

Prevalence of Dysmenorrhea among Adolescent Girls: A Burning Issue

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Abstract

Background: Dysmenorrhea, defined as painful cramps that occur with menstruation, is the most common gynecologic problem in women of all ages and races and one of the most common causes of pelvic pain. Painful menses in women or dysmenorrhea is a very frequently observed gynecologic problem. The true incidence and prevalence of dysmenorrhea are not clearly established in India. **Subjects and Methods:** The data were collected from the schools and colleges present in Krishna district. Female medical students and a female medico-social worker were trained for this study. Three schools and three colleges were randomly selected and from this all the girls who were willing to participate and in the age group of 14-19 years were included in the study. **Results:** The overall prevalence of dysmenorrhoea was 68% (72.3% and 63.3% in the urban and rural areas respectively). The difference in the prevalence of the urban and rural adolescent girls (study subjects) is not significant. **Conclusion:** Dysmenorrhoea is a very common problem. A number of physical and emotional symptoms are associated with dysmenorrhea and it also affects the quality of life of girls to a great extent.

Keywords: Menstrual characteristics, Dysmenorrhea, Prevalence & quality of life.

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Introduction

Exact origin of the word dysmenorrhoea is not known, but it has been mentioned in the ancient literature world-wide vivid description and social stigma associated with menstruation related mood and behavioural changes date back to Hippocrates, the Talmud and the Bible. In spite of the fact of existence of painful menstruation in ancient literature, it was only in the last half of past century when dysmenorrhea has been accorded impartial scientific evaluation. Dysmenorrhea, defined as painful cramps that occur with menstruation, is the most common gynecologic problem in women of all ages and races,^[1] and one of the most common causes of pelvic pain.^[2] Dysmenorrhea may be categorized into two distinct types: primary and secondary. Primary dysmenorrhea is defined as painful menses in women with normal pelvic anatomy, usually beginning during adolescence.^[3] Secondary dysmenorrhea is menstrual pain associated with underlying pathology, and its onset may be years after menarche. There is a wide variation in the estimate of dysmenorrhea from studies around the world reporting a range between 28% and 71.7%.^[4,5] Various studies in India revealed that the prevalence of dysmenorrhea varies from 33% to 79.67%.^[6-10] However, the true incidence and prevalence of dysmenorrhea are not clearly established in India. According to studies dysmenorrhea is interrupting their educational and social life.^[11] Due to dysmenorrhea sickness absenteeism (28- 48%) and perceived quality of life losses are prevalent among adolescent girls.^[6-9] In the

United States dysmenorrhea has been estimated to be the greatest cause of time lost from work and school.^[12] Aim of this present study was to evaluate the prevalence of dysmenorrhea and its common symptoms as well as to determine the sickness absenteeism due to dysmenorrhea and to assess the quality of life among the dysmenorrhic girls.

Subjects and Methods

This study was conducted in the Department of Obstetrics and Gynaecology, Nimra Institute of Medical Sciences, during the period of sixteen months i.e., from September 2016 to December 2017. The data were collected from the schools and colleges present in Krishna district. Female medical students and a female medico-social workers were trained for this study. Three schools and three colleges randomly selected and from this all the girls who were willing to participate and in the age group of 14-19 years were included in the study. The total sample size was 125. The tool developed was a pretested semistructured questionnaire. The items included were age at menarche, presence and absence of dysmenorrhea, its duration, amount of blood loss, irregularity and symptoms experienced during menstruation, family history, sickness absenteeism & quality of life related questions.

The following criteria were used to define dysmenorrhoea:^[13]

- Onset of pain within 6–12 hours after menarche.

- Lower abdominal or pelvic pain associated with onset of menses and lasting for 8–72 hours.
- Lower back pain during menses.
- Medial or anterior thigh pain.

The survey was completed and data was analyzed for the results with percentages.

The collected data was analyzed using descriptive and inferential statistics.

Results & Discussion

The average age of the participants was found to be between 14-16 years. Around 60.8% (76) were in the age range of 14 to 16 years and 37.6 % (47) were between 16-19 years. Majority of the participants (78.4%) had a normal BMI (18-23 kg/m²), whereas underweight and overweight categories had almost equal distribution with 10.4 % and 11.2 %, respectively[Table 1].

Table 1: Frequency and percentage distribution of sample characteristics, N = 125.

Sr. no.	Characteristics	Frequency (%)
Age in years		
1.	<13	2 (1.6%)
2.	14-16	76 (60.8%)
3.	16-19	47 (37.6%)
4.	>19	0 (0.0%)
Body Mass Index		
1.	Under-weight	13 (10.4%)
2.	Normal	98 (78.4%)
3.	Over-weight	14 (11.2%)

The overall prevalence of dysmenorrhoea was 68% (72.3% and 63.3% in the urban and rural areas respectively). The difference in the prevalence of the urban and rural adolescent girls (study subjects) is not significant. ($\chi^2 = 1.2$, $P > 0.05$) [Table 2].

Table 2: Prevalence of dysmenorrhea in adolescent girls.

Dysmenorrhea	Urban (%)	Rural (%)	Total (%)
Present	47 (72.3%)	38 (63.3%)	85 (68%)
Absent	18 (27.7%)	22 (36.7%)	40 (32%)
Total	65 (100%)	60 (100%)	125 (100%)

Findings of [Table 1 & 2] suggests that participants in the study with the history of early age at menarche had more prevalence of dysmenorrhea but it is statistically not significant. Among dysmenorrhic girls associated symptoms are headache, Vomiting & Diarrhoea (16.4%, 10.6% & 7.3%) respectively. Prevalence of dysmenorrhea was significantly more among the girls with family history of dysmenorrhea.[Table 3]

Table 3: Family history of dysmenorrhea and prevalence of dysmenorrhea

History of Family	Dysmenorrhic (%)	Non-Dysmenorrhic(%)	Total (%)
Present	41 (75.9%)	13 (24.1%)	54 (100%)
Not present	43 (60.6%)	28 (39.4%)	71 (100%)

Majority of the dysmenorrhic girls are experiencing disgusted (80.4%), irritability (69.5%), emotional instability (43.2%), loss of interest in regular work (62.5%), disturbed sleep (54.7%) & reduced appetite (51.6%) during menstrual period, these experiences are significantly less in non dysmenorrhic girls. [Table 4] clearly shows that Sickness absenteeism is significantly more among dysmenorrhic girls than non dysmenorrhic girls during menstrual period. Table 5 shows the 21.28%, 62.77% and 15.96% of girls had mild, moderate and severe pain, respectively.

Table 4: Sickness absenteeism among dysmenorrhic and non dysmenorrhic girls

Sickness absenteeism	Dysmenorrhic (%)	Non-Dysmenorrhic (%)
Present	38 (46.9%)	9 (20.4%)
Absent	43 (53.1%)	35 (79.5%)
Total	81 (100%)	44 (100%)

(Statistically Significant at p value <0.05; *NS: Statistically not significant)

Table 5: Frequency and percentage distribution of Pain characteristics of girls with Dysmenorrhea, N = 85

Sr. no.	Menstrual characteristics	Frequency (%)
A. Onset of Pain		
1.	Before menses	19 (22.3%)
2.	Day 1 of Menses	47 (55.3%)
3.	Day 2 or 3 of Menses	21 (24.7%)
B. No. of Pain days		
1.	1 day	28 (32.9%)
2.	2 days	36 (42.3%)
3.	3 days	16 (18.8%)
4.	More than or equal to 4 days	3 (3.5%)
C. Severity of Pain		
1.	Severe (7-10)	13 (15.3%)
2.	Moderate (4-7)	53 (62.3%)
3.	Mild (2-4)	18 (21.2%)

Table 6: Quality of life loss among dysmenorrhic and non dysmenorrhic girls

Quality of life characteristics	Dysmenorrhic n= 81(%)	Non Dysmenorrhic n= 44(%)
Reduced Levels of confidence at work	43 (53.1)	15 (34.1)
Poor Work satisfaction	14(17.3)	3 (4.5)
Loss of Concentration level	48 (59.2)	12 (27.3)
Poor personal relationships	43 (53.1)	10 (22.7)
Decreased physical activity	20 (24.7)	2 (2.3)

(Statistically Significant at p value <0.05; *NS: Statistically not significant)

[Table 5] shows that quality of life is significantly affected among dysmenorrhic girls. For the management of dysmenorrhea 71.5% of rural girls are relying on self-help technique as compared to 54.3% of urban girls and only 25.8 % of rural girls are using medication as compared to 43.4% of the urban girls which is statistically significant.

The findings of this present study showed a high prevalence of dysmenorrhea, that is, 68% among adolescent girls of Krishna district, Similar findings were reported by Sharma P, Malhotra C, Taneja DK etal (67.2 %),^[9] Sharma M and Gupta S. (67%),^[14] Mckay and Diem (67%),^[15] Sundell G,

Milsom I, Andersch B. (67%),^[16] Jayashree R, Jayalakshmi VY. (74%),^[17] and Harlow and Park (71.6%).^[18] Comparatively lower prevalence had been reported by Sharma A, Taneja DK, Sharma P, et al (33%),^[6] Nag (33.84%),^[19] Singh MM, Devi R, Gupta SS. (40.7%),^[17] Dysmenorrhea seems to be Familial problem similar conclusion made by Avasarala AK and Panchangam S. in their study.^[8] In this study, it was revealed that 21.2%, 62.3% and 15.3% of girls had mild, moderate and severe pain, respectively. In a study conducted by Ortiz in 1539 students of Mexican University, author concluded that dysmenorrhea was mild in 36.1%, moderate in 43.8% and severe in 20.1%.^[20] Maitri shah et al., have found that 18%, 40% and 42% of students had mild, moderate and severe pain (dysmenorrhea), respectively.^[21] Sickness absenteeism is significantly more among dysmenorrhic girls similar finding observed by Avasarala AK and Panchangam S.^[8] and Weissmen AM, Hartz AJ, Hansen MD, et al.^[22] Sickness absenteeism because of dysmenorrhoea causes wastage of millions of dollars in the U.S.A. as per the Bergsjö's study.^[23] The quality-of-life during dysmenorrhoea is comparatively poor among dysmenorrhic girls; loss of physical activity and work satisfaction, personal relationships, confidence & concentration at work also suffers. This clearly indicates that dysmenorrhoea is disturbing their life more when compared with the lives of the non dysmenorrhic girls. The restricted activity, regular work and relationship seen in this study is also found by Avasarala AK and Panchangam S.^[8] and Adeyemi AS and Adekanle DA.^[13] The girls in urban areas cannot cope up with dysmenorrhoea and they have resorted to medication as also shown by El-Gilany AH, Badawi K, El-Fedawy S.^[24] and Avasarala AK and Panchangam S.^[8] On the contrary, the girls in the rural areas are adapting to the situation by endurance and managing the problem without drugs to a large extent. They are using self-help techniques such as cold baths, lying supine, hot fomentation, home remedies like eating Fenugreek etc. There is limited and inconsistent evidence on the effectiveness of nonpharmacologic therapies for primary dysmenorrhea.^[25] Expert consensus,^[26-28] and a small study suggest that topical heat may be as effective as NSAIDs, but there is insufficient evidence for acupuncture, yoga, and massage.^[29] Exercise,^[30,27,32] and nutritional interventions (supplementation or increased intake of omega-3 fatty acids and vitamin B) may provide some benefit,^[26-28] but the evidence is limited to small RCTs.^[28]

Conclusion

These findings suggest that the dysmenorrhoea is a very common problem number of physical and emotional symptoms associated with dysmenorrhea and it also affects their quality of life of girls to a great extent. It can be better managed by mental preparation and by appropriate change in lifestyle like regular physical exercise. The urban girls should be reassured that their problem is likely to be short lived and can be managed by some self-help techniques, indulging in work rather than seeking drugs. The magnitude

and intensity of problem demands appropriate intervention through education and change in lifestyle.

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