

Association between the prevalence of premenstrual syndrome and weight status of adolescent girls (11-21 years)

Abstract

Premenstrual syndrome, or PMS, is a group of symptoms that start one to two weeks before menstruation. Premenstrual syndrome is a very common problem, which exists not only in west but also in Asian countries like Pakistan. There are number of factors associated in the improvement of PMS, maintaining healthy weight is one of them. This research will create awareness in adolescent girls that weight is highly associated with the prevalence of PMS.

Objectives

- To assess the prevalence of premenstrual syndrome and weight status of adolescent girls.
- To find out the association between premenstrual syndrome and weight status in selected subjects.

Methodology

This research is descriptive in nature. Samples were 150 unmarried adolescent girl aged 11-21 and free from any chronic disease selected. An interview cum Questionnaire was used to collect the data. Data was entered and analyzed into SPSS22.0 version. Chi-square test was used to find the association between PMS and different weight status of Adolescents. Diagnostic assessments of Premenstrual syndrome were based on criteria of Diagnostic Statistical Manual (DSM) – IV and BMI standards of Asians were followed.

Result

This study concludes that more than half (78.7%) of the adolescent are suffering from premenstrual syndrome. BMI standards found result that most of the subjects were underweight (39.3%). Chi square test results shows that there is significant association ($p > 0.05$, $p = 0.009$) between variables. The prevalence of PMS is high in overweight adolescents (94.1%) and low in healthy weight adolescents (64%) as compared to underweight (81.4%) and obese adolescents (91.7%).

Conclusion

It is concluded that Premenstrual Syndrome is significantly associated with the weight status of Adolescent girls (11-21 years). Maintaining a healthy body mass may be important for preventing the development of Premenstrual Syndrome (PMS). Additional studies can be done in different age group.

Keywords: premenstrual syndrome, adolescents, BMI, healthy weight, weight status

Volume 6 Issue 1 - 2017

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Received: November 27, 2016 | **Published:** January 02, 2017

Abbreviations: BMI, body mass index; PMS, premenstrual syndrome; PMDD, premenstrual dysphoric disorder

Introduction

Premenstrual syndrome is a very common problem, which exists not only in west but also in Asian countries like Pakistan.¹ Premenstrual syndrome (PMS) can be defined as a recurrent disorder that occurs every month in the luteal phase of the menstrual cycle, and remits with the onset of menstruation. PMS is characterized by a complex set of symptoms which include physical, psychological and behavioral changes of varying severity.² As compared to world, there has been very little research on the prevalence of Premenstrual syndrome

(PMS) in Pakistani women even they are often raised thinking that PMS is part of being a woman, and they should not complain about it, rather accept it as a part of life.³ Results of retrospective community surveys indicated that 100% adolescents suffering from at least one premenstrual symptom of minimal severity that may affect her quality of life and occupational productivity.⁴ There are number of factors associated in the prevention of PMS and maintaining healthy weight is one of them. Previous studies suggested that maintaining a healthy body mass may be important for preventing the development of PMS and concluded that all the underweight female students had PMS and 93.4% and 90.9% of overweight and obese students, respectively, had PMS.⁵ The present study aimed to investigate the prevalence of PMS among adolescent girls and its association with different weight status.

Objectives

- To assess the prevalence of premenstrual syndrome and weight status of adolescent girls.
- To find out the association between premenstrual syndrome and weight status in selected subjects.

Limitations

- The sample size was limited to 150 samples.
- Adolescent girls aged between 11-21years were selected only
- Adolescent who had some chronic disease and are married were excluded.
- Because of limited resources and time I could not conduct this research on large scale.

Materials and methods

Introduction

This study is a combined project of 3 female students of B.S VIII semester of batch of 2015 of Ra'ana Liaquat Ali Khan College of Home Economics, Karachi. Each student investigated their own variable. Total number of participants taken for the study were 167, number of participants eligible for study were 150 adolescent girls (11-24years). I was committed to gather information on weight status.

Subject sampling

Sampling selection: The data was collected from the female adolescents (11-21years) from different educational institutes of Karachi.

Selection criteria: A total number of 167 adolescent girls aged between 11-21years were purposively selected in which 150 were met the criteria for assessment. Married and adolescent who had some chronic disease were excluded.

Study design

Questionnaire: An interview cum questionnaire was designed to evaluate qualitative and quantitative data. Questionnaire were based on two sections include anthropometric measurements and the diagnostic method of PMS.

Assessment tools

- A. Diagnostic and statistically manual of mental disorder:** PMS is diagnosed according to criteria stipulated in the fourth version of Diagnostic and statistically Manual of Mental Disorder. A standardized, self-administered about one or more symptoms completed for two consecutive menstrual cycles is the primary tool used for the diagnosis of PMS.

Physical Symptoms include,

- Fatigue
- Abdominal bloating
- Swelling of hands or feet
- Headache
- Tender breast
- Nausea

Psychological Symptoms include,

- Craving for sweet and salty foods
- Depression
- Irritability
- Mood swings
- Anxiety
- Social withdrawal.⁶

- B. Body mass index (BMI):** The cutoff criteria used for the BMI for ages 11 - 17years was taken from National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000) and for ages 18-21years was taken from BMI standards for Asian.

Data entry and analysis

All the group members participated in data entry. The data was entered in separate sheets that were then merged in single data set. Each student extracted the data for her specific study. I extracted the data of (n=150) adolescents female. Data was entered and analyzed into SPSS (Statistical Project of Social Science) 22.0 versions and the graphical and tabular representation was done on Microsoft Office 2010.

Data was analyzed using descriptive statistics. Pearson Chi-square was used to find the association between the variables.

Results and discussion

The data was assembled from 167 adolescent girls in which 150 were met the criteria. The purpose of this research was to find out the association between Prevalence of Premenstrual Syndrome and Weight Status of Adolescent girls.

Frequency of premenstrual syndrome symptoms

More than 200 symptoms of PMS have been described in previous studies, ranging from mild symptoms to those severe enough to interfere with normal activities.⁷ It is estimated that up to 85% of premenopausal women experience at least one premenstrual symptom and 15-20% meet clinical criteria for premenstrual syndrome.⁸ These symptoms then interfere with the normal activities of a woman including social, occupational, interpersonal and even the sexual functioning and are not related to any organic and functional disease.⁹

Total subjects were 150. As the Figure 1 shows that from all the 150 respondents, 28% of subjects (n=24) were suffering from at least 3 symptoms and only 3.3% of subjects (n=6) were suffering from at least 6 symptoms. Other study on adolescent sample (N=78) showed that 100% of the participants reported at least one premenstrual symptom of minimal severity There exists very little population based data from Pakistan regarding the prevalence of PMS and PMDD.¹⁰

Prevalence of premenstrual syndrome among adolescent girls (11-21years)

The findings of the present study in Figure 2 showed a high prevalence of PMS; it was found to be as high as 78.7%. Out of 150 respondents, 78.7% subjects (n=118) had PMS and 21.3% subjects (n=32) had no PMS. Global prevalence of PMS is high (47.8%), even almost half of women experience these symptoms. Worldwide studies show that the lowest and highest prevalence are reported in France 12% and Iran 98% respectively.¹¹

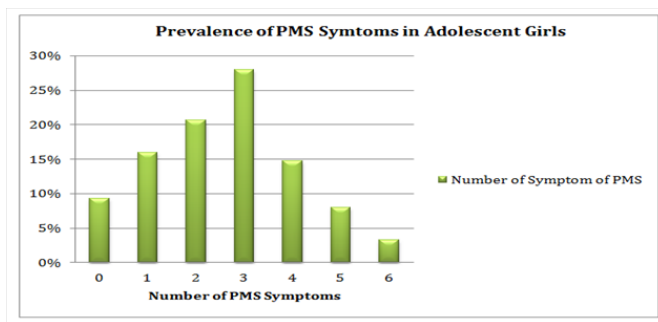


Figure 1 Frequency of premenstrual syndrome symptoms.

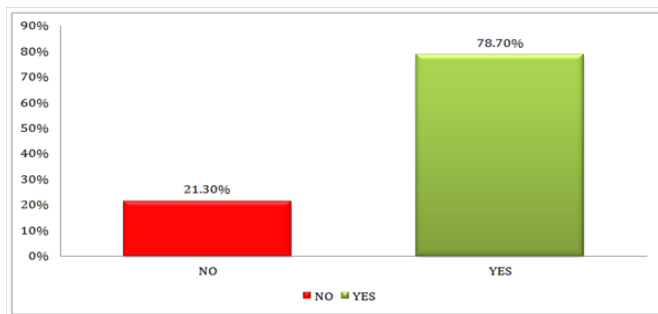


Figure 2 Prevalence of premenstrual syndrome among adolescent girls.

PMS is a common problem in the reproductive age group and severe forms are more prevalent in this part of the world. Very high frequency (81.25%) of PMS among women of reproductive age has been reported in Pakistan. Hence Premenstrual syndrome is a common problem, having an adverse impact on a woman's quality of life and productivity.¹²

Similar findings (89%) were reported by Bakr and Ez-Elarab (2010) in a study conducted among medical students of Ain Shams University, Egypt.¹³ This result also agrees with the study among Chinese female undergraduates and reported PMS with prevalence of 76%.¹⁴ It is essential to make treatment available for girls. Many girls may feel shy and may be reluctant to report PMS and, consequently, unable to seek medical advice which may impact quality of life and activities of daily living. It is one of the roles of health care providers in the respective institutions to ask about and screen for PMS offer treatment.

Weight status of adolescent girls (11-21 years)

A dynamic of transition from underweight to obesity was found in different population. Remarkable dual burdens of obesity and underweight were observed in some Asian countries in the last two decades. Under nutrition and overweight is a global problem, especially overweight and obesity spreading even to developing world, where it is an increasing threat to health.¹² The result in Figure 3 showed that 39.3% subjects (n=59) were underweight, 33.3% subjects (n=50) were healthy, 11.3% subjects (n=17) were overweight and 16% subjects (n=24) were obese. Apparently majority of adolescent girls were underweight according to their Body Mass Index. After considering previous researches, result showed Underweight, overweight and obesity are increasing worldwide and are emerging as major risk factors for several chronic diseases. Even Pakistan has an alarmingly high level of malnutrition; 24 percent of the population is undernourished.¹⁴

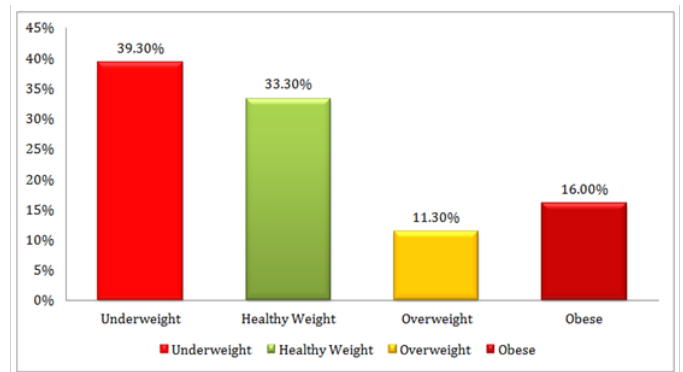


Figure 3 Weight Status of adolescent girls (11-21 years).

Association between prevalence of premenstrual syndrome and weight status

In the current study, Figure 4 reported that Prevalent of PMS in underweight, healthy weight, overweight and obese adolescent girls are 82.8%, 64%, 92.9% and 89.3% respectively. This shows overweight subjects has highest percentage than other. In this study, a significant relation between BMI and the occurrence of PMS is detected. Being overweight or obese significantly increase the risk of developing PMS so not putting extra weight may help in reducing the symptoms of PMS. This is in coherence with a prospective study that finds a strong positive relationship between BMI and the development of PMS. Women who are obese at baseline have significantly higher risks of developing PMS over 10 years of follow up compared to lean women.¹⁰

Chi Square test applied to find the association between Prevalence of Premenstrual Syndrome and Weight status of adolescent. The statistical analysis also shows result that p-value is 0.009 and, therefore, $p > 0.05$. This means there is significant association between the prevalence of Premenstrual Syndrome and weight status of Adolescents.

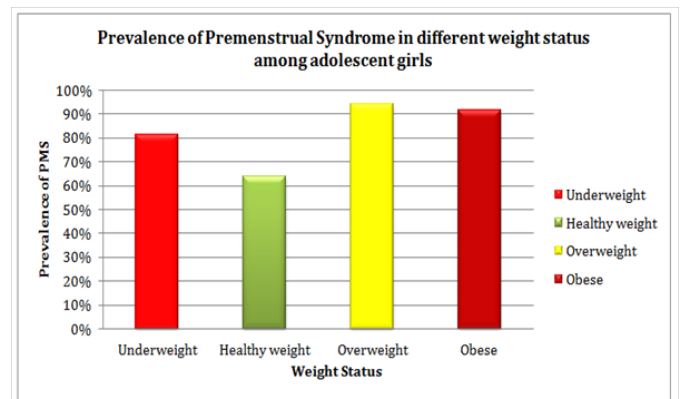


Figure 4 Prevalence of premenstrual syndrome in different weight status among adolescent girls.

Our data concluded that Pakistani girls do experience premenstrual syndrome.

Conclusion

PMS is significantly associated with weight status of adolescent girls. With facts and figures concluded above that there is strong

relation between Weight and PMS. Maintaining a healthy body mass may be important for preventing the development of Premenstrual Syndrome (PMS). By maintaining healthy weight, one can reduce its prevalence and by gaining weight, one can increase its prevalence. My research also concluded that maximum number of adolescent were underweight. This may develop adverse effect on one's physical, psychological and social functioning.

There is a need to establish some programs that promote good dietary and lifestyle habits for the management of weight. Reaching and maintaining a healthy weight is important for overall health and can help you prevent and control many diseases and conditions. If you are overweight or obese, you are at higher risk of developing serious health problems, including heart disease, high blood pressure, type 2 diabetes, gallstones, breathing problems, and certain cancers. That is why maintaining a healthy weight is so important.

In Pakistan, girls feel uncomfortable in discussing the issue of premenstrual syndrome even in my research many girls reject to fill questionnaire. It's our role to create awareness of PMS instead of making this topic shameful. Health Care programs should focus on this issue and help girls to relive from PMS by promoting beneficial lifestyle patterns.

A healthy lifestyle is the first step to managing Premenstrual Syndrome (PMS).

Acknowledgements

By the endless blessings of Allah, I am finally standing at a point and have completed my thesis successfully, Alhamdulillah. Special thanks to Prof. Rubina Hakeem, Hora Rizwan, Insiya Dewan, Zainab Habib and my mother Rubina Ashfaq who helped me all the way in its completion and had given me all the love and encouragement.

Conflict of interest

The author declares no conflict of interest.

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