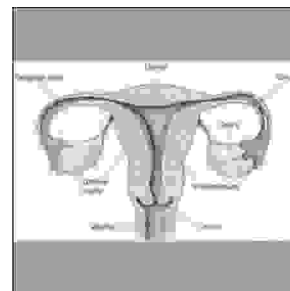


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PROF-1069

ADOLESCENT AGE GROUP; NORMAL MENSTRUAL CYCLE AND MENSTRUAL DISORDERS

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ABSTRACT... drmehnazkhakwani@yahoo.com. **Introduction:** Puberty in girls is the phase of transition from child to mature woman. Menarche is the first menstrual period at puberty. The individual then becomes functionally capable of reproduction. Normally, it is a coherent process involving estrogen production, increased somatic growth and development of secondary sexual characteristics. **Objective:** To investigate the normal menstrual cycles and menstrual disorders in adolescent age group. **Study design:** Population based survey. **Setting:** Study was conducted in the various schools of Multan city. **Material and Methods:** 500 school going girls. **Results:** The pattern of menstrual bleeding among Pakistani girls. Majority of the (i.e. 170 (34%) girls had normal pattern of bleeding. The day of heaviest flow was day 2 i.e. 292(49%) followed by day 1 i.e. 192(38.4%) of the cases. Menorrhagia as revealed by passage of clots was present in 65(13%) of the cases. Majority of girls had their cycle duration between 28-30 days. More than 85% of girls used home made pads during periods. Majority 156(48.4%) of girls had dysmenorrhoea for 1st and 2nd day of the cycle. Dysmenorrhoea was found to be present in 322(64.4%) of the girls. About half of subjects developed dysmenorrhoea with the onset of menarche and about quarter started having dysmenorrhoea 3 months after menarche. Minority of the girls received education or information regarding periods prior to menarche. The majority was educated either with or after the menarche. Majority of subjects belonged to middle socio-economic status. Majority of girls had regular periods since menarche. Majority of the remaining had irregular periods for sometimes due to anovulatory cycles which were spontaneously normalized. Those girls who had irregular periods, in majority of cases the irregularity was corrected spontaneously after 3 months probably favouring earlier anovulatory cycles. Premenstrual symptoms were complained by 258(51.6%) of the girls. Majority 248(49.6%) of girls took menstruation as normal change of life. In majority 248(62.5%) of cases the mother and elder sister provided the information. Out of 500 girls, 397(79.4%) girls were either informed or educated about periods.

Key words: Menstrual bleeding, Dysmenorrhoea, Anovulatory

INTRODUCTION

Puberty in girls is the phase of transition from child to mature woman. Menarche is the first menstrual period at puberty¹. The individual then becomes functionally capable of reproduction. Normally, it is a coherent process involving estrogen production, increased somatic growth and development of secondary sexual characteristics². Most of the changes are gradual, though menarche is a single event that can be dated. Normally puberty involves a fairly regular sequence of events between the ages of 10-16 years. The range of normality is wide and varies with the family, social class, diet, general health and environment.

After birth, the gonads remain quiescent until adolescence, when they are activated by gonadotropins from the anterior pituitary to bring about the final maturation of the reproductive system. This period of final maturation is known as adolescence. It is often also called puberty, although puberty, strictly defined, is the period when the endocrine and gametogenic functions of the gonads have first developed to the point where reproduction is possible. Full sexual maturation involves completion of breast development, the occurrence of regular ovulation and especially psychological maturity related to sexuality. It takes longer and occupies the mid and late teens. The first event at puberty is the larches, the development of breasts, followed by pubarche, the development of axillary and pubic hair, and then by menarche, the first menstrual period³. The initial periods are generally anovulatory, and regular ovulation appears about a year later. In contrast to the situation in adulthood, removal of the gonads during the period soon after birth to puberty causes little or no increase in gonadotropin secretion, so gonadotropin secretion is not being held in check by the gonadal hormones. In children between the ages of 7 and 10, a slow increase in oestrogen secretion precedes the more rapid rise in the early teens.

The age at the time of puberty is variable. In Europe and United States, it has been declining at the rate of 1-3 months per decade for more than 175 years. In the United States in recent years, puberty generally occurs

between the ages of 8 and 13 in girls. Menarche generally occurs within 2 years of the earliest signs of breast development and within one year of peak growth velocity and close to the breast stage 4. It tends to occur earlier in girls who are taller and heavier for their age. Bone age is generally about 13 years.

Another event that occurs in humans at the time of puberty is an increase in the secretion of adrenal androgens. The onset of this increase is called adrenarche. It occurs at the age of 8-10 years, without any change in the secretion of cortisol or ACTH. It may be due to a change in the enzyme systems in the adrenal so that more pregnenolone is diverted to the androgen pathway. On the other hand, there is some evidence that it is due to increased secretion of an as yet un-isolated adrenal androgen stimulating hormone (AASH) from the pituitary gland. The events of puberty result from maturation of dynamic processes rather than acquisition of new functions^{4,5}.

In the prehistoric phase menstruation was connected with the lunar cycles⁶. Arrhenius in his study of the influences of cosmic phenomenon upon the organism has compared the curves of nativity, mortality, menstruation and epileptic attacks with periodic maxima and minima of the electric condition of the air. This study was conducted to investigate the normal menstrual cycles and menstrual disorders in adolescent age group.

MATERIAL AND METHODS

Study was conducted in the various schools of Multan city. 500 school going girls.

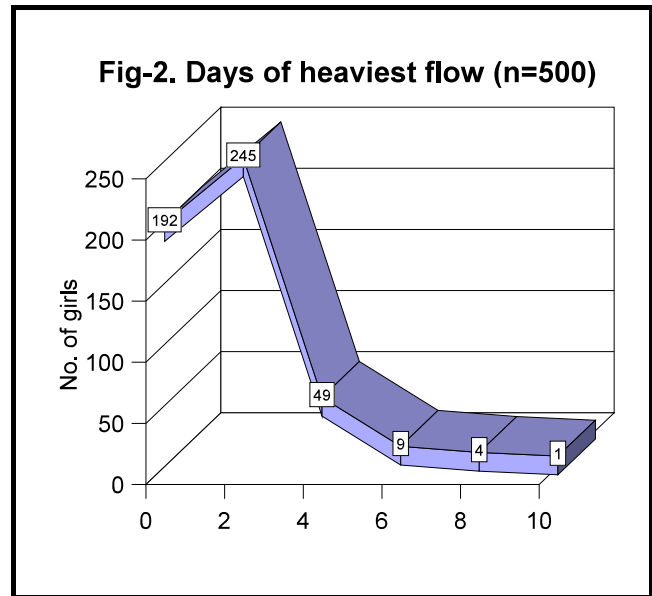
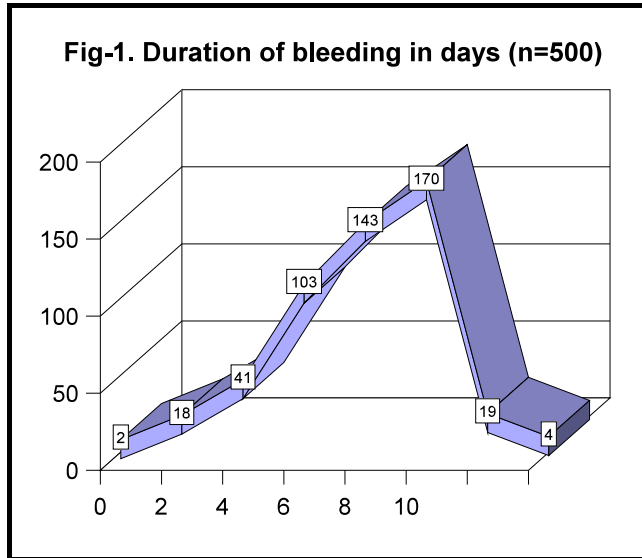
Inclusion criteria

School-going girls who achieved their menarche were included in the study. A questionnaire or Proforma was used.

RESULTS

Fig-1 shows the pattern of menstrual bleeding among Pakistani girls. Majority of the (i.e. 170(34%) girls had normal pattern of bleeding. The day of heaviest flow was day 2 i.e. 292(49%) followed by day 1 i.e. 192(38.4%) of

the cases (Fig-2). Menorrhagia as revealed by passage of clots was present in 65(13%) of the cases (Fig-3).



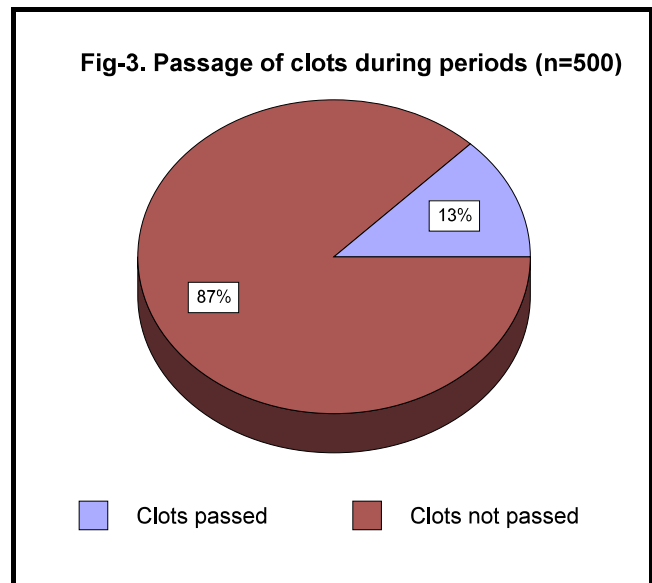
Majority of girls had their cycle duration between 28-30 days (Table-I). Table-II shows that more than 85% of girls used home made pads during periods.

Majority 156(48.4%) of girls had dysmenorrhoea for 1st and 2nd day of the cycle (Table-III).

Fig-4 shows that dysmenorrhoea was found to be present in 322(64.4%) of the girls.

About half of subjects developed dysmenorrhoea with the onset of menarche and about quarter started having dysmenorrhoea 3 months after menarche as shown in (Table-IV).

Fig-8 shows that only minority of the girls received education or information regarding periods prior to menarche. The majority was educated either with or after the menarche.



Majority of subjects belonged to middle socio-economic status (Table-VIII).

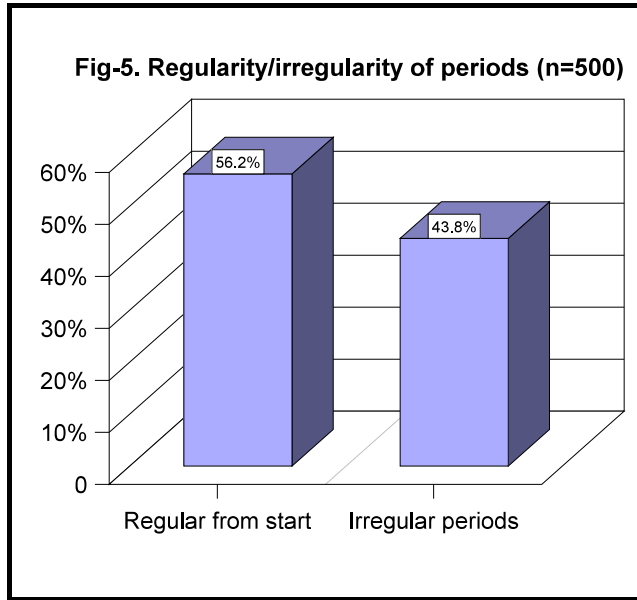
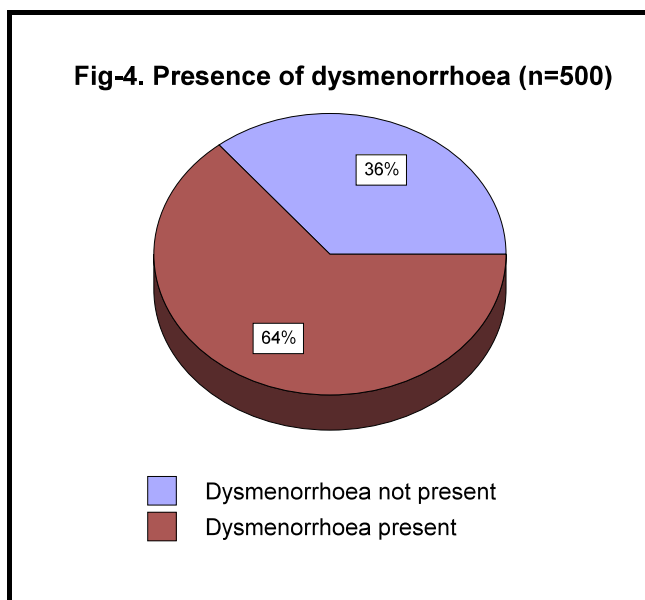
Fig-5 shows that majority of girls had regular periods since menarche. Majority of the remaining had irregular periods for sometimes due to anovulatory cycles which were spontaneously normalized.

Duration of cycle	No. Of students	% age
15 days	8	01.6
28-30 days	413	82.6
11/2 2 months	44	08.8
3 months	8	01.6
Irregular	27	5.4

Type of protection	No. Of students	% age
Home made pads	429	85.8
Store sanitary pads	70	14.0
Tampons	-	-
No protection	1	0.2

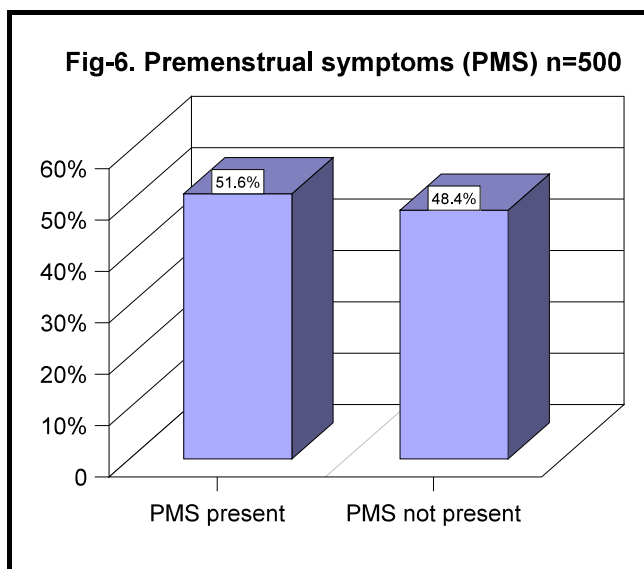
Distribution of dysmenorrhoea	No. of students	% age
First day	156	48.44
First two days	109	33.85
Throughout the cycle	31	09.62
Before the onset of periods	26	08.07

Distribution was first noted	No. of students	% age
With the onset of menache	167	51.86
After first 3 months	70	21.73
After first 6 months	29	09.0
After one year	38	11.8
After two years	18	5.59



Those girls who had irregular periods, in majority of cases the irregularity was corrected spontaneously after 3 months probably favouring earlier anovulatory cycles (Table-V).

Fig-6 shows that premenstrual symptoms were complained by 258(51.6%) of the girls.



Majority 248 (49.6%) of girls took menstruation as normal change of life (Table-VI).

Table-V. Duration of irregular periods

After menarche periods were irregular for	No. of students	% age
First 3 months	118	53.88
First 6 months	33	15.06
One year	23	10.50
Two years	18	08.21
Still irregular	27	12.32

Table-VI. Subject's view about menarche

View about this change of life	No. of students	% age
Normal change	248	49.6
Feared	47	09.4
Embarrassed or confused	93	18.6
Bad or irritating	112	22.4

In majority 248 (62.5%) of cases the mother and elder sister provided the information (Table-VII).

Table-VII. Person providing education (n=397)

Person who educated	No. of students	% age
Mother	248	62.46
Friend	24	06.04
Elder sister	86	21.66
Cousin	28	07.05
Auntie	9	02.26
Teacher	2	0.50
Book	1	-

Table-VIII. Family's monthly income in rupees (n=500)

Income group (Rs)	No. Of students	% age
Less than 2000	7	01.4
Upto 2000	76	15.2
Upto 4000	146	29.2
Upto 6000	99	19.8
> 6000	172	34.4

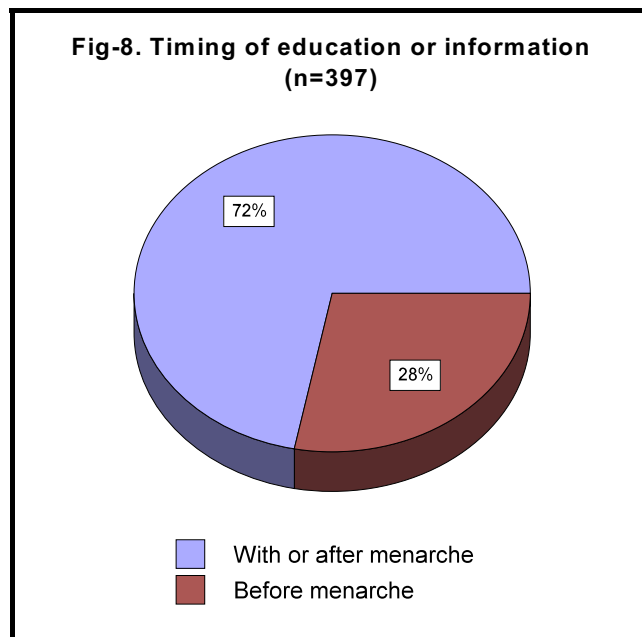
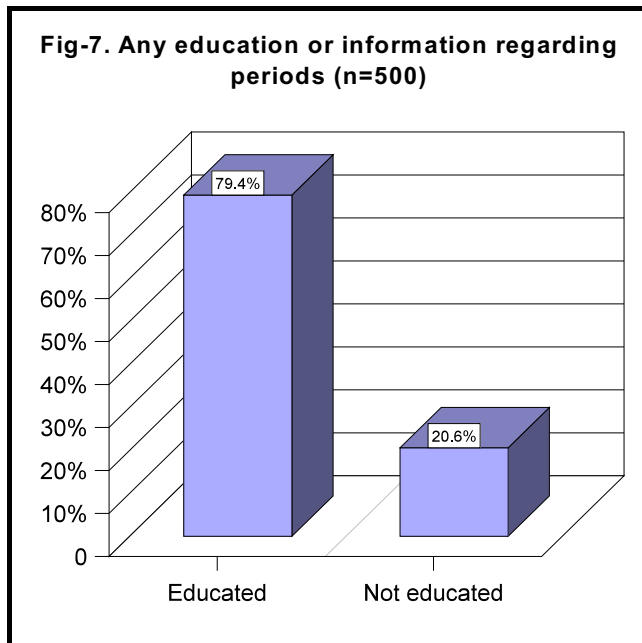
Out of 500 girls, 397(79.4%) girls were either informed or educated about periods (Fig-7).

DISCUSSION

It was a randomized prospective cross-sectional study. Five hundred school girls were interviewed from an urban population of Multan. In our study the majority of girls had menstrual bleeding lasting for 4 to 7 days. The day of heaviest flow was day 1 and 2 in majority of the cases.

Menorrhagia was assessed subjectively by us. Although there are certain objective measurements of menstrual blood loss but those were out of scope of our study. So, menorrhagia as revealed by passage of clots was present in 13% of girls in our study. In other studies^{7,8}, it was present in 12.1% and 8.5% respectively.

The length of the menstrual cycle was found to be 28-30 days in majority of the cases in our study. Home made pads were used for protection by majority of the girls.



Dysmenorrhoea was found in 64.4% of cases in our study. In other studies the prevalence of dymenorrhoea was 40.4%⁹, 31.5%⁷, 76%⁸ and 91%¹⁰. The difference

may be due to the reason that dysmenorrhoea is a subjective feeling and different women have different pain thresholds. Majority of the girls had dysmenorrhoea during the first day or first two days of the cycle. Dysmenorrhoea was started with the onset of menarche in majority of the cases, followed by onset after 3 months.

In various studies^{7,8} premenstrual symptoms were found to be present in 86% and 81.5% respectively. In our study they were found in 51.6% of subjects. Premenstrual symptoms are again subjective and as already mentioned they are related to stress and emotional turbulence.

Majority of the girls welcomed menstruation as a normal change of life. 18.6% were embarrassed, 22.4% considered it as bad or irritating and 9.4% were feared.

In our study it was seen that 79.4% of the girls were educated or informed about the periods and out of them only 27.7% were educated before the menarche. Rest was educated either with or after menarche so that the girls were not prepared for menarche in most of the cases. Girls should receive support and reassurance for menarche. They should be provided with knowledge about menstrual hygiene and offered facts about menstrual biology. Mothers and elder sisters can openly share their own experiences and offer emotional support. In our study the majority of the girls were educated by their mothers followed by elder sisters, cousins, friends, Aunties and teachers. Nobody got the information from a book. Health care providers can provide materials on menstruation¹¹.

In another study¹², it was observed that socioeconomic, cultural and admixture variables were not significantly related to age at menarche. In our study it was also found that socioeconomic status was not significantly related to age at menarche.

CONCLUSION

Education of the young girls is very important and should be done sympathetically and affectionately before

menarche preferably by the mother or elder sister and continuing education is required. The common pubertal problems like dysmenorrhoea and menorrhagia are usually related to anovulatory cycles and reassurance is very important part of the management.

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The wise man is not afraid.
He knows his strength and
does not fear.

Likewise, he knows his
weakness
and does not attempt the
impossible.

Buddhism