Original article:

Prevalence of menstrual problems and its association with nutritional status among reproductive age group women in south-west Delhi: A community based cross-sectional study

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Abstract

Background: Menstruation is a physiological process and all women have to go through it for a major part of their life. Various studies have revealed that nutrition status of women specially anemia and BMI have an impact on the menstrual problems of women.

Aim: To find the prevalence of menstrual problems and its association with the nutritional status among reproductive age group women. Setting and design: Community based cross sectional study

Material and methods: 656 women of reproductive age group were enrolled in the study using systematic random sampling. Sociodemographic details and menstrual problems were asked. Height and weight was recorded. BMI was calculated and graded according to Body Mass Index scale by WHO. Anemia was seen clinically by the presence of pallor.

Statistical analysis: Data were entered and analyzed into a computer using SPSS version 20. The descriptive analysis including proportions, percentages, frequency distribution and measures of central tendency was done. Association between menstrual problems and nutritional status was done.

Results and conclusions: The mean age of the women was 29.9 ±9.7 years. Out of the total, 58.5% belonged to the normal range for BMI, 37% were obese/overweight and 4.6% were underweight. Anemia as seen by the presence of pallor, was present in 34.6% of the subjects. The prevalence of dysmenorrhea was seen to be 39.5%, while irregular bleeding was seen in 28.2%. The prevalence of menstrual irregularities was high among anemics and both underweight and overweight. Dysmenorrhea was also more common among the overweight women.

Key words: Dysmenorrhoea, menstrual irregularities, BMI, anaemia

Introduction

Menstruation is a physiological process and all women have to go through it for a major part of their life.

Along with menstruation comes problems related to it, which at most of the times are considered normal. Although studies reveal thatwomen are concerned about menstrual disorders, little attention is paid to understanding or ameliorating women's menstrual complaints. Menstruation though not fatal, affects the quality of life causing absenteeism and in long term may affect the complete development of woman[1].

Various studies have revealed that nutrition status of women specially anemia and BMI have an impact on the menstrual problems of women[2,3]. National data also suggests that in urban area as much as 51 % of the reproductive age group women are anemic, while nearly 30% are obese or overweight[4]. This study was conducted in an urban area of south west Delhi to find the prevalence of menstrual problems and its association with the nutritional status among reproductive age group women.

Materials and Methods

Study Design, settings and participants

Community based cross sectional study was conducted among reproductive age group women (15-49 years) residing in Sector 7, Dwarka area area of south-west Delhi, which is a field practice area under the Department of Community medicine, Lady Hardinge Medical College. Study period was January 2012- April 2013. The total population of study area is approximately 10,000, residing in approximately 1200 households out of which 2170 were women of reproductive age group. All girls, over 15 years of age, who had attained menarche were included in the study while women in primary ammenorrhoea, who had not yet attained menarche, women who had attained menopause and had undergone hysterectomy were excluded.

Sample size and sampling procedures

The sample size was determined using a formula for estimation of single population proportion with the assumption of 95 % confidence interval, 5 % margin of error, and prevalence of dysmenorrhea as 50% and 3% absolute precision[5]. To compensate for the non-response rate, 10 % of the determined sample was added up on the calculated sample size and the final sample size was found to be 650. To find the required sample size approximately 30% of the population was covered. All the 8 blocks in the area were included by systematic random sampling. In each block first house was selected randomly and every third house was visited to find women of reproductive age group.

Data Collection Procedures

A semi-structured interview schedule was designed, pretested and used for data collection. Enquiry was made about the menstrual cycle regarding duration, number of days, number of pads soaked for studying menstrual pattern and pain during menstrual bleeding.

Height was measured in meters and weight was recorded on a flat surface close to 100 grams (least count of electronic weighing scale = 100gm). BMI was calculated and graded according to Body Mass Index scale by WHO. Anemia was seen clinically by the presence of pallor.

Data processing and statistical analysis

Data were entered and analyzed into a computer using SPSS version 20. The descriptive analysis including proportions, percentages, frequency distribution and measures of central tendency was done. Bivariate analysis was performed between dependent variable (Menstrual problems) and each of the independent variables (BMI and Anemia status), one at a time. Their odds ratios (OR) at 95 % confidence intervals (CI) and P-values were obtained.

Ethical considerations

Ethical clearance and permission was obtained from the ethical review board of Lady Hardinge Medical College, New Delhi. The purpose of the study was explained to the subjects and written informed consent was obtained from each participant. Subjects were informed of their full right to skip or ignore any question or withdraw from their participation at any stage of the study.

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Sociodemographic characteristics of the study subjects

A total of 656 girls and women participated in the study. The mean age of the study subjects was 29.9 ±9.7 years. Largest proportion of women belongs to the age group of 20-29 years i.e. 31.3% followed by 30-39 years and 40-49 years, which was 29.5% and 18.9 % respectively. Women in the age group of 15-19 years were 18%. Nearly 45% of the subjects belonged to the upper middle socio economic status followed by upper lower socio economic status which was 35.8%. Another 17.5% of subjects belonged to lower middle socio economic status. Very few subjects belonged upper and lower socioeconomic status. More than half of the study subjects (66.3%) had been formally educated for more than 10 years, while 8.1% of study subjects were illiterate. Majority of the study subjects (74.2%) belonged to a nuclear family and more than half of the subjects (62%) were married. 20.8% of the study subjects were students in school or college and another 29.1% were employed. (Table 1)

Nutritional Status of the study subjects

Out of the total study subjects 58.5% (384) belonged to the normal range for BMI, 37% (242) were obese/overweight and 4.6% (30) were underweight. Anemia as seen by the presence of pallor, was present in 34.6% (227) of the subjects.(Figure 1 and Figure 2)

Prevalence of menstrual problems

The prevalence of dysmenorrhea was seen to be 39.5%, while irregular bleeding was seen in 28.2%. (Table 2)

Nutritional predictors of menstrual problems

Overweight women were at a higher risk of having dysmenorrhea when compared to underweight women [OR= 3.5, 95% CI= 1.33-8.5] and non-anemic women seen to have a higher chance of dysmenorrhea [OR= 1.52. 95% CI= 1.08- 2.13]. Both underweight and overweight women were are at a high chance of having menstrual irregularities as compared to the subjects who had normal weight. [OR= 7, 95% CI= 3.1-15] & [OR= 2.4, 95% CI= 1.6-3.4] respectively. Anemic were at a higher risk of having menstrual irregularities [OR= 2.71, 95% CI= 1.9-3.8].

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Table 1: Sociodemographic profile of study subjects (N=656)

Age	N(%)
15-19	118(18)
20-29	205(31.3)
30-39	198 (30.2)
40-49	135 (20.6)
Socioeconomic status of the study subjects*	N(%)
Upper	7 (1.1)
Upper middle	294 (44.8)
Lower middle	115 (17.5)
Upper lower	235 (35.8)
Lower	5 (0.8)
Years of education	N(%)
>10yrs	435 (66.3)
>5-<10 years	112 (17.1)
≤5 years	56(8.5)
illiterate	53(8.1)
Type of family	N (%)
Nuclear	487 (74.2)
Joint**	169 (25.8)
Marital Status	N(%)
Married	407 (62)
Single	231 (35.2)
Widowed/separated	18 (2.7)
Occupation	N(%)
Student	149 (22.8)
Employed	200 (30.4)
Unemployed	307 (46.8)

*modified Kuppuswamy scale

** includes three generation family

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Table 2: Prevalence of menstrual problems among the study subjects	
Menstrual problems	Frequency (%)
Dysmenorrhoea	259 (39.5)
Irregular bleeding	185 (28.2)

Table 3: Nutritional predictors of menstrual problems				
Nutritional status	**Dysmenorrhea**		P value	Odds (CI)
BMI	Present (%)	Absent (%)		
Underweight	6 (20)	24 (80)		1
Normal weight	142 (37)	242 (63)	0.02	1.4 (1.04-2.0)
Over weight	111 (45.9)	131 (54.1)	0.01	3.4 (1.33-8.5)
Anemia				
Anemic	75 (33)	152 (67)		1
Non- Anemic	184 (42.9)	245 (57.1)	.014	1.52 (1.08-2.13)
	Menstrual Pattern			
BMI	Regular (%)	Irregular (%)		
Normal	308 (80.2)	76 (19.8)		1
Underweight	11 (36.7)	19 (63.3)	0.001	7 (3.1-15)
Over weight	152 (62.8)	90 (37.2)	0.001	2.4 (1.6-3.4)
Anemia				
Non-Anemic	339 (79)	90 (21)	0.001	1
Anemic	132 (58.1)	95 (41.9)		2.71 (1.9-3.8)

Discussion

In our study, 37% of the study subjects were overweight, while only 4.6% were underweight. 34.6% of our study subjects were anemic. This data is not comparable to the national data, which might be due to the difference in the settings, as this study is only limited to the urban area.

Our study showed a prevalence of dysmenorrhea as 39.5%. In another population based survey, conducted in Goa, the prevalence of dysmenorrhoea in women of age group 18-45 was greater than 50%[7]. Another study conducted in in women aged 15-54 years found dysmenorrhoea to be present in 9.2-26.4%[8]. Another multi country study done by **WHO** reported dysmenorrhoea in 25-58% of women[9]. In our study menstrual irregularities were seen in 28.2% of women. Most of the previous studies on menstrual irregularities has been done in only adolescents, and the studies show that menstrual irregularity is as high as 50% among them[10,11]. Our results showed a lower prevalence as our age group included all women of reproductive age group and it is known that adolescents face a higher burden of menstrual problems.

Menstrual irregularities were more commonly seen in anemics and both underweight and overweight. These findings were comparable to study done in Maharashtra and Pakistan[2,3]. Our study also showed a higher prevalence of dysmenorrhea

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among the overweight women, results also being similar to study done in Pakistan[2].

The limitation of this study was the cross-sectional nature of data that could obscure the causal effect of different factors and it lacks qualitative data.

The study has addressed the issue of menstrual problems, which are usually being paid little attention due to short term inconvenience caused by them. Study also shows the importance of good nutritional status and its impact on menstrual problems.

Conclusion

The study concludes that women with good nutritional status suffer less from menstrual problems. Education regarding good health and its impact on menstrual cycles is needed. All outpatient departments could incorporate screening for pattern of menstrual cycle among eligible girls and women which could address and allow personalized discussion for the issues of menstrual problems.

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