

A Study on Menarche and Fertility Among the Ladiya of Sagar District, Madhya Pradesh

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INTRODUCTION

Age at menarche is regarded as an important factor in the reproductive life of a woman, which is the most obvious sign of puberty. The age of menarche has been of interest to the human biologists largely because of its genetic nature, marked population variability and its high sensitivity to several non-genetic factors (Padmavathi et al., 1984). There is a wide variation in the age at menarche. It has been pointed out by Mazer and Israel (1951) that menarche might normally appear at any time during the period of transition from childhood to maturity occasionally as early as nine years after as late as sixteen years, depending upon racial, constitutional and environmental factors.

Many authors have reported the average age at menarche of various population groups of India (Bhattacharya, 1986; Sen, 1953; Sarkar and Chaudhury, 1967; Rakshit, 1960; Pattnaik, 1971; Dubey and Srivastav, 1967; Ghosh and Kumari, 1973; Rakshit, 1962; Rajangam and Thomas, 1987; Padmavathi et al., 1984; Saini, 1989; Rao, 1989; and others). The reproductive span of a female is constituted by the period between the onset of menarche and menopause. The age at menarche thus, can be used as a quantitative and objective measure of reproductive physiology and thus partially reflecting the biological capacity of a woman to reproduce. Sharma and Chowdhury (1995) found a positive relationship between the age at menarche and fertility among the Gond of maharashtra. Ghosh and Kumari (1973) suggested that wide variation in menstrual cycle being responsible for differential fertility in women. Keeping the above in view an attempt has been made in the present study to provide certain information on age at menarche and fertility among the Ladiya of Sagar district, Madhya Pradesh.

MATERIAL AND METHODS

The present study was carried out during April, 1999 on 188 unrelated women belonging to the

Ladiya, a sub-group of the Chamar community residing in Pathariya Jat village of Sagar district, Madhya Pradesh. Answers were recorded in the questionnaire by personal interview. The method of "recalled age of menarche" was applied to collect the data on age at menarche. Other demographic information relating to reproductive performance, age at marriage, age at first and last birth were also collected. Out of these 188 women 66 belong to the post menopausal group and the rest are yet to attain the menopause.

RESULTS AND DISCUSSION

The age wise distribution of menarcheal age is set out in table 1. At the age of 13 years the highest percentage (39.89) of women are found to have first menstruation. The mean menarcheal age of the Ladiya women is found to be 13.55 ± 0.12 . It has been pointed out by Montagu (1948) that the menarche before 12 years of age is abnormal. As such in the present study the frequency of abnormality is quite low i.e. 6.38%. In comparison with other Indian populations it is seen that the mean menarcheal age among the Ladiya women is almost equal to that of the Christian and Hindu of Uttar Pradesh (Dubey and Srivastav, 1967), Khandayat of Orissa (Pattnaik, 1971) and Muslim of West Bengal (Bhattacharya, 1986), but it is higher than that of the Brahmin, Vaidya and Kayastha of West Bengal (Sen, 1953) and Karan and Brahmin of Orissa (Pattnaik, 1971). However,

Table 1: Age specific occurrence of menarche

Age at menarche (in years)	No.	%
11	12	6.38
12	33	17.55
13	75	39.89
14	25	13.30
15	18	9.57
16	12	6.38
17	5	2.66
18	5	2.66
19	3	1.60
Total	188	100.00

among the Punjabi Khatri (Ghosh and Kumari, 1973) and Maharashtra Brahmin (Rakshit, 1962) the mean menarcheal age is found to be higher than that of the studied population.

In table 2 the age specific occurrence of menarche is shown among the pre and post menopausal women. The highest percentage of women are found to have first menstruation at 13 years of age among both the pre and post menopausal women. However, the occurrence of menarche at the age of 13 years is considerably higher in post menopausal group (51.52%) than that of the pre menopausal group (33.61%).

Table 2: Age specific occurrence of menarche in pre and post menopausal women

Age at menarche (in years)	Pre-menopausal		Post-menopausal	
	No.	%	No.	%
11	6	4.92	6	9.09
12	19	15.57	14	21.21
13	41	33.61	34	51.52
14	21	17.21	4	6.06
15	16	13.11	2	3.03
16	9	7.38	3	4.55
17	4	3.28	1	1.51
18	4	3.28	1	1.51
19	2	1.64	1	1.51
Total	122	100.00	66	100.00

The mean menarcheal age among the pre and post menopausal women are found to be 13.70 ± 0.15 and 13.09 ± 0.19 respectively (Table 3). Difference between the two means is statistically significant ($t=2.52$), which indicates an upward trend in the premenopausal group. A similar trend is noticed among the Brahmin (Rakshit, 1962) of Maharashtra, while among the Sindhi and Punjabi Khatri (Ghosh and Kumari, 1973) a declining trend is noticed.

Sharma and Chowdhury (1995) say "Besides, the age at menarche, the knowledge about the adolescent sterility is equally important as it is also one of the factors contributing towards the differential fertility". In view of this, an attempt has been made to deal with different periods of adolescent sterility in terms of menarcheal age. For the sake

Table 3: Mean menarcheal age in pre and post menopausal women

Group	No.	Range	Mean \pm S.E.
1. Pre-menopausal	122	11-19	13.70 ± 0.15
2. Post-menopausal	66	11-19	13.09 ± 0.19

of this analysis the women who are completely sterile and those who have got married recently are not taken into consideration. It is seen from table 4 that the period of sterility is highest in the lowest menarcheal age group, while it is lowest in the highest menarcheal age group. Average sterility periods in 11-12 years and 17 years and above menarcheal age group are 5.11 and 3.85 years respectively. Thus, adolescent sterility indicates the inverse relation with menarcheal age. Similar type of inverse relation is also reported among the Gond of Maharashtra (Sharma and Chowdhury, 1995).

Table 4: Adolescent sterility and menarcheal age of the Ladiya women

Sterility period (in years)	Menarcheal age (in years)			
	11-12	13-14	15-16	17 and above
1	-	3	2	1
2	4	23	7	2
3	13	16	5	3
4	11	12	6	3
5	4	16	5	1
6	1	8	-	2
7	3	7	3	1
8	3	2	1	-
9	4	2	1	-
10	-	7	-	-
11	1	1	-	-
12	-	2	-	-
13	2	-	-	-
Average sterility period	5.11	4.66	3.97	3.85

Table 5 shows the age at last birth in post menopausal women. To obtain the age at last birth, the women who have attained the menopausal age are taken into consideration, while the others are excluded as they are still capable of reproducing. It is seen from table 5 that 92.42% women have completed their reproduction at the age of 40 years. The average age at last birth among the Ladiya women is found to be 32.83 ± 0.65 . Sharma and Chowdhury (1995) have reported that the average age at last birth among the Gond women is 32.30 ± 1.49 , while Rakshit (1962) has reported that the average age at last birth is 32.79 ± 0.83 among the Brahmin women of Maharashtra. Thus, the present findings support Rakshit (1962) and Sharma and Chowdhury's (1995) findings.

Reproductive performance of post menopausal women is shown in table 6 according to different menarcheal age groups. It appears that the average of pregnancy is comparatively lower in lower

Table 5: Age at last birth in post menopausal women

Age of mothers at last birth (in years)	No.	%
18-21	2	3.03
22-25	4	6.06
26-29	10	15.15
30-33	22	33.33
34-37	15	22.73
38	4	6.06
39	1	1.51
40	3	4.55
41	1	1.51
42	2	3.03
43	-	-
44	2	3.03
45	-	-
Total	66	100.00

Table 6: Reproductive performance of post menopausal women

Age at menarche (in years)	No. of mothers	Average no. of pregnancies	Average no. of deaths	Average live births
11-12	20	7.60	0.15	7.45
13-14	38	8.11	0.14	7.97
15 and above	8	7.62	0.25	7.37

and higher menarcheal age group than that in the intermediate one. Similarly the average of fertility is also high in the intermediate age group. Thus, no definite trend is noticed from this relationship.

In fine, it can be said that the variation in the onset of menstrual cycle is perhaps responsible for differential fertility among the Ladiya women.

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KEY WORDS Menarcheal Age. Adolescent Sterility. Fertility. The Ladiya.

ABSTRACT The present paper attempts to provide certain

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information on menarcheal age and fertility among the Ladiya, a sub-group of the Chamar community residing in Pathariya Jat village of Sagar district, Madhya Pradesh. The average age at menarche among the Ladiya is found to be 13.55 ± 0.12 . Mean menarcheal age among the pre and post menopausal women are 13.70 ± 0.15 and 13.09 ± 0.19 respectively, which shows the upward trend in premenopausal group. The adolescent sterility indicates an inverse relation with the menarcheal age, while the relationship between the menarche and fertility exhibits no definite trend. Variation in the onset of menstrual cycle seems to have played its role for differential fertility among the Ladiya women.

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