Original Research Article

Menstrual problems and mental health issues: exploring the propinquity among adolescent girls in private high schools of Mysuru

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ABSTRACT

Background: Menstruation is a normal physiological process that begins during adolescence and may be associated with various symptoms with their onset, before, during or after the menstrual flow. Menstrual problems are generally perceived as an only minor health concern and thus given less importance. This study aimed to find the relationship between menstrual problems and mental health.
Methods: Cross sectional study was conducted to find out the relationship between the menstrual problems and mental health issues among school going students in the age group of 13 – 16 years. 320 adolescent girls of randomly selected high schools located in Mysuru were studied by self-administered pretested semi structured questionnaire.
Results: Among 320 adolescent girls included in the present study, 93% had one or other kind of menstrual problems. Prevalence of dysmenorrhea, menorrhagia, irregular cycles, premenstrual syndrome, and amenorrhea were 55%, 43%, 14.4%, 52.8% and 5% respectively. Prevalence of stress, depression and anxiety were 35%, 66.2% and 62.8% respectively. There was a statistically significant association between dysmenorrhea, anxiety, and stress.
Conclusion: Prevalence of menstrual problems as well as mental health problems was found to be high among adolescent girls. There was a significant association between dysmenorrhea, anxiety, and stress. Thus, there is a need to undertake regular screening activities for the adolescent girls on both menstrual and mental health problems in order to detect them early and provide essential support.

Keywords: Adolescent girls, Menstrual problems, Depression, anxiety, Stress, Mental health

INTRODUCTION

India is one of the most populous countries in the world. Adolescents (10-19) constitute about one-fifth of India's population. As per the 2011 census, in absolute numbers, there are 253 million adolescents in India.[1]

Transition from girlhood to womanhood has been recognized as a special period in adolescence girls. This transitional period from childhood to adulthood is characterized by rapid physical, mental, and sexual development. Menstruation is a normal physiological process that begins during adolescence period and it is associated with various symptoms with their onset, before, during or after menstruation. [2]

In India majority of adolescent girls are suffering from at least one reproductive health morbidities which may affect the normal life of adolescents and young adult women. Menstrual irregularities and menstrual problems are associated with physical, mental, social, psychological factors.[3]Mental health problems are found to be aggravated at specific stages of menstrual cycle. Few studies in Western world have shown the association between regularity of and length of menstrual cycle with likelihood of developing psychological illnesses.[4]

In public health agenda, menstrual problems are considered as minor problems in developing countries but they may be life threatening complications associated with them. The psychosocial consequences associated with menstrual abnormalities are often not given due consideration which they deserve.

Early identification of menstrual problems and mental health issues followed by prompt treatment may help in reduction in the suffering as well as improve scholastic performance and the quality of life among adolescents. Following this background, the present study was undertaken to estimate the prevalence and relationship between of menstrual problems and mental health issues among adolescent girls studying in JSS high schools of Mysuru.

METHODS

The present cross-sectional study was conducted in JSS high schools at urban areas of Mysuru for the period of one year. The sample size was calculated by considering the reported prevalence of 84.8% with absolute allowable error of 10% and 5% Alfa level to be 320.[5]Thus adolescent girls in the age group of 13 to 16 years assenting and their parents consenting to participate in the study were included.

Line listing of the JSS high schools in the Mysore city was done. Using lottery method 4 schools were randomly selected for carrying out the study. Population proportionate to size sampling (PPS) technique was applied based on the strength of the students in each school and in each class to calculate and recruit study participants. From the list of attendance in the selected class based on the required number of samples, systematic random sampling was carried out to select the study subjects.

Prior consent was obtained from the school authorities and students participating in the study. Data was collected by self-administered pretested, semi structured questionnaire with details on socio-demographic characteristics and menstrual problems experienced by the study subjects in last six months. Operational definitions for the history of menstrual problems were developed through thorough review of literature and content validated from the faculty members in the department of obstetrics and gynecology. "Depression, anxiety, stress scale (DASS) was used to assess the mental health status among study subjects."[6]

Statistical analysis

Data was compiled and analyzed using SPSS version 24. Quantitative variables were expressed in frequency, percentages, mean and standard deviation. Chi square test was used for testing the association between the menstrual problems and mental health status. The associations were interpreted statistically significant at p<0.05.

RESULTS

Socio-demographic characteristics

Among 320 study subjects included in the study, majority 117 (36.6%) were 15 years old and the mean age was 14.76±0.846 years. 145 (45%) of them were studying in the 8th standard, 118 (36.9%) were in 9th standard. 251 (78.4%) of fathers and 247 (77.2%) of mothers of study subjects were literates. Business was the commonest occupation of fathers of135 (42.1%) study subjects. 295 (92%) were below poverty line and 267 (83.4%) were belonging to Nuclear families (Table 1).

Table 1: Distribution of study subjects based on socio-demographic variables.

Variables	N	(%)
Age (years)		
13	81	25.3
14	112	35.0
15	117	36.6
16	10	3.1
Class (standard)		
8	145	45.3
9	118	36.9
10	57	17.8
Education of father		
Illiterate	69	21.6
Literate	251	78.4
Education of mother		
Illiterate	73	22.8
Literate	247	77.2
Occupation of father		
Farmer	31	9.7
Daily labors	10	5.6
Business	18	42.1
Govt employees	35	3.1
Others	126	39.4
Socio-economic status		
APL	25	8
BPL	267	92
Types of family		
Nuclear	267	83.4
Joint	43	13.4
Three generation	10	3.1

Menstrual problems

Out of 320 study participants, 93% had one or other menstrual problems as shown. Dysmenorrhea was most prevalent menstrual problem followed by menorrhagia. 55% study participants were suffering from the dysmenorrhea, 43% study participants had menorrhagia, 14% study Participants had irregular cycles, and 5 % study participants had amenorrhea. 52.4% study participants had Pre-menstrual syndrome (Figure 1).

Mental health problems

Among 320 participants included in the study 203 (63.4%) subjects had stress, 212 (66.2%) subject had anxiety, 112 (35%) subjects had depression as per DAS scale (Figure 2).
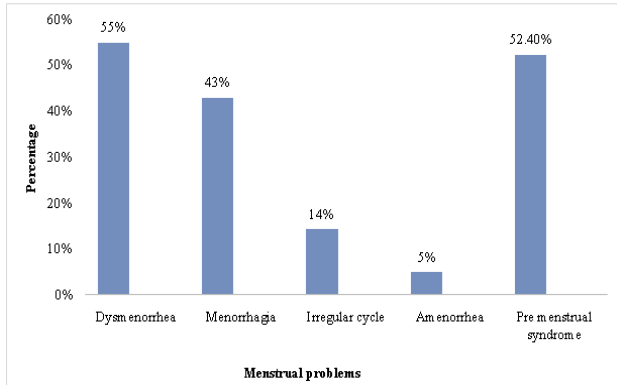

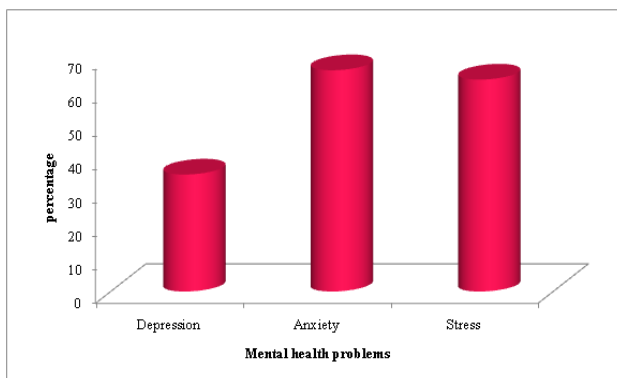**Figure 1: Distribution of study participants based on menstrual problems.**

Figure 2: Distribution of study subjects based on mental health issues (put percentages in the bar).

Relationship between menstrual problems and mental health issue

Prevalence of stress was more among subjects with history of dysmenorrhea, menorrhagia and irregular cycles. There was a statistically significant association between dysmenorrhea and stress (p=0.035). Depression was more among subjects with history of dysmenorrhea, menorrhagia, irregular cycles and premenstrual syndrome. However there was no statistically significant association between depression and menstrual problems. Anxiety was more among subjects with history of dysmenorrhea, menorrhagia, irregular cycles and amenorrhea. There was a statistically significant association between anxiety and dysmenorrhea (p=0.046) (Table 2).

DISCUSSION

Menstrual problems are one of the commonest issues among adolescent girls but unfortunately, they are often neglected. Menstrual problems are also considered to be associated with mental health issues like depression, anxiety, and stress. In public health point of view these mental health consequences related to menstrual problems are preventable. Early detection of the menstrual problems and their proper treatment are the major strategies to prevent these consequences.

In present study it shows that 93% of students were having one or more menstrual problems. These results are similar to the observations made by Nazeema et al and Ravi et al where they have observed that, 84.4% and 97.7% of the subjects were having one or the other menstrual problems.[7] This higher prevalence of menstrual problems clearly indicates that the menstrual problems are major public health concerns which need to be addressed at the earliest. 55% subjects in the present study were found to have dysmenorrhea, which is slightly more than that observed by Nazeema et al to be 33% and that of Ravi et al to be 72.6% and similar to the observations made by Karthinga et al to be 52.02%.[5-8] This variation in the burden of dysmenorrhea may be due to the subjectivity attached to the symptoms and the extent to which study participants give importance to this symptom. However, all the above mentioned studies categorically mention that dysmenorrhea to be a commonest menstrual problem among adolescent girls.

In the present study 43% subjects had history suggestive of menorrhagia, this is similar to the observations made by of Ravi et al, where they found the prevalence of menorrhagia to be 45%.[7] Menorrhagia compared to other menstrual problems is of more serious concern as it will make an adolescent girl more prone for anemia and related complications. 14.4% of the subjects in the present study had Irregular menstrual cycles. This was quite similar to the study conducted by Waghachavare et al where it was observed to be 14.5% and lesser than the observations made by Ravi et al to be 31%.[9]

In the present study, 52.2% subjects had the history suggestive of premenstrual syndrome. This was quite higher compared with the observations made by Waghachavare et al to be 17.2% and Buddhabunyakan to be 29.8% and 18.4% by Raval et al.[9-11] The higher prevalence of premenstrual syndrome in the present study could be the subjective nature of these symptoms and the expressivity of the study participants. 5% of the subjects had history of primary amenorrhea in the present study. This was lesser compared to the observations made by Waghachavare who reported the prevalence to be 17.7%.[9]

Prevalence of mental health status

In present study prevalence of depression, anxiety and stress were 35%, 66.2% and 62.8% respectively. These results are comparable with the observations made by Khalid et al where the prevalence of depression, anxiety, Stress was 41%, 66.2% 52.5% respectively.[12] Similar report was found by Sandal et al in chandigarh.[13] While

similar study by Mishra et al in Eastern Uttar Pradesh reported that anxiety and depression to be more prevalent in mid adolescence.

Table 2: Association of menstrual problems with mental health issues.

Menstrual problems	Mental health issues		Total	Chi Square	P value
	Present N (%)	Absent N (%)			
Stress					
Dysmenorrhea	53 (30.1)	123 (69.9)	176	4.628	0.035
Menorrhagia	6 (4.3)	133 (95.7)	139	0.002	1.000
Irregular cycles	98 (35.8)	176 (64.2)	274	0.521	0.510
Amenorrhea	6 (37.5)	10 (62.5)	16	0.006	1.000
Pre menstrual syndrome	62 (36.7)	107 (63.3)	169	0.0002	1.000
Depression					
Dysmenorrhea	110 (62.5)	66 (37.5)	176	1.074	0.35
Menorrhagia	45 (32.4)	94 (67.6)	139	0.208	0.721
Irregular cycles	92 (33.6)	182 (66.4)	274	0.026	0.868
Amenorrhea	6 (37.5)	10 (62.5)	16	0.106	0.789
Pre menstrual syndrome	55 (32.5)	114 (67.5)	169	0.233	0.638
Anxiety					
Dysmenorrhea	54 (30.7)	122 (69.3)	176	4.167	0.046
Menorrhagia	89 (64)	50 (36)	139	0.102	0.813
Irregular cycles	178 (65)	96 (35)	274	0.001	1.000
Amenorrhea	7 (43.8)	9 (56.2)	16	3.343	0.103
Premenstrual syndrome	110 (65.1)	59 (34.9)	169	0.001	1.000

Depression was more among girls studying in 9th and 10th standards, and anxiety was more among girls in lower classes.[14] In contrast to the findings of our study and other two studies mentioned above, Sathish Kumar et al reported much lower prevalence of depression, anxiety and stress serially 19.5% , 24.4%, 21.1% .[15] These variations in the prevalence of mental health problems could be incriminated to, differences in the scales used to assess them, socio-cultural beliefs and practices inherent to the communities under study.

Association between menstrual problems and mental health status

Dysmenorrhea was significantly associated with anxiety and stress. Though other mental health problems like anxiety and stress were more among subjects with other menstrual problems, the association was not statistically significant. The association between stress and dysmenorrhea in the present study is in similar lines with the results of a population based study by Wang et al.[16] The studies conducted by Quraishi et al Mohamadirizi et al revealed that the menstrual problems were associated with all the mental health problems like depression, anxiety and stress.[4,17] Review on the mental health and primary dysmenorrhea done by the Bajalan et al reported that significant relationship between mental health components depression, anxiety, and stress with primary dysmenorrhea.[18] Association of mental health and menstrual problems are subject to the coping skills of the girls, socio cultural practices of the communities in which they live and the amount of importance they give to these symptoms. But majority of the studies mentioned above including the present one clearly show the relationship between menstrual problems and mental health problems.

CONCLUSION

In the present study, prevalence of menstrual problems as well as mental health problems was found to be high among adolescent girls. There was a significant association between dysmenorrhea, anxiety, and stress. Thus, there is a need to undertake regular screening activities for the adolescent girls on both menstrual and mental health problems in order to detect them early and provide essential support.

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