

PREVALENCE OF PREMENSTRUAL SYNDROME AMONG ADOLESCENT GIRLS IN THE SELECTED SCHOOLS IN KATHMANDU, NEPAL

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ABSTRACT

The global prevalence of premenstrual syndrome is 47.8%. This study was conducted to assess to assess prevalence of premenstrual syndrome among adolescent girl students among selected schools in Kathmandu. A descriptive cross sectional study was conducted among total 150 students. They were selected by using proportionate stratified random sampling technique. Data were collected using standard PMS scale ($r = 0.81$) through self-administered method. Data were analyzed in SPSS version 16 using descriptive statistics and inferential statistics. The mean age and standard deviation was 14.43 years \pm 1.143 years with range of 11-16 years among 150 respondents. Among them, majority of respondent (84.0%) had premenstrual syndrome. Assessment of severity of premenstrual syndrome found that the minority of respondents (0.6%) had mild, 54.7% had moderate, 24.0% had severe and 4.7% had very severe PMS. Premenstrual syndrome was significantly associated with family history of PMS ($p=0.041$), number of pads used per day during period ($p=0.032$), junk food consumption ($p=0.007$), physical exercise ($p=0.020$), experience of stress ($p=0.006$). Thus it can be concluded that, most of the adolescent girls have experienced PMS ranging from mild to very severe symptoms. Therefore, it would be good if school can organize regular screening program and adolescent girl's friendly school environment to identify the problem on timely.

KEYWORDS

Adolescent girls, premenstrual syndrome and prevalence

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INTRODUCTION

The global prevalence of premenstrual syndrome is 47.8%.¹ The incidence of PMS worldwide also varies from mild (70%–95%), moderate PMS (20%–70%), and severe PMS(1%–20%).² There was highest and lowest prevalence in Asia (46.96%) and Europe (35.37%).³ In Northern Ethiopia, PMS is quite high as 80-90% prevalence.⁴ The PMS has negatively affect in adolescents' girls lives for up to six days every month.⁵ In Turkey, at least 25% of all adolescent girls experienced the incidence PMS.⁶ In India, there were more than 50% of adolescent girls suffering from PMS with moderate to severe symptoms of PMS.⁷ It was found 54% of adolescent girls had PMS in Kolkata city.⁸ In China, 61.4% of the adolescent girls are suffering from PMS with a greater severity.⁹ Similarly, in Kathmandu, Nepal, 72.3% of adolescent girls were suffer at least one PMS symptom of moderate to severe intensity and 5.6% of them had experienced PMS interfered severely with at least one of the five aspects (work efficiency, relationships with colleagues, family relationships, social life activities and home responsibilities).¹⁰ It was found 94% of respondents had abdominal discomfort and 76.28% of them were fatigue.¹¹ In Palpa, Nepal it was found 62.5% students had PMS out of which 56.1% had mild, 43.9% had moderate PMS.¹² In Morang District, it was found 57.7% and 56.93% of the respondents had experience PMS interfered with their work efficiency and productivity.¹³ Therefore, this research is designed to assess the prevalence of premenstrual syndrome among adolescent girls in selected schools in Kathmandu.

MATERIALS AND METHODS

Descriptive, cross-sectional study was done to assess the prevalence of premenstrual syndrome among adolescent girls in the selected schools in Kathmandu. The size was determined using the formula $n = N \cdot z\alpha/2^2 \cdot P(1-P) / [(N-1) e^2 + z\alpha/2^2 \cdot P(1-P)]$. The calculated 150 samples were selected through proportionate stratified random sampling technique from Occidental Public School and Asian Public School of Anamnagar, Kathmandu. All interested adolescent girl from grade 8-10 were included. The standard tool premenstrual syndrome scale (PMSS) was used to collect data after taking permission with author which comprised 40 questions with three sub-scales: Firstly, Physiological, secondly, Psychological and thirdly, Behavioural symptoms. The measurements on the scale are set according to the following scoring system: The response

Never was scored as “1”, rarely as “2”, sometimes as “3”, very often as “4” and always as “5” points. Data were collected from 5th October 2021 to 5th November 2021 after taking ethical clearance from Institutional Review Committee of Scheer Memorial Adventist Hospital Medical Institute; Banepa (approval number: 18/2021). The total study duration was 1 year from 1st July 2021 to 1st July 2022. Written permission from the concerned authority of schools was obtained. Data was collected by research team. Self-administered questionnaire was distributed to each student in appropriate time after taking their consent in classroom setting. Statistical Package for Social Science (SPSS) 16.0 version was used for the data analysis. Descriptive statistics was used to describe demographic and related variables. Inferential statistics Chi square test was applied for testing association between PMS and selected variables.

RESULTS

The mean age of the respondents was 14.43 ±1.143 years with range of 11-16 years. In regard to religion, 92.0% were Hindu, majority 73.4% of girls were upper caste ethnicity. Majority (80%) of them were from nuclear family. In the regard to level of education, 29.3% were grade 8, 37.3% were grade 9, 33.3% were grade 10. Regarding family history of PMS 44% of them had it where 28.7% was mother and 15.3% was siblings.

Table 1: Prevalence of Premenstrual Syndrome among Respondents n=150

Variable	n	%
PMS (80-200)	126	84.0
No PMS (<80)	24	16.0
Severity of PMS:		
Mild (80)	1	0.6
Moderate (81-120)	82	54.7
Severe (121-160)	36	24.0
Very severe (161-200)	7	4.7

The mean and standard deviation of menarche age was 11.94±1.04 with range of 9-14 years. Regarding consumption of food 62.0% preferred to junk. Minority 11.3% of them preferred to drink caffeine. Regarding physical exercise 62.7% of them performed physical exercise among them, 32.0% played games, and 64.0% did household chores (multiple responses). Majority of them (77.3%) were involved in

Table 2: Association between Premenstrual syndrome and Selected variables (n=150)

Variables		No PMS (%)	PMS (%)	P value*
Age (years):	11-13	6 (18.8%)	26 (81.2%)	0.623
	14-16	18 (15.3%)	100 (84.7%)	
Family history PMS:	Present	18 (21.4%)	66 (78.6%)	0.041*
	Absent	6 (9.1%)	60 (90.9%)	
Use of pads per day :	≥4	15 (23.4%)	49 (76.6%)	0.032*
	<4	9 (10.5%)	77 (89.5%)	
Consumption of food:	Homemade	15 (26.3%)	42 (73.7%)	0.007*
	Junk food	9 (9.7%)	84 (90.3%)	
Caffeine intake:	Yes	14 (15.7%)	75 (84.3%)	0.913
	No	10 (16.4%)	51 (83.6%)	
Physical exercise:	Yes	10 (10.6%)	84 (89.4%)	0.020*
	No	14 (25.0%)	42 (75.0%)	
Experience of stress :	Yes	15 (12.0%)	110 (88.0%)	0.006*
	No	9 (36.0%)	16 (64.0%)	
Psychological effect PMS friends:	Yes	12 (22.6%)	41 (77.4%)	0.101
	No	12 (12.4%)	85 (87.6%)	

*Chi-square test

screen time or social Medias for recreational. Most of (83.3%) them had experienced stress during menstrual period. Psychological effect by friends with PMS was 35.3% of the respondents.

DISCUSSION

The present study showed high prevalence of premenstrual syndrome among adolescent girls (84.0%) which is consistent result in Nigeria that was 85.5%.¹⁴ In Turkey that was 79% PMS experiencing moderate to high level of it.² And also consistent in China with 76% of prevalence of PMS.³ But the finding is inconsistent in Kolkata, where 54% of girls have PMS.⁴ The contrast may be due to the difference in sample size and use of different tool for data collection.

The present study found that 54.7% of respondents had moderate level of PMS which is consistent with study done in India that was more than 50% adolescent girls had moderate PMS.⁷ but it was inconsistent with study done in Terkey, that was found 79%.¹⁴ And in Kathmandu, it was found 72.3%.¹⁰

The present study found that, sever and very sever premenstrual syndrome was 24% and 4.7% very sever PMS respectively. Which was found in Kathmandu, Nepal 25.9% sever PMS.¹⁰ that was found in Northen Ethiopia 48.0%.⁴

these variations may be due to different setting of the study. In the present study there is no significant association between age and premenstrual syndrome ($p=0.623$), which is similar with the study done among adolescent girls in Erode, India, that was a no significant association between PMS and age ($p=0.132$).¹⁵

The present study found the significant association with PMS and family history of PMS since obtained $p=0.041$, higher the number of pads used per day ($p=0.032$) which is consistent in Morang district where statistically significant association was found between the prevalence of premenstrual syndrome and family history of it and higher the number of pads used per day ($p=0.018$, $p=0.028$) respectively.¹³

In present study, there was insignificant association between caffeine intake and PMS since $p=0.913$ which is inconsistent with study done in Turkey that was found significant association between caffeine intake and PMS $p=0.028$.¹⁴ In present study, found significant association between physical exercise and PMS since $p=0.020$ which is consistent with study done in Turkey that was found significant association between physical exercise and PMS since $p=0.0045$.¹⁴

Present study found significant association between junk food consumption and PMS ($p=0.007$) which is consistent in Egypt that was

($p=0.005$).⁸ Likewise, there was a significant association between stress and PMS in the study ($p=0.006$) which is consistent in that was ($p=0.001$).⁹

To conclude, there was high (84%) prevalence of PMS ranging from mild to very severe symptoms among adolescent girls of selected schools. Among them, 54.7% was moderate PMS, 24.0% of them had severe symptoms and

minority of the respondents (4.7%) had very severe symptoms. According to Chi square test, various associate factors are found for PMS like family history of PMS, more than four pads used per day, junk food consumption, physical exercise and experience of stress during menstruation.

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