

SYMPTOMS ASSOCIATED WITH MENSTRUATION AND SOME CORRELATES OF DYSMENORRHOEA IN COLLEGE GIRLS

by

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Introduction

The persisting taboos and ignorant superstitions that surround all aspects of menstruation in tradition-bound Indian societies makes any study on menstruation difficult. Factual data regarding symptoms commonly associated with dysmenorrhoea in Indian women are, therefore, scarce.

Common symptoms associated with menstruation and some correlates of dysmenorrhoea as observed in college girls of Banaras Hindu University (BHU) are reported in this paper. The study was carried out as part of a comprehensive health survey of BHU resident girls.

Material and Methods

Out of 458 college girls of Banaras Hindu University residing in three hostels inside the University campus, 384 (83.8%) could be contacted and covered under the study. The girls were interviewed in their hostels by the first author and after assuring them about the confidential nature of the enquiries, information was

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recorded on a pre-designed, pre-tested coded proforma. Physical examination of girls was neither possible nor attempted.

Although all the States and Union Territories of India were represented in the BHU girls population under study, the majority belonged to Uttar Pradesh and Bihar; their percentages being 42.7 and 17.4 respectively. The majority i.e. 82.3% were from urban areas and 91.1% were Hindus. The majority i.e. 171 (44.5%) belonged to families having per capita monthly income of Rs. 100-249, while 103 (26.8%) had per capita income Rs. 50-99, 52 (13.5%) had per capita income less than Rs. 50 and 58 (15.1%) had per capita income Rs. 250 and above.

Age range of the girls studied was 16-25 years with majority i.e. 305 (79.5%) below 21 years. All the girls had attained menarche. Only 20 (5.2%) were married.

Results and Discussion

Prevalence of Premenstrual symptoms (Table I): Out of 384 girls interviewed, 132 (34.4%) girls complained of premenstrual symptoms. Natu (1966) and Koshi *et al* (1970) observed premenstrual symptoms in 29.3% college girls at Poona and 21.1% school girls at Lucknow respectively. The main premenstrual symptoms reported by girls of the present study were pain in abdomen 46 (12.0%), backache 40 (10.4%), pain in thigh 21 (5.5%) and

depression 12 (3.1%). Engorgement of breasts was complained by 5 girls (1.3%) only as compared to 2.8% Poona girls (Natu, loc cit) and none of Lucknow girls (Koshi *et al*, loc cit).

TABLE I

Prevalence of Premenstrual Symptoms in BHU Resident Girls

Pre-menstrual symptoms	No.	%
Backache	40	10.4
Pain in abdomen	46	12.0
Pain in thighs	21	5.5
Engorgement of breasts	5	1.3
Depression	12	3.1
Nervousness	2	0.5
Others*	6	1.6
No symptoms	252	65.6
Total	384	100

* Others included two girls with nervousness and one each with giddiness, headache, nausea, constipation and vague body pains.

Prevalence of dysmenorrhoea (Table II): Dysmenorrhoea was a more common symptom than the premenstrual syndrome. Dysmenorrhoea was present in 172 (44.8%) girls interviewed. Although no gynaecological examination was performed, but as observed by Golub *et al* (1957) also it would be reasonable to assume that dysmenorrhoea was of primary nature in girls of this age. The pre-

valence of dysmenorrhoea observed in this study was almost similar to that observed by Natu (loc cit), Pandya (1960) and Shah (1958) whose figures were 44.2%, 49.3% and 46.9% respectively. Koshi *et al* (loc cit) reported a lower figure of 26.0% but their study included school girls as compared to college girls in other studies reported above.

Dysmenorrhoea was categorised as mild if girls attended to daily work (i.e. classes) without any analgesics, moderate if girls could attend classes with analgesics and severe if they had to miss classes because of discomfort. Of 172 girls with a history of dysmenorrhoea, 70 (40.7%) had mild, 24 (14.0%) had moderate and 78 (45.3%) had severe dysmenorrhoea (Table II).

Prevalence of symptoms associated with menstruation (refer Table VII): Out of 384 girls interviewed, 168 (43.7%) had no symptoms, 88 (22.9%) had both dysmenorrhoea and premenstrual symptoms while 44 (11.5%) and 84 (21.9%) had premenstrual symptoms and dysmenorrhoea alone respectively.

From the above account it is obvious that out of the total 384 girls a large number i.e. 216 (56.3%) had symptoms associated with menstruation and at least in 78 (20.3%) the symptoms were disabling causing suspension of the daily routine. Loganbal and Rao (1969), Rao (1963), Kapur (1966), Natu (loc cit) and Koshi

TABLE II

Distribution of Girls with Severity of Dysmenorrhoea

Severity of dysmenorrhoea	No.	% out of girls with dysmenorrhoea	% out of total examined (N = 384)
Mild	70	40.7	18.2
Moderate	24	14.0	6.3
Severe	78	45.3	20.3
Total with dysmenorrhoea	172	100	44.8
Total without dysmenorrhoea	212	—	55.2

et al (loc cit) also observed symptoms associated with menstruation in 84.3%, 78.4%, 78.4%, 83.6% and 38.7% girls studied by them respectively.

Some Correlates of Dysmenorrhoea: To find out a correlation between prevalence of dysmenorrhoea and hours and type of work the girls with a history of dysmenorrhoea were analysed according to the faculty of their studies (Table III).

cal and 50.0 in other faculties (Table III). But the differences were found to be not significant ($X^2 = 0.88$, $P > 0.50$) thus indicating that hours of work and type of work have no relationship with dysmenorrhoea. This observation was in agreement with Natu's report (loc cit) that the prevalence of menstrual symptoms was statistically not significant in girls of science and medical faculty as compared

TABLE III
Faculty-wise Distribution of Girls with Dysmenorrhoea

Faculty	No. Examined	No. with Dysmenorrhoea	%
Arts	207	94	45.4
Science	95	39	41.0
Medical	64	30	46.9
Others	18	9	50.0
Total	384	172	44.8

$$X^2 = 0.88 \quad P > 0.50.$$

The girls of science and medical faculties have to work for longer hours and keep standing for 3-4 hours per day for their practical work while the girls of Arts and other faculties have to work for fewer hours requiring sitting for 4-5 hours for lectures every day. The percentage of girls with history of dysmenorrhoea were 45.4 in Arts, 41.0 in science, 46.9 in medi-

to girls of Arts faculty.

Prevalence of dysmenorrhoea was studied in girls who indulged in physical exercise or sports and games regularly and in girls who did not (Table IV). As against 101 (41.4%) girls who took exercise or participated in sports and games regularly, 71 (50.7%) in the other group suffered from dysmenorrhoea but the dif-

TABLE IV
Relationship of Dysmenorrhoea with Exercise

Dysmenorrhoea	Exercise				Total	
	Yes		No		No.	%
	No.	%	No.	%		
Nil	143	58.6	69	49.3	212	55.2
Mild	41	16.8	29	20.7	70	18.2
Moderate	15	6.1	9	6.4	24	6.3
Severe	45	18.4	33	23.6	78	20.3
Total	244	100	140	100	384	100

$$X^2 = 8.35 \quad P < 0.05$$

ference was found to be statistically not significant ($X^2 = 3.31, P > 0.50$). This supported the concept that physical activity has got no relationship with prevalence of dysmenorrhoea in girls.

The reports in literature about the relationship of dysmenorrhoea with physical activity are conflicting. To summarise in words of Golub *et al* (1957) "it has been reported that women who exercise have a lower incidence of dysmenorrhoea and on the other hand it is also reported that those who do not participate in sports have no more interference with normal routine at the time of menses than those who do."

Out of 294 girls who had regular menses, 122 (41.5%) had dysmenorrhoea (Table V). On the other hand, out of 90

and irregular menses was found to be statistically significant ($X^2 = 8.35, P < 0.05$).

The amount of menstrual flow was categorised as scanty, normal and profuse somewhat arbitrarily on the basis of the girls feelings and the first author's assessments through careful questioning about the number and types of pads changed daily, specially during first three days of bleeding (Table VI).

Out of 54 girls with scanty bleeding, 19 (35.2%), out of 270 girls with normal bleeding, 113 (41.9%), and out of 60 girls with profuse bleeding, 40 (66.7%) had dysmenorrhoea. Thus dysmenorrhoea was more common in girls with profuse bleeding than in girls with normal/scanty bleeding and it was more common in girls with normal bleeding than in girls with

TABLE V
Relationship of Dysmenorrhoea with Regularity of Menstruation

Dysmenorrhoea	Regularity of Menstruation				Total	
	Regular		Irregular		No.	%
	No.	%	No.	%		
Nil	172	58.5	40	44.4	212	55.2
Mild	54	18.4	16	17.8	70	18.2
Moderate	17	5.8	7	7.8	24	6.3
Severe	51	17.3	27	30.0	78	20.3
Total	294	100	90	100	384	100

$X^2 = 8.35 P < 0.05$

girls who had irregular menses, 50 (55.6%) had dysmenorrhoea. As such, a larger percentage of girls with irregular menses had dysmenorrhoea. Further, while percentage of mild and moderate dysmenorrhoea in the two groups of girls i.e. with regular and irregular menses was almost similar, 17.3% girls with regular menses had severe dysmenorrhoea as compared to 30.0% girls with irregular menses. The difference in the percentage of girls with dysmenorrhoea with regular

scanty bleeding. These differences were found to be statistically highly significant ($X^2 = 40.19, P < 0.001$). However, in girls with dysmenorrhoea, symptoms were severe in 63.2% (12/19) with scanty bleeding and in 70.0% (28/40) with profuse bleeding as compared to only 33.6% (38/103) girls with normal bleeding.

Significant relationship of dysmenorrhoea with irregular menstruation and profuse bleeding is suggestive of the fact that dysmenorrhoea in a large number of girls

TABLE VI
Relationship of Dysmenorrhoea with Amount of Menstrual Flow

Dysmenorrhoea	Amount of Menstrual Flow						Total	
	Scanty		Normal		Profuse		No.	%
	No.	%	No.	%	No.	%		
Nil	35	64.8	157	58.1	20	33.3	212	55.2
Mild	6	11.1	59	21.9	5	8.3	70	18.2
Moderate	1	1.9	16	5.9	7	11.7	24	6.3
Severe	12	22.2	38	14.1	28	46.7	78	20.3
Total	54	100	270	100	60	15.6	384	100

$$X^2 = 40.19 \text{ P} < 0.001.$$

might be due to imperfect ovarian function causing disturbances between the ovarian hormones. The possibility of an imbalance of ovarian hormones in young adolescent girls studied in this series cannot be ruled out.

Relationship of dysmenorrhoea with pre-menstrual symptoms was studied (Table VII): Out of 132 girls with pre-menstrual symptoms, 88 (66.7%) had dysmenorrhoea as compared to 84 (33.3%) in 252 girls without premenstrual symptoms. The difference in the percentage of girls with dysmenorrhoea in the two groups i.e. with and without pre-menstrual symptoms was statistically highly

significant ($X^2 = 40.11 \text{ P} < 0.001$). As such girls with premenstrual symptoms had a greater tendency to suffer from dysmenorrhoea. Further, dysmenorrhoea was severe in 32.6% girls with premenstrual symptoms as compared to 13.9% only in the girls without it. Kessel (1963) also observed that dysmenorrhoea was significantly correlated with premenstrual syndrome.

Mental health cards of girls with and without dysmenorrhoea were analysed separately. Out of 186 girls who had psychological symptoms, 98 (52.7%) had dysmenorrhoea as compared to 70 (36.1%) girls among 194 who had no psychological

TABLE VII
Relationship of Dysmenorrhoea with Premenstrual Symptoms

Dysmenorrhoea	Pre-menstrual Symptoms				Total	
	Present		Absent		No.	%
	No.	%	No.	%		
Nil	44	33.3	168	66.7	212	55.2
Mild	34	25.8	36	14.3	70	18.2
Moderate	11	8.3	13	5.1	24	6.3
Severe	43	32.6	35	13.9	78	20.3
Total	132	100	252	100	384	100

$$X^2 = 40.11, \text{ P} < 0.001.$$

N.B.: 88 girls had both dysmenorrhoea and pre-menstrual symptoms while 44 had pre-menstrual symptoms only and another 84 had dysmenorrhoea only.

symptoms and the differences were found to be statistically significant ($X^2 = 11.34$ $P < 0.01$) (Table VIII). It may be, therefore, concluded that a relationship existed between the presence of psychological symptoms and dysmenorrhoea in girls.

While there is no unequivocal proof of psychogenic origin of dysmenorrhoea, it is generally agreed that psychological factors in dysmenorrhoea are important. Israel (1963), Fluhmann (1957), and Miller *et al* (1953) consider psychogenic factors to be important in the etiology of dysmenorrhoea but they also agree that in a certain number of cases psychological symptoms might be the result rather than the cause of dysmenorrhoea. Wittkower and Wilson (quoted by Golub and Meduke, 1963) found that dysmenorrhoeic patients were not as well adjusted during childhood as were control subjects. Pennington (1957) reported that 8% symptoms associated with menstruation were of psychogenic origin and yet another 72% symptoms had components of both psychogenic and somatic origin. Schuck (1951), on the other hand, found no psychogenic basis for dysmenorrhoea while Golub *et al* (1957) found group psycho-

therapy of no value in treatment of teenage dysmenorrhoea. Perhaps the situation is best described by Schuck (*loc cit*) who stated that admittedly the "psyche" played a part in dysmenorrhoea as an overlay and psychoneurotic women also had dysmenorrhoea.

Summary

The prevalence of premenstrual symptoms and dysmenorrhoea was studied in 384 girls residing in hostels of Banaras Hindu University by personal interview. No physical examinations were done. However, in view of the young age of the subjects dysmenorrhoea in most of them was presumed to be of primary type.

Out of 384 girls interviewed, 168 (43.7%) had no symptoms, 88 (22.9%) had both dysmenorrhoea and premenstrual symptoms, while 44 (11.5%) and 84 (21.9%) respectively had premenstrual symptoms and dysmenorrhoea alone. As such in all 56.3% of girls had symptoms associated with menstruation and in 78 (20.3%) of girls the condition was disabling requiring suspension of normal work.

The prevalence of dysmenorrhoea was not significantly different in girls of diffe-

TABLE VIII
Relationship of Dysmenorrhoea with Psychological symptoms

Dysmenorrhoea	Psychological Symptoms*						
	Present		Absent		Total		
	No.	%	No.	%	No.	%	
Present	98	52.7	70	36.1	168	44.2	$X^2 = 11.34$ $P < 0.01$
Absent	88	47.3	124	63.9	212	55.8	
Total	186	100	194	100	380	100	

* Psychological symptoms included hysterical fits, contemplating ending life, attempted ending life, extreme changes in moods requiring absenting from classes frequent change of friends, morbid fear, difficulty in falling sleep due to worrying thoughts, disturbed sleep or definite insomnia due to worry or fear.

N.B.: Interview of only 380 girls (out of 384) could be taken for mental symptoms referred to above.

rent faculties in whom the type and hours of work were different. The prevalence was also not significantly different in girls who indulged in exercise or sports and games regularly than those who did not. The prevalence was significantly higher in girls with irregular menses, profuse bleeders and those who had premenstrual symptoms. A relationship was also observed between psychological symptoms and dysmenorrhoea, the prevalence of dysmenorrhoea being significantly higher in girls with psychological symptoms.

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