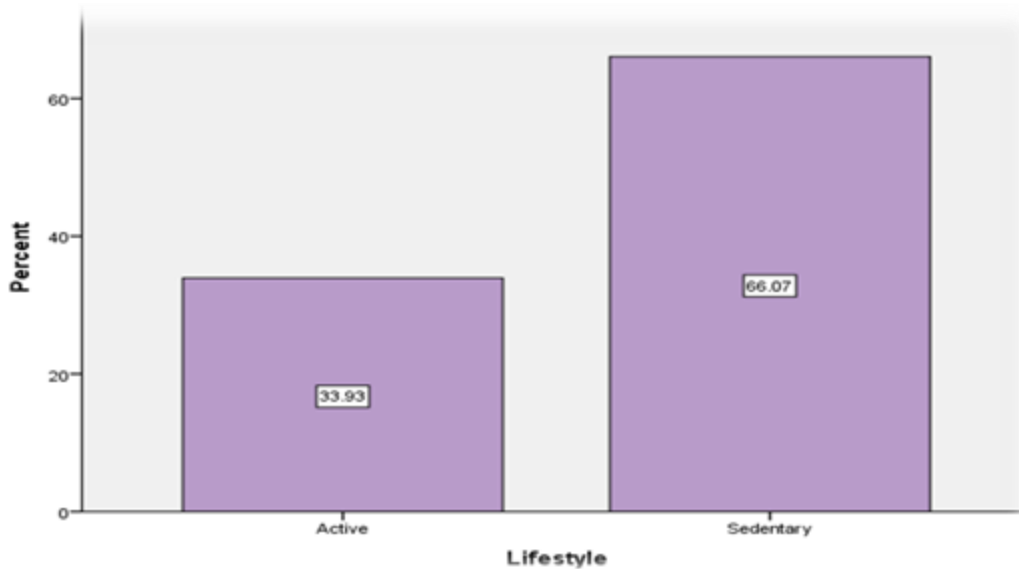
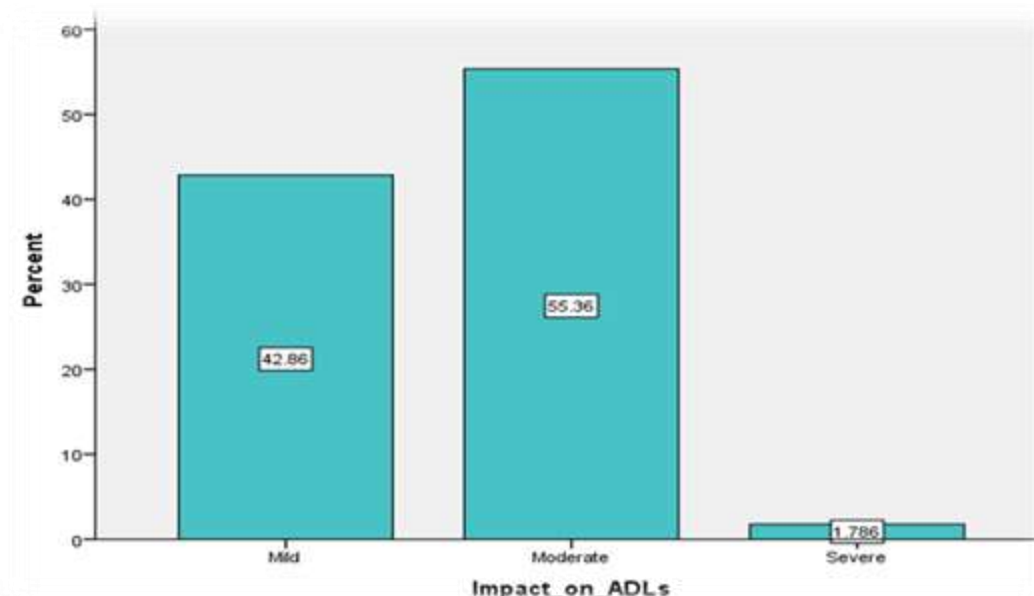


Figure 2: Impact of Symptoms on Activities of Daily Living of Participants



cluster which has been observed to occur as a prevalent disorder in adolescent young university-going girls in Pakistan and it adversely affects their mental and emotional well-being, educational performance, and social functions which are similar to the western communities. Thus, pre-menstrual syndrome has become a significant public

health problem in our society.¹⁷ The results of already available studies diverge widely but analogous studies of both eastern and western females who belong to the adolescent age group have reported a rate of prevalence of pre-menstrual syndrome between 5.3% and 30%.¹⁸⁻²⁴ All this is in agreement with the overall prevalence recorded in our current

study. The results of our current study show consistency and a rather strong relationship between the pre-menstrual symptoms and their levels of interference in all the categories of a female's quality of life, as already reported in the previously conducted Western researchers.^{21,25,26} Considering the adolescent population particularly, pre-menstrual syndrome has been observed to decrease educational productivity, increase the rate of absence from school, college and universities, interrupt social activities, impair personal and family relations and increase the utilization of health care^{19,27} as explained in our current study. The impact and influence of pre-menstrual symptoms on the functioning of young female adults, hence, seems to be consistent throughout the different cultures which support an essential biological origin of pre-menstrual symptomatology.^{28,29}

According to the researcher's best knowledge, there is a lack of data and authentic information and research in Pakistan on pre-menstrual symptoms and the impacts it places on a young girl's life and activities of daily living because of a lesser number of cases reported to the clinical department. Pakistani females consider this as a part of their lives and take it as a natural phenomenon. The limitation of our study was a smaller sample size as a larger sample size would have given more generable results. Our study also recommends that future researchers conduct a prospective study in this field. Further research must be conducted to ascertain the effects of educational levels and socioeconomic status on the severity and occurrence of pre-menstrual symptoms. Future researchers must also consider working on confounding factors such as dietary habits, weight and amount of involvement in extracurricular activities.

CONCLUSION

Our study concludes that pre-menstrual

symptoms have a significant impact on the activities of daily living of the majority of adult young university-going females. The results of our study conclude that the activities of daily living of young females were moderately affected by these cyclic pre-menstrual symptoms.

DECLARATIONS

Consent to participate: Written consent had been taken from patients. All methods were performed following the relevant guidelines and regulations.

Availability of data and materials: Data will be available on request. The corresponding author will submit all dataset files.

Competing interests: None

Funding: No funding source is involved.

Authors' contributions: All authors read and approved the final manuscript.

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