

A STUDY ON MENSTRUATION OF MEDICAL COLLEGE GIRLS AT LUCKNOW

by

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Menstruation, though a physiological body function in the female, has a high degree of variability in the so called normal, regular menstrual cycles, the total length of the cycles and the period of bleeding. The first few years of menstrual life, like the last few, are marked usually by variable pattern with relatively more regular pattern in the middle life. The variation in patterns is usually about five to seven years after menarche and for about six to eight years before the menopause (Treloar *et al*, 1968).

Material and Methods

One hundred and ninety-two girls of different semesters, first to sixth, of the K.G. Medical College, Lucknow, were studied to know the pattern of menstruation during two years from 1969 to 1971. The questionnaire, which was confidential, was distributed by a lady lecturer (Pushpa Sharma) for being filled in. Each proforma was checked in the presence of the girl student concerned to ensure completeness. Haemoglobin estimation by Sahli's method was also done. Here it may be pointed out that the purpose of selecting medical college girls was

to obtain as accurate information as far as possible on the physiology of menstruation at an age when the menstruation would have settled down to be of a regular pattern after the first few years of the menarche.

Observations

Age: The girls belonged to ages 18 to 25 years. The minimum age of admission in the medical college is 17 years. Majority (85.5 per cent) were between 18 to 21 years of age. Mean age of the girls under study was 20.04 years.

Age of menarche: The age of menarche ranged from 11 to 15 years, but majority of them (66.2 per cent) attained menarche between 13 to 15 years (Table I). The mean age at menarche was 13.62 years with a s.d. of 1.04 years.

TABLE I
Showing Age at Menarche Among
the 192 Girls

Age in years	Number	Percent- age	
11	7	3.6	
12	25	13.0	
13	67	34.9	} 66.2
14	60	31.3	
15	33	17.2	
Total	192	100.0	

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Awareness and source of information about menarche: One hundred and seventeen or 60.9 per cent girls had no previous knowledge about menarche and 75 or 39.1 per cent knew something about menarche, majority among the latter (56.0 per cent) had gained the information from the mother, 21.3 per cent from sisters and the remaining 23.7 per cent were informed either by friends, relatives or by reading books.

One hundred and eighty-four or 95.8 per cent girls had taken advice for the care during periods and this advice was given by mothers. Only 8 or 4.2 per cent girls did not seek any advice.

Emotional reactions at first menstruation: Among the 192 girls, only 3 (1.5 per cent) did not have any reaction, but if we include 29 girls more, who were indifferent at the time of first menstruation, it means that 32 or 16.6 per cent girls were not much upset with this physiological episode. The remaining 160 or 83.4 per cent girls had one or more emotional reactions at first menstruation. The average number of reactions per girl was 1.6. Half of the girls (52.6 per cent) were uncomfortable and a similar number (50.9 per cent) were surprised, horrified, scared or stunned. Almost all of the girls (172 or 89.6 per cent) were of the view that previous knowledge of menarche is necessary.

Regularity of menstrual periods: One hundred and forty-three or 74.5 per cent of girls were menstruating at intervals of 26 to 30 days. In 19 or 9.9 per cent the menstrual interval was less than 25 days. The mean intermenstrual period was 28.21 days with a s.d. of 1.58 days.

The range of menstrual bleeding was between 2 and 8 days, with maximum of 8 days in 3 girls and minimum of 2 days in one girl. Majority of girls (126 or 65.6

per cent) were menstruating for four or five days. The average days of menstrual flow was 4.9 days with a s.d. of 1.35 days.

One hundred and forty-three or 74.5 per cent girls were having maximum bleeding on the second day, 30 or 15.6 per cent on the first day and 19 or 9.9 per cent on the third or the fourth day of menstruation.

Majority of the girls, 170 or 88.5 per cent had no change in menstrual pattern after joining medical college. There was also no relationship in change of menstrual pattern and mental tension during examination, as 177 or 92.2 per cent girls found no change during examinations.

Prevalence of menstrual symptoms: One hundred and eighty or 93.8 per cent girls were having premenstrual or menstrual complaints. It was also revealed that they were having more than one symptom in premenstrual and during menstruation days, the average being 2.2 premenstrual complaints and 2.1 complaints during menstruation per girls in the 180 girls.

Out of 180 girls having complaints, only 35 or 19.4 per cent had to take rest and the remaining 145 or 80.6 per cent were doing their normal work.

History of discomfort between two periods was also mentioned by 65 or 33.8 per cent girls and the main complaints were pimples on the face and pain in the abdomen.

The families of 34 girls (17.7 per cent) were practicing untouchability during menstruation. Among the 192 girls only 17 or 8.8 per cent were of the view that untouchability should be encouraged, perhaps they wanted rest during this period.

Present feeling about the menstruation was also studied. One hundred and seventy-eight or 92.7 per cent girls had a feeling of botheration. In 164 or 92.1 per

TABLE II
Premenstrual and Menstrual Complaints Among 180 Girls

Complaints	Premenstrual complaints		Complaints during menstruation	
	Number	Percent- age	Number	Percent- age
Pain and heaviness in lower abdomen	121	67.2	123	68.3
Pain and cramps in thigh and calf muscles	170	38.9	77	42.8
Backache	61	33.9	44	24.4
Psychological upset	35	19.4	30	16.6
Change in appetite	21	11.7	15	8.3
Headche	18	10.0	14	7.8
Breast changes	21	11.7	8	4.4
Constipation	16	8.8	13	7.2
Nausea and vomiting	11	6.1	16	8.8
Miscellaneous	30	16.6	38	21.1
Total	404		378	

cent botheration was due to physical discomforts, and in the remaining 14 or 7.9 per cent girls due to social implications like untouchability and other beliefs.

Haemoglobin estimation: The haemoglobin estimation of the 192 girls was studied in relation to the degree of bleeding during menstruation.

The mean haemoglobin of girls was 12.04 gms/per cent with s.d. of 0.18 gms per cent. Only 1 girl was anaemic having haemoglobin 9.0 gm per cent and 99.5 per cent girls were having haemoglobin above

10 gm per cent. There were only 17 or 8.8 per cent girls menstruating excessively, but were not anaemic.

Height and weight of girls: There was no material difference in height and weight of girls by their age as this becomes constant after the age of 17 years.

The height and weight of the girls were studied in relation to the menarcheal age (Table IV).

The group of seven girls having the menarche at 11 years had the highest

TABLE III
Haemoglobin and Menstrual Bleeding

Haemoglobin in gram per cent	Menstrual Bleeding						Total	
	Normal		Excessive		Scanty		Number	Percent
	Number	Percent	Number	Percent	Number	Percent		
-10	1	0.6	-	-	-	-	1	0.5
-11	21	12.4	5	29.4	-	-	26	13.5
-12	119	70.0	7	41.2	5	2.6	131	68.3
Above 12	29	17.0	5	29.4	-	-	34	17.7
Total	170	88.5	17	8.9	5	2.6	192	100.0

TABLE IV
Height and Weight According to Menarcheal Age

Age at menarche (Years)	Number of girls	Average height (cms.)	Average weight (kgm.)
11	7	157.8	50.79
12	25	155.6	45.53
13	67	156.9	45.54
14	60	161.0	46.20
15	33	157.5	45.21
Total	192		

weight average of 50.79 kgms and the second highest average height of 157.8 cms.

Discussion

The objective indicator of maturation among girls is menarcheal age, age at which first menstrual bleeding starts. The Scientific Group on Biological Components of Human Reproduction in 1969 (W.H.O., 1970) observed that there is wide variation in the age at menarche within and between different ethnic groups due to physical, socio-economic and cultural environment rather than to genetic factors. To assess the relative importance of the factors involved, it is necessary to determine the normal distribution of the age of menarche in different population. In the present study, the mean age at menarche was 13.62 years with a s.d. of 1.04 years. The earliest age at menarche was 11 years and maximum age was 15 years. Monreal and Armijo (1968) found the average age of menarche in Chilean women to be 13.93 years. A few other studies conducted in India gave an average age at menarche to be 13.6 years (Purandare, 1945); 13.8 years (Rao, 1963); and 14.1 year (Koshi *et al*, 1970) which are similar to the present study, while Natu (1966), like in the present study, found the age at menarche to be

between 13 and 14 years in 615 college girls in Poona.

In recent years education on sex matters to girls is gaining importance in Western countries. In India, the mention of topic of menstruation causes embarrassment and very few parents enlighten their children about the normal functions of reproductive organs. This is evident from the fact that only 75 or 39.1 per cent girls knew something about menarche and majority of them (56.0 per cent) had the information from mothers. Rao (1963) also reported that only 33.4 per cent of the girls in a medical college in New Delhi had awareness about menarche and the main source of information was mothers and sisters.

Trelour *et al* (1967) are of opinion that the first few years of menstrual life are marked usually by a varied pattern of mixed short and long intervals with a characteristic transition of the relatively more regular pattern of middle life. There were 143 or 74.5 per cent girls, who were menstruating regularly with the cycle ranging from 26 to 30 days. It means that their menstruation had become stabilized. The mean intermenstrual period in the group under study was 28.21 days with a s.d. of 1.58 days. Monreal and Armijo (1968) found 90.2 per cent in Chilean

women menstruating regularly. Koshi *et al* (1970) and Rao (1963) reported that 85.5 per cent urban school girls in Lucknow and 88.5 per cent girls in a New Delhi medical college had regular menstruation.

The average menstrual flow was of 4.9 days with a s.d. of 1.35 days in the present study. Koshi *et al* (1970) found 4.5 days with a s.d. of 1.6 days and Rao (1963) reported 5.05 days with a s.d. of 1.2 days.

A woman's menstrual pattern can be altered by sudden changes in the environment or by psychological trauma (W.H.O., 1970). In the present study, no relationship in change of menstrual pattern and mental tension due to examination was found, as 92.2 per cent girls had no change in menstrual pattern during examinations.

There were 180 or 93.7 per cent girls who had complaints associated with menstruation. The average number of premenstrual complaints was 2.24 and complaints during menstruation was 2.1. Rao (1963) found 78.4 per cent girls having menstrual complaints and Natu (1966) found the corresponding percentage of 84.29.

Widholm *et al* (1968) found anaemia in 6.5 per cent of the 473 Danish girls studied. In the present study only 1 or 0.5 per cent girl was anaemic, perhaps due to better nutrition as it was a special group of medical college girls. The mean haemoglobin was 12.04 gm per cent with s.d. of 0.18 gm per cent.

Summary

The pattern of menstruation and social background of 192 medical col-

lege girls at Lucknow have been studied. The girls were between the age of 18 to 25 years with mean age of 20.04 years. The mean age at menarche was 13.62 years with a s.d. of 1.04 years, the range was 11 to 15 years. Only 83.1 per cent had some information about menarche. 83.4 per cent girls had one or more emotional reactions at first menstruation. The mean intermenstrual period was 28.2 days with a s.d. of 1.58 days. The average menstrual flow was 4.9 days with a s.d. of 1.35 days. Premenstrual and during menstrual complaints were present in 93.8 per cent of the girls. The mean haemoglobin among girls was 12.04 gm per cent with s.d. of 0.18 gm per cent. Seven girls having menarche at 11 years had the highest weight average and second highest height average.

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