ORIGINAL RESEARCH PAPER

Volume-7 | Issue-9 | September-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

MENSTRUAL DISORDERS IN ADOLESCENT GIRLS.

Community Medicine

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ABSTRACT

BACKGROUND: Disorders during menstruation are common problems in adolescent girls, leading to disturbance in their health as well as future reproductive life. So the present study was undertaken to study the prevalence of menstrual disorders in urban and rural field practice area of a tertiary medical college.

MATERIAL AND METHODS: This was a community based cross-sectional study in rural and urban field practice area of Indira Gandhi Government Medical College, Nagpur on the 280 adolescent girls in the age group of 10-19 years who have attained menarche.

RESULTS: Dysmenorrohea was the main disorder in both urban and rural area (66.25%) followed by premenstrual syndrome (60.89%). The statistical difference in the occurrence of any menstrual disorder between urban and rural area was not significant (P>0.05).

CONCLUSION: Disorders like dysmenorrhoea and premenstrual syndrome are prevalent in both urban and rural areas.

KEYWORDS

Dysmenorrhoea, Premenstrual Syndrome, Adolescence, Menorrhagia, Oligomenorrhoea.

INTRODUCTION

Adolescence is a period of turbulent growth and development when the physical and psychological changes take place and is important because it comprises of around one-fifth population of India (Paul D, 2007). WHO defines adolescence as age group between 10-19 years (WHO 1986). Menstruation is an issue in adolescent girl's life with medical, social and psychological dimensions. Menstrual morbidities constitute an important unmet area of reproductive health services for women in developing countries.They are often source of anxiety for the girls and families. The common menstrual disorders are dysmenorrhoea, premenstrual syndrome, abnormal uterine bleeding (**Padubidri VG, 2006**). The presence of these disorders can have negative impact on the education and activities of the adolescent girls particularly absenteeism from school and disturbance in working as well as economic consequences in terms of health care costs due to the consumption of expensive hormonal drugs and laboratory tests. More attention should be given to inclusion of diagnosis and treatment of menstrual complaints within reproductive health care programs. Relatively simple and inexpensive therapies are currently available to address a range of menstrual complaints and monitoring of menstrual symptoms which may be important in efforts to reduce pelvic infections and anemia (Harlow SD et al, 2004). Various host factors like age, nutritional status, anemia may have impact on these menstrual disorders. This study is undertaken to study the prevalence of menstrual disorders in urban and rural area as well as to study association of some of the host factors on these disorders.

MATERIAL AND METHODS

This was a cross-sectional, community based study was conducted in rural and urban field practice area of Indira Gandhi Government Medical College, Nagpur. Approval from institutional ethical committee was taken before commencing the study. Study subjects included adolescent girls in the age group of 10-19 years. Pilot study was done on 100 girls initially. Prevalence of dysmenorrhoea in pilot study was found to be 59.57%. Taking 95% of the confidence interval and 80% power of the study, sample size were estimated to be 272 (Lwanga SK et al., 1991). After taking informed consent, total 280 girls who had achieved menarche were interviewed both from rural and urban area. Girls were interviewed by house to house survey. Anthropometric measurements included height and weight. Body mass index was used as a parameter for assessing nutritional status. Anaemic status of the girls was assessed by doing Hemoglobin estimation by sahli's hemoglobinometer.

Dysmenorrhoea was defined as painful menstruation during last 3 months and severity of dysmenorrhoea was measured by 'Verbal Multidimensional Scoring System scale (**Sundell G, 1990**). Premenstrual syndrome was defined as syndrome complex occurring 7 days prior to menstruation. Premenstrual syndrome include irritability, malaise, constipation, headache, breast tenderness, swelling over the body, abdominal bloating. Detailed history related to menstrual disorders like menorrhagia, oligomenorrhoea and polymenorrhoea in the past three cycles were obtained. Menorrhagia was defined as the subjective complaint of heavy menstrual flow. Short menstrual cycle was defined as a mean cycle length of less than 21 days, while a normal menstrual cycle was defined as 21 to 35 days. Oligomenorrhoea or those with long cycle lengths was defined as a mean cycle length of more than 35 days in the past 6 months, irrespective of the amount of flow. (**Lee LK et al., 2006; Chung PW et al., 2011**). Those with significant abnormality were referred accordingly. Anthropometric measurements included height and weight. Body mass index was used as a parameter for assessing nutritional status. Body mass index ≥18.5-24.99 was considered normally nourished and ≥25 as overweight. Anaemic status of the girls was assessed by doing Hemoglobin estimation by sahli's hemoglobinometer. Hemoglobin level >12 gm% was considered to be normal. Statistical analysis was done by percentages, chi-square test. Statistical significance of differences between groups was tested. P value<0.05 was taken as statistically significant.

RESULTS:-

Table 1: Distribution of Urban and Rural Adolescent Girls According to Socio- Demographic Factors

Demographic factors	Urban (N=280)	Rural (N=280)	Total (N=560)
Age			
10-13	9 (3.21)	14 (5.00)	23 (4.10)
13-16	116 (41.43)	129 (46.07)	245 (43.75)
16-19	155 (55.36)	137 (48.93)	292 (52.15)
Working Status			
Student Left the school	265 (94.64)	235 (83.93)	500 (89.29)
a. Doing household work	5 (1.79)	16 (5.71)	21 (3.75)
b. Doing job	10 (3.57)	29 (10.36)	39 (6.96)
Socio-Economic Status			
Upper	0	0	0
Upper middle	45 (16.07)	17 (6.07)	62 (11.07)
Lower middle	110 (39.29)	135 (48.21)	245 (43.75)
Upper lower	76 (27.14)	112 (40.00)	188 (33.57)
Lower	49 (17.50)	16 (5.71)	65 (11.61)
Nutritional status			
<18.5	213 (76.07)	225 (80.36)	438 (78.21)
18.5-24.99	62 (22.14)	50 (17.85)	112 (20.00)
>25	5 (1.79)	5 (1.79)	10 (1.79)
Anemic status			
<12 gm%	246 (87.86)	265 (94.64)	511(91.25)
≥ 12gm%	34 (12.14)	15 (5.36)	49 (8.75)

Socio-demographic characteristics of the adolescent girls showed significant difference when anemic status was considered. More girls in the rural area were anemic as compared to urban area.

Table 2: Distribution of Urban and Rural Adolescent Girls According to Menstrual Disorders

Menstrual Disorders	Urban N=280 (%)	Rural N=280 (%)	Total N=560 (%)	p value
Dysmenorrhoea	188 (67.14)	183 (65.35)	37 (66.25)	P>0.05
Premenstrual symptoms	177 (63.21)	164 (58.57)	341 (60.89)	p>0.05
a) Irritability	90 (32.14)	75 (26.79)	165 (29.46)	p>0.05
b) Malaise	90 (32.14)	79 (28.21)	169 (30.17)	p>0.05
c) Headache	61 (21.78)	64 (22.86)	125 (22.32)	p>0.05
d) Constipation	82 (29.28)	81 (28.93)	163 (29.11)	p>0.05
e) Heaviness in the breast	14 (5.00)	16 (5.71)	30 (5.36)	p>0.05
f) Swelling over the body	10 (3.57)	9 (3.21)	19 (3.39)	p>0.05
Irregular menses	8 (2.86)	9 (3.21)	17 (3.03)	p>0.05
Menorrhagia	3 (1.07)	2 (0.71)	5 (0.89)	p>0.05
oligomenorrhoea	10 (3.57)	14 (5.00)	24 (4.28)	p>0.05
Polymenorrhoea	1 (0.35)	0 (0)	1 (0.17)	p>0.05
Delayed menses	4 (1.43)	4 (1.43)	8 (1.43)	p>0.05

Dysmenorrhoea was the main disorder found in both urban and rural areas. The statistical difference in the occurrence of any menstrual disorder between urban and rural area was not significant (P>0.05).

Table 3: Distribution of Urban and Rural Adolescent Girls as Per Grades of Dysmenorrhoea

Grades of Dysmenorrhoea	Urban N=280 (%)	Rural N=280 (%)	Total N=560 (%)
0 (None)	97 (34.64)	100 (35.71)	197 (35.18)
1 (Mild)	106 (37.86)	101 (36.07)	207 (36.96)
2 (Moderate)	37 (13.21)	39 (13.93)	76 (13.57)
3 (Severe)	36 (12.86)	35 (12.50)	71 (12.68)
4 (Very Severe)	4 (1.43)	5 (1.79)	9 (1.61)
Total	280 (100)	280 (100)	560 (100)

Verbal multidimensional scoring system scale was used to assess grades of dysmenorrhoea (Sundell G, 1990). Overall 97(34.64%) girls in the urban and 100 (35.71%) of the girls in the rural area were having no dysmenorrhoea. 40(14.29%) of the girls were having severe or very severe dysmenorrhoea. No significant difference was found for the presence of dysmenorrhoea in the urban and the rural girls. (^{2}=0.07, p=0.7906, not significant).

Table 4: Effect of Some Host Parameters on Dysmenorrhoea

Parameter	Dysmenorrhoea present (n=371)	Dysmenorrhoea absent (n=189)	Total (n=560)	P value
Age				
10-13	10 (43.48)	13 (56.52)	23 (100)	x^2=12.82,
13-16	150 (61.22)	95 (38.78)	245(100)	df=2
16-19	211 (72.26)	81 (27.74)	292 (100)	P=0.0016
Nutritional status (Kg/m2)				
Undernourished (<18.5)	280 (63.93)	158 (36.07)	438 (100)	x^2=4.85,
Normally nourished (≤18.5-24.99)	82 (73.21)	30 (26.79)	112 (100)	df=1
Overweight (>25)	9 (90)	1 (10)	10 (100)	P=0.0276
Anaemia				
Anaemia present (<12 gm%)	366 (71.62)	145 (28.38)	511 (100)	x^2=75.44, df=1
Anaemia absent (>12 gm%)	5 (10.20)	44 (89.80)	49 (100)	P=0.0000

Thus with increasing age, prevalence of dysmenorrhoea was increased. Prevalence of dysmenorrhoea was more in girls with anaemia. Overweight girls (BMI>25kg/m2) and girls anaemic girls (<12 gm%) had significantly more percentage of dysmenorrhoea.

Table 5: Effect of Some Host Parameters on Premenstrual Syndrome

Parameter	Pre-menstrual syndrome present (n=341)	Pre-menstrual syndrome Absent (n=219)	Total (n=560)	P value
Age				
10-13	19 (82.61)	4 (17.39)	23 (100)	x^2=4.75
13-16	140 (57.14)	105 (42.86)	245 (100)	df=1
16-19	182 (62.33)	110 (37.67)	292 (100)	P=0.0293
Nutritional status				
Undernourished (<18.5)	263 (60.05)	175 (39.95)	438 (100)	x^2=0.4363 df=1
Normally nourished (≥18.5-24.99)	78 (63.93)	44 (36.07)	122 (100)	p= 0.61
Anaemia				
Anaemia absent	4 (8.16)	45 (91.84)	49 (100)	x^2=62.70 df=1
Anaemia present	337(65.95)	174(34.05)	511 (100)	p= 0.000

Premenstrual syndrome was found to have significant association with age and anaemia but not associated with nutritional status. In the age group of 10-13 years 82.61% of the girls were suffering from premenstrual syndrome. Premenstrual syndrome was found to be more in girls having anemia (HB<12 gm %).

DISCUSSION

Study subjects included adolescent girls between 10-19 years. Menstrual dysfunction is a common cause of referral to the gynaecology clinic and the problem has a considerable impact on the health status and the quality of life women (**Karaout N et al., 2012**). Although menstrual irregularities may be normal during the early postmenarchal years, pathological conditions need to be diagnosed and require proper management.

The Prevalence of dysmenorrhoea in urban area was 67.12% and in rural area was 65.27% which was similar. Similar findings were obtained from **Avasatra AK, 2008**. No significant difference in the prevalence of dysmenorrhoea in the urban and in the rural area. Other studies found prevalence of dysmenorrhoea similar to the present study (**Andersch B et al., 1982 , Sharma P et al., 2008 , Sundell G et al., 1990, Lee LK et al., 2006**) and lesser as compared to the study by (**Banikarim C et al., 2000, Agrawal A et al., 2008**) where the prevalence was 79.6%. But it was more as compared to the study by **Patil SN et al, 2009** who observed prevalence of 44.2%.

Verbal multidimensional scoring system scale was used to assess grades of dysmenorrhoea (**Sundell G et al, 1990**). 35.18% of the girls were having no dysmenorrhoea, while 64.82% of the girls were having pain in different severity. These differences in the degree of pain severity may be related to cultural differences in pain perception and variability in pain threshold (**Dawood YM et al, 2006**).

Premenstrual syndrome in the present study was present in 58.68% in the rural and 63.38% in the urban area which was less than that found by **Lee LK et al, 2006**. Other studies (**Nourjah P et al., 2008, Patil SN et al., 2009**) found that 50% of study subjects had one or more symptoms of premenstrual syndrome. Present study found that 2.71% of the girls in the urban and 3.13% of the girls in the rural area were having irregular menses, 3.39% in urban and 4.12% of rural girls were having oligomenorrhoea and 0.17% of the girls in the urban area had polymenorrhoea. A study by **Khanna A et al, 2005** proportion of girls reporting irregular periods was higher in rural (44.6%) than urban. Avasatra **AK et al, 2008** found 6.2% of the girls were having irregular menses. But (**Swain S et al., 1977, Sharma P et al., 2008, Patil SN et al., 2009, Bachman G et al., 1982**) found the prevalence more than that observed in the present study. found that the incidence of shorter cycle was 1.8% and that of the longer cycle was 13.5%. The finding was consistent with these study findings (**Wilson CA et al., 1982, Singh A et al., 2008 and Sanfilippo J et al., 2008**). This could be explained on the fact that abnormal bleeding patterns often reflect anovulatory menstrual cycle and takes average 20 months from menarche to establishment of regular menstrual period.

Our study found dysmenorrhoea was significantly associated with increasing age which is consistent with the findings of **Dawood YM et al, 2006**. All the overweight (BMI>25) were having dysmenorrhoea. It was found in studies that obese girls had increased prevalence of dysmenorrhoea because of hyperandrogenemic effect (**Harlow SD et al., 1996; Lee LK et al., 2006**). Dysmenorrhoea was significantly associated with presence of anemia (**Bano Rafia, 2012**). Premenstrual syndrome was significantly associated with increasing age and anemia (**Freeman EW et al, 1995**).

CONCLUSIONS

Prevalence of menstrual disorders was more both in the urban and the rural areas hence correct knowledge about the aetiology, their severity and treatment options should be provided to girls.

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