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Recall Menarcheal Age among the Adolescent Girls- A Comparative Study

By Th. Kanon Devi & H. Sorojini Devi

Dhanamanjuri University

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Objective: To examine the recall age at menarche among the adolescent girls of Scheduled caste (SC) and neighboring Meitei girls of the Imphal west district, Manipur.

Setting: The study was conducted in four different villages, i.e. Sekmai, Potshangbam, Tengdongyang, and Khonghampat in Imphal district, Manipur.

Design: The present study was a cross-sectional study.

Subject and Method: A total of 417 (Scheduled caste) and 409 (Meitei) girls ranging in age 10-18 years were randomly selected from the above-mentioned villages of Manipur. Pre- tested interview schedule forms were used to collect the data of the present study.

Result: Among the participants, the maximum number of SC girls (33.76%) and Meitei girls (34.10%) reported to occur menarche at age 14 years and 13 years, respectively.

Keywords: *menarche, recall age adolescents, comparison.*

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Result: Among the participants, the maximum number of SC girls (33.76%) and Meitei girls (34.10%) reported to occur menarche at age 14 years and 13 years, respectively.

The declined earliest mean age at menarche was among the Meitei girls (13.30±0.05 years), with a marginal difference of 0.54 years from the SC girls. Among the six different comparing groups, the Kabui girls showed the highest mean age of 15.40±0.20 years of all, while the remaining three groups of Mao, Aimol, and Kom had an approximate mean age at menarche of 14. 32 years. The decline means menarcheal age would be due to better environmental conditions.

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I. Introduction

Menarche signifies the onset of reproductive capacity and sexual maturity. It is influenced by genetic, nutrition, environment, and socio-economic conditions (Jones et al., 1973[1]. Ersoy et al., (2005)[2] reported several other factors such as genetic, environmental conditions, family size, body mass index, socio-economic status which influenced menarcheal age. The secular trend shows that the age at menarche is declining in many developing countries (Evans and Helene, 2016)[3],and better sanitation and improved health care system are among other factors (Karapanou and Papadinitriou, 2010)[4], that thrives earlier sexual development. Such a trend of declining menarcheal age across the world is linked to increase prevalence of body mass index, insulin resistance, and unhealthy lipid profile, higher risk of cardiovascular disease such as hypertension, heart stroke and diabetes in women (Remsberg et al., 2005[5] and Feng et al., 2008)[6].

Puberty is a biological characteristic for all adolescent boys and girls. It is a complex process by which children develop secondary sexual characteristics and reproductive competence (Kankana, 2016) [7]. Various workers conducted their research works on the aspects of menarcheal age of the different populations. Rumi and Pathak (2001) [8] found the mean menarcheal age of Brahmin girls (12.96 years) and 12.81 years for Kshatriya girls of Meghalaya, Shillong. In Manipur, among the different population groups, various researchers have reported menarcheal mean ages, i.e.14.11 years for Kom (Singh, 2002) [9], 14.59 years for Mao (Maheo, 2004) [10], 15.40 years for Kabui (Singh, 2006)[11], and 14.26 years for Aimol (Devi, 2013)[12]. The present study aims at studying the recall menarcheal age among the Scheduled caste (SC) and Meitei adolescent girls of Manipur and also to make comparisons with other available data of the earlier studies.

The Scheduled caste people of Manipur are also known as Loi community. They inhabited at various valley regions of Manipur, such as Sekmai, Phayeng, Leimaram, Khurkhul, Koutruk, and Andro. The Loi populations consisted of those who were vanquished by the Meitei king. This group of people paid tributes to the Meitei rulers (Hudson, 1908) [13]. They are considered being the descendants of the Chakpas, who were one of the earliest settlers in Manipur. At one time, they were independent, but later subdued by the king and imposed to pay tributes to the king. On the other side, Meiteis are the general majority population of Manipur. They settled in the central plain areas of four districts in Manipur.

II. Material and Methods

The present study is a community-based cross-sectional study. Data were collected from scheduled caste adolescent girls of Sekmai village and Meitei girls of three different neighbouring villages of Potshangbam, Tengdongyang, and Khonghampat in Imphal West district, Manipur. A total of 417 (Scheduled caste) and 409 (Meitei) girls ranging in age 10-18 years were randomly chosen from the above-mentioned

Author α σ: Assistant and Associate Professor, Deptt. of Anthropology, D.M. College of Science, Dhanamanjuri University, Imphal-975001, Manipur. e-mail: sorojinihijam@yahoo.in

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places of Manipur. Pre-tested interview schedule forms were used to collect data of the present study.

a) Statistical methods

Statistical constants such as mean, standard deviations (SD) and standard error of mean (SE) and ANOVA (one way analysis of variance) were computed using Excel.

III. Result

The sample size of the present study indicates that the highest percentage of scheduled caste (SC) and Meitei girls were found in 14 years (32.13%) and 13 years (32.52%), respectively. The next highest number of girls is found to occur at age 13 years (21.83%) for SC girls and 14 years (109%) for Meitei girls (Table 1).

Table 1: Age group- wise distribution of sample

Age (years)	Scheduled caste girls (n=417)		Meitei girls (n=409)	
	f	p. c	f	p. c
10	12	2.87	13	3.17
11	15	3.59	16	3.91
12	50	11.99	85	20.78
13	91	21.83	133	32.52
14	134	32.13	109	26.65
15	88	21.11	45	11.00
16	21	5.04	08	1.96
17	06	1.43	-	-
18	-	-	-	-
Total	417	99.99	409	99.99

Table 1

Age-wise frequency and percentage distribution of girls reporting menarche are presented in table 2. The table shows that none of the girls belong to both communities experienced menarche at age 10years. However, a few (1.76%) of SC girls and 2.56 % (Meitei girls) attained menarche status at age 11 years. Of all the girls investigated in the present study, the percentages of girls who have reported the occurrence of menarche at age 14 years were 33.76% for SC girls and 34.10% for Meitei girls. Menarche at the late age of 17 years was among a few SC girls with 1.51% only. The mean menarcheal age of the Scheduled caste and Meitei girls were 13.84±0.05 years and 13.30±0.05years, respectively, which are closed to each other (Fig.1).

Table 2: Frequency distribution of SC and Meitei girls according to menarcheal age

	Scheduled caste girls(n=397)		Meitei girls (n=409)	
Age (years)	f	p.c	f	p.c
10	-	-	-	-
11	7	1.76	10	2.56
12	50	12.59	85	21.79
13	91	22.92	133	34.11
14	134	33.76	109	27.95
15	88	22.17	45	11.45
16	21	5.29	08	2.05
17	06	1.51	-	-
18	-	-	-	-
Total	397		390	
	Mean (M)= 13.84, SE= 0.05, SD=1.15		Mean (M)= 13.30, SE= 0.05, SD=1.07	

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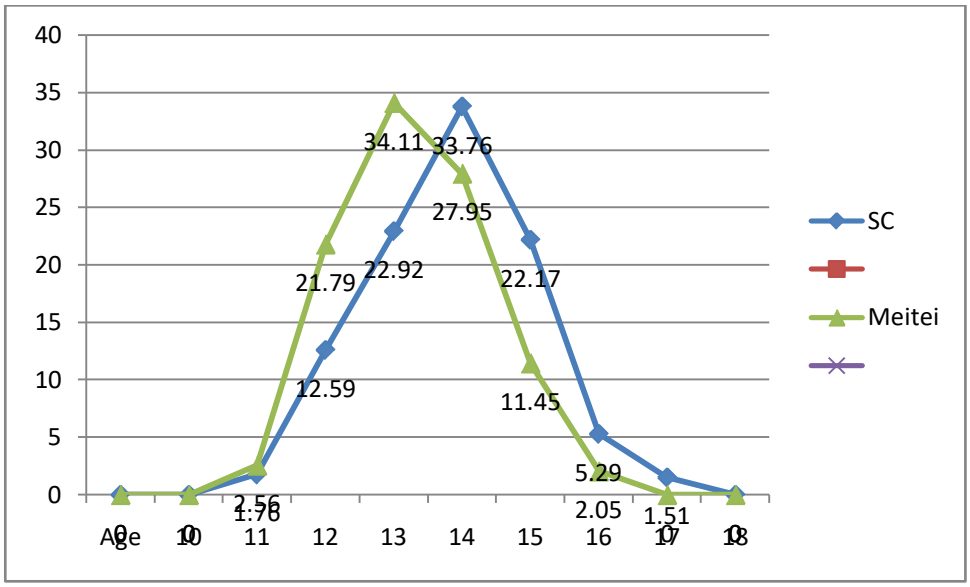


Fig.1: Graph showing percentages of SC and Meitei girls according to menarcheal age.

Comparative study of mean menarcheal age indicates that none of the girls reported occurrence of menarche except a few Kom girls (2.74%) who had menarche at age 10 years. Among this group, the highest number of girls reported to had menarcheal status at age 13 years (27.78%) with a mean of 14.11± 0.11 years. Mao and Kabui girls experienced this event of sexual maturity at 12 years, and the maximum of the number of them reported to occur at 15 years with having menarcheal mean values with 14.59±0.75 years for Mao and 15.40±0.20 years for Kabui. In a similar trend, menarche occurred among the Aimol girls when they attained 12 years, however, maximum of them reported at 14 years (35.69%) with having a mean value of 14.26±0.05 years, which is much closed to the mean values of Kom(14.11± 0.11 years) and Mao girls (14.59±0.75years). The earliest recall menarcheal age among the present study, two populations was 11 years. The ages 13 and 14 years were the most frequently reported stages of life in which the majority of them experienced menarche with the highest frequency of SC girls (33.76%) at 14 years and for Meitei girls (34.10%) at 13 years. The Meitei girls represented to have earliest mean age at menarche with 13.30±0.05 years) and closely followed by the SC girls with a marginal difference of 0.54 years who share a similar ecological setting with those of the present study Meitei girls.

Therefore, the lowest decline mean age at menarche was for the Meitei girls (13.30±0.05 years), the highest was among the Kabui girls (15.40±0.20 years), while the remaining other populations of Kom (14.11± 0.11 years), Mao (14.59±0.75) and Aimol (14.26±0.05 years) shared more or less similar mean age approximate of 14.32 years. However, no statistically significant difference has been indicated in the comparisons of the menarcheal age distribution patterns by ANOVA test (F ratio=1.32, P>0.05) Table 3 & Fig.2).

Table 3: Comparative Study on Menarcheal Age of Various Populations

Popn.	f/p.c	Age groups									Mean(yrs)	F - ratio	Source
		10	11	12	13	14	15	16	17	18			
Kom (n=162)	f	04	-	11	45	33	44	20	03	02	14.11± 0.11		Singh (2002)
	p.c	2.47	-	6.79	27.78	20.37	27.16	12.35	1.85	1.23			
Mao (n=490)	f	-	-	04	25	100	193	133	29	06	14.59±0.75		Maheo (2004)
	p.c	-	-	0.82	5.10	20.41	39.39	27.14	5.92	1.22			
Kabui (n=129)	f	-	-	01	10	26	38	33	15	06	15.40±0.20		Singh (2006)
	p.c	-	-	0.78	7.75	20.60	29.46	25.58	11.63	4.65			
Aimol (n=325)	f	-	-	07	69	116	104	26	02	01	14.26±0.05		Devi (2013)
	p.c	-	-	2.15	21.23	35.69	32.0	8.0	0.62	0.31			
Meitei (n=390)	f	-	10	85	133	109	45	08	-	-	13.30±0.05	1.32	Present study
	p.c	-	2.56	21.79	34.10	27.95	11. 54	2.05	-	-			
SC girls (n=397)	f	-	07	50	91	134	88	21	06	-	13.84±0.05		-do-
	p.c	-	1.76	12.59	22.92	33.76	33.76	5.29	1.51	-			

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df=6,62=2.27

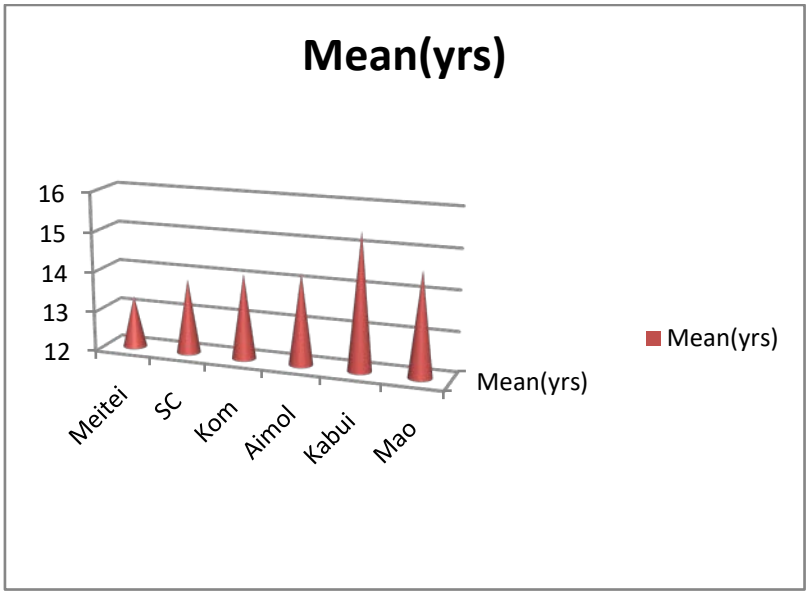


Fig. 2: Graph showing menarcheal mean values

IV. Discussion

In general, menarche occurred at age 11 years, with a few exceptions among the adolescent girls and it continued up to 17 years. The ages of 13 and 15 years became the most common recall menarcheal for the majority of all girls. Among the participants of the comparing groups, Meitei girls represent the earliest mean age at menarche (13.30±0.05 years) and next followed by the SC girls (13.84±0.05 years) who occupy the same ecological habitat of Imphal district of Manipur. The Kabui girls revealed the highest of all in mean age (15.40±0.20 years), while the remaining other populations of Kom, Mao, and Aimol showed an approximate of 14.32 years.

V. Conclusion

From the overall observation, the following conclusion may be drawn.

The present Meitei and Scheduled caste girls settle in the central valley regions, particularly in the Imphal west district of Manipur. The reason for declining menarcheal age, among these two groups, is due to the fact that they enjoy better environmental conditions such as health care, education, access to food, communication, etc. since Imphal is the capital of Manipur. On the other, the remaining groups who experienced later menarche lived in the interior hilly districts such as Churachandpur, Senapati, Chandel, and Tamenglong districts of Manipur which are located at 30-40 km distances from Imphal. The facilities provided under various schemes of the Govt. in the distant hilly places of Manipur are comparatively inadequate as compared to the Imphal districts of Manipur. Among the various factors that influence the onset of menarche, environmental factors would play more roles than genetic. As such, two populations who have social distance from each other, but settled in close habitats and enjoyed similar facilities revealed more or less same results in mean ages.

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