

Age at Sexual Maturity Among the Eight Endogamous Populations of North-Eastern India

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ABSTRACT The age at sexual maturity of 245 girls belonging to eight endogamous populations namely, Adi, Apatani, Nishi, Naga, Ahom, Sonowal-Kachari, Tea garden Tribal and Assamese has been studied employing the status quo method in the North-Eastern India. The majority of the girls menstruated at the age of 12, 13 or 14 years irrespective of the caste/tribal affiliation. The mean menarcheal age varies between 12.22 ± 0.99 to 13.80 ± 0.98 years among the eight populations under study. The findings of the present study were also compared with the previously conducted studies in North-Eastern part of India.

INTRODUCTION

In human physiological genetics, the stream of human body passes through various stages of development and each stage is delineated by its specific functions both at biological and socio-cultural levels. Human growth and development is the product of interaction of intrinsic (biological) and extrinsic (environmental) factors (Hiernaux, 1971). The bioevent of menarche, defined as the occurrence of the first menstrual cycle, to a large extent is determined by genetic constitution of an individual, however, the non-genetic factor also influence the onset. The nongenetic factors may include the education level, occupation of the head of family, food habits and related taboos, family size, living conditions, birth rank of the subject, climatic conditions of the geographic area and possibly the moral and psychic environment in which an individual lives which may influence (retard or accelerate) the onset of first menstruation (Tanner, 1962; Valsik et al., 1963; Hiernaux, 1971). Recently, the strenuous physical activities (Balgir, 1985), disease affliction (Balgir, 1993) and blood group

phenotypes (Balgir, 1993) are found to influence the age at menarche.

The specific age at onset of menarche (sexual maturity) is a characteristic of an ethnic group and also determines the reproductive potential of a girl. This provides a useful tool for differentiating the racial groups of diverse origins. A great deal of variation exists among different societies regarding their attitude towards the onset of menarche and the subsequent cycles. Most of the caste and tribal people in North-Eastern India perform some special rituals at the onset of puberty of a girl. The occasion is generally marked with a special ceremony of wearing newly stitched clothes after performing the religious rituals and a feast to the close relatives and friends (Balgir, 1993). On account of this practice, this physiological bioevent is generally well remembered by every menstruating girl.

This paper gives the glimpses of the sexual maturity of the girls belonging to eight endogamous populations of North-Eastern region of India.

PHYSIOGNOMY, ECOLOGY AND PEOPLE

The North-Eastern region of India which comprises of seven sister states namely, Arunachal Pradesh, Assam, Nagaland,

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Manipur, Mizoram, Tripura and Meghalaya is ecologically ever-green part of the country with thick vegetal cover having hot and humid climate, heavy rainfall, high and low hills, plateaus and plains, valleys and rivers, beautiful ever dancing and singing rural folks, etc. The present study deals with the people of Arunachal Pradesh, Assam and Nagaland (Fig. 1).

Arunachal Pradesh situated on the North-Eastern border of India is a land of lush green forests, deep river valleys and beautiful plateaus. The land is mostly mountainous with Himalayan ranges along the Northern borders criss-crossed by mountain ranges running North to South direction. These divide the state into five river valleys. High mountains and dense forests have prevented inter-communication between tribes living in different river valleys. Isolation imposed by geography has led over 25 major tribes with several dialects to live and flourish with their distinct identities (Balgir, 1991). The climate varies from hot to humid in the foothills with heavy rainfall. It becomes progressively cold as one moves in the North towards higher altitudes. Nature has endowed

the people with a deep sense of beauty which finds delightful expression in their songs, dances and crafts. Festivals are an essential part of the socio-cultural life of the people.

In general, the people of Arunachal Pradesh belong to Mongoloid ethnic stock. Both fraternal polyandry and polygyny in general are practised by the Adis irrespective of the age of partner (Balgir and Dutta, 1990a). The practices of bride-price and polygyny are common with apathy to the age of partners among the Apatanis and Nishis (Balgir, 1991).

Of the most numerous and prominent tribal people in the mountainous region of North-Eastern India are the Nagas of Nagaland. The Nagas linguistically belong to the family of Tibeto-Chinese and the Tibeto-Burman sub-family. They speak many dialects and are divided into many clans. They also practise shifting cultivation. Previously, they believe in various spirits and sky Gods, but recently, they have embraced Christianity.

In the plains of Assam, the Ahoms belong to the Tai-Shan group of Mongoloid racial stock who entered Assam in 1228 AD from Thailand

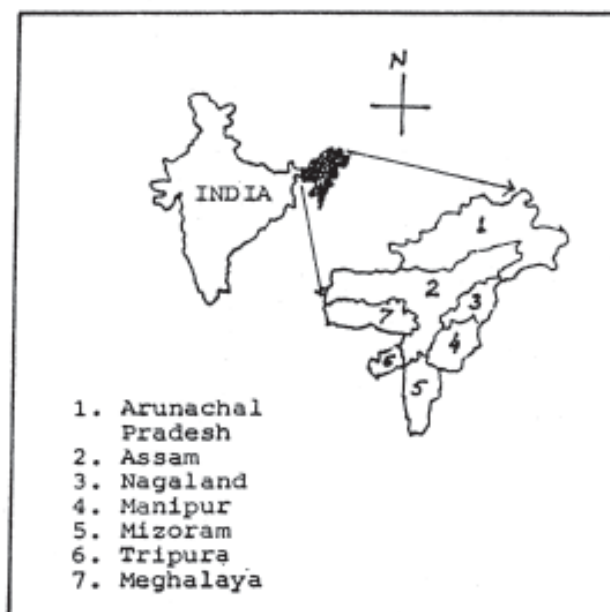


Fig. 1. Map of India showing seven sister States of North-Eastern Region

through Patkai range. They have been settled in the plains of Upper Assam. Formerly speakers of a Tai-language, they are now culturally and linguistically assimilated to the Assamese population. They are medium in height and possess broad head with mesorhine nose and light brown skin colour. They are agriculturists and form a distinctive endogamous group of people.

The Kacharis belong to Mongoloid race of Sino-Tibetan stock who have many subgroups such as Sonowal, Bodo, Mech, etc. (Balgir, 1992a). These Bodo group of tribes belong to the Tibeto-Burman language group. They are medium statured and have yellowish-brown to dark-brown skin colour, typical flat nose and oblique eye slits (Balgir, 1992b). Their main occupation is wet-rice cultivation. They are patrilineal, patrilineal and endogamous people and practise monogamy.

Assamese constitute admixture of population groups belonging to Caucasoid as well as Mongoloid racial origins inhabiting Assam.

The tea garden tribals are the labour class who migrated during later half of the 19th century to Assam in search of employment in the tea industry (Balgir and Dutta, 1990b). They have now permanently settled people of Assam.

METHODOLOGY

For the present study along with the blood collection for the project on hemoglobinopathy, a sample of 245 girls between the age of 9 to 20 years was also randomly selected from the general population for the age at sexual maturity in the North-Eastern part of India. The sample comprised of 76 girls from Itanagar (Arunachal Pradesh), 15 girls from Kohima (Nagaland) and 154 girls from Dibrugarh (Assam) representing the rural folk population. All the girls were asked to tell the age in years at which they had first menstruated employing the status quo method. All the girls responded excellently and provided the accurate age of menarche. A special ceremony named "Shanti" is being observed by all the caste/tribal people in North-Eastern India. All these population

groups are endogamous people. The data so obtained were analysed and presented here.

RESULTS AND DISCUSSION

The frequency distribution of menarcheal age of the girls under study is presented in table I. In this series, the youngest girl to menstruate was aged 10 and the eldest was 18 years. There were only a few girls who had the menarcheal onset at the age of 10 years as well as above 16 years of age. The majority of the girls menstruated at the age of 12, 13 or 14 years irrespective of the caste/tribal affiliation in the North Eastern region of India (Table 1). All these girls except tea garden tribals belonged to the Mongoloid racial stock. The physiognomy, ecology, temperature and humidity level, climatic conditions and bio-environment and food habits and related taboos more or less remain similar for the entire North-Eastern region of India. This is probably reflected in the frequency distribution pattern for menarcheal age by all these populations under study. Thus, the difference in menarcheal age, if any is due to the genetic background of the population rather than due to the above listed variables or factors.

In the present study, the mean menarcheal age has been found lowest (12.22 ± 0.99) among the Sonowal-Kacharis of Assam and highest (13.80 ± 0.98) among the Nagas of Nagaland. Rest of the populations fall in between these mean values (Table 2).

In Assam, the mean menarcheal age varies between 11.32 to 13.61 years, the lowest being represented by the Kalitas and the highest by the Morans. It is interesting to note from table 2 that the populations belonging to the Mongoloid racial stock do not differ much from the non-Mongoloid (Caucasoid) populations such as Brahmins, Kayasthas, Vaishyas, Kaibartas, tea garden tribals, etc. in the mean menarcheal age in Assam. Three populations, i.e. Muslims, Brahmins and Meities studied from Manipur showed the similar mean values of menarcheal age as in the populations of the state of Assam (Table 2).

Table 2 : Mean age at sexual maturity in some North-East Indian girls

State/Population Group	No.	Menarcheal Age		Source
		Mean $\pm$ S.E.		
<i>Arunachal Pradesh</i>				
Adis	109	14.45 $\pm$ 0.98	Duarah, 1969	
Singphos	95	12.59 $\pm$ 0.15	Kar and Mohanta, 1975	
Apatanis	-	13.40 $\pm$ 0.08	Jaswal and Jaswal, 1981	
Adis	17	13.47 $\pm$ 0.36	Present Study	
Apatanis	13	13.61 $\pm$ 0.66	Present Study	
Nishis	37	13.57 $\pm$ 0.30	Present Study	
<i>Assam</i>				
Muslims	29	13.35 $\pm$ 0.14	Rakshit, 1960	
Brahmins	60	12.46 $\pm$ 0.12	Rakshit, 1960	
Brahmins	26	12.51 $\pm$ 0.11	Das and Das, 1967	
Kayasthas	22	12.45 $\pm$ 0.20	Rakshit, 1960	
Kayasthas	11	12.00	Srivastava and Goswami, 1968	
Kalitas	17	12.12 $\pm$ 0.25	Rakshit, 1960	
Kalitas	172	12.61 $\pm$ 0.14	Das and Das, 1967	
Kalitas	20	11.32	Srivastava and Goswami, 1968	
Vaishyas	35	12.97 $\pm$ 0.12	Das and Das, 1967	
Ahoms	50	11.65	Srivastava & Goswami, 1968	
Ahoms	264	12.96 $\pm$ 0.60	Gogoi, 1972	
Ahoms	66	12.29	Das et al., 1980	
Ahoms	194	12.60 $\pm$ 0.12	Sengupta, 1982	
Ahoms	77	12.25 $\pm$ 0.13	Present Study	
Sonowal-Kacharis	200	12.77 $\pm$ 0.12	Deka, 1976	
Sonowal-Kacharis	32	12.22 $\pm$ 0.18	Present Study	
Morans	67	13.61	Das et al., 1980	
Chutiyas	62	12.54	Das et al., 1980	
Mishings	82	12.58	Das et al., 1980	
Deuris	77	13.03	Das et al., 1980	
Khamiyangs	40	12.80 $\pm$ 0.13	Das, 1985	
Turungs	32	13.06 $\pm$ 0.20	Das, 1985	
Mikirs	52	12.75 $\pm$ 0.18	Khatoniar, 1972	
Kaibartas	30	12.89 $\pm$ 0.12	Das and Das, 1967	
Tea Garden Tribals	16	12.56 $\pm$ 0.18	Present Study	
Assamese	138	12.39 $\pm$ 0.08	Rakshit, 1960	
Assamese	263	12.71 $\pm$ 0.13	Das and Das, 1967	
Assamese	166	11.71 $\pm$ 0.09	Srivastava & Goswami, 1968	
Assamese	29	12.76 $\pm$ 0.32	Present Study	
<i>Manipur</i>				
Muslims	450	12.35 $\pm$ 0.04	Devi, 1985	
Brahmins	65	12.45 $\pm$ 0.08	Devi and Singh, 1982	
Meiteis	161	12.77 $\pm$ 0.04	Devi and Singh, 1982	
<i>Meghalaya</i>				
Christian-Khasis	119	19.00	Nag, 1965	
Non-Christian-Khasis	131	18.00	Nag, 1965	
<i>Nagaland</i>				
Nagas	15	13.80 $\pm$ 0.26	Present Study	

S.E. = Standard Error

Of the tribal populations so far studied from Arunachal Pradesh indicate that the mean menarcheal age varies from 12.59 ± 0.15 to 14.45 ± 0.98 years which is higher in comparison to the other populations of the neighbouring states (Table 2). Similar pattern is represented by the Khasis of Meghalaya and Nagas of Nagaland.

Thus for practical purposes, it seems that the age at sexual maturity of the girls in the entire North-Eastern region of India probably represents the one unit and uniform broad pattern ranging from 11 to 14 years with minor variations. This similar pattern of menarcheal age is due to similar physiognomy, ecology, temperature and humidity, climatic conditions and bio-environment, food habits of the people, diet, socio-cultural, moral and psychic environment and the life-style as a whole in the region. The difference in the menarcheal age of the girls, if any is reflected by the difference in the genetic constitution or genetic affiliation of the people.

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