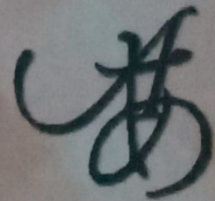




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28. Physical Growth Progression Among the Sarania Kachari Children of Baksa District, Assam

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Abstract

A cross-sectional anthropogenic survey of 334 Sarania Kachari children (170 Boys and 174 girls) of ages ranging from 3 to 6 years was undertaken in order to observe the sex difference in growth. The anthropometric measurements considered have shown a general trend of gradual increase with advancing age.

Introduction :

Growth is a human characteristic and varies with sex and age as well as between different ethnic groups and different acculturation level is a natural phenomenon (Garn 1955, Norgman 1887). It is an exceeding regular process refers to the continuous addition in body dimension of an organism over a period of time. Assessment of growth pattern is the most powerful epidemiological tool for early identification of children who may not look apparently sick but who still have suboptimal health. In India over 40% of the population is constituted by the most vulnerable group i.e. infant and children (Gupta, 1997).

There is no gainsaying the fact that the future growth of the body of an adult person, largely depends upon the growth trends during childhood. In North-East India studies on growth are scarce and the growth studies during early childhood are scanty. In view of these, the present study has been conducted in order to study the growth trend of the Sarania Kachari children of Baksa district, Assam, from 3 to 6 years of age.

Material and Method :

The Sarania Kacharis are off-shoot of the greater Bodo Kachari tribe. They consider themselves to be of higher social status than the other groups of Bodo Kacharis. This attainment of Higher Social status may have been influenced by the process of Sanskritization. They have adopted Hindu religion and the cultural practices associated with it. The term Sarania was recognized by Britishers in 1881 (Hakasam, 2013). The material for the present study comprises a sample of 344 Sarania Kachari Children (170 boys and 174 girls) of ages 3 to 6 years. The study was conducted between November-December, 2018 from the village of Barpathar, Betna, Borigaon, Dolongdia, Goreswar ward no. 2, Malmura and Muharipara of Baksa district, Assam.

The exact date of birth of all the children was difficult to ascertain. However, special care was taken to obtain the actual age of the children under study. The exact date of birth of some of the children

could be collected by examining the horscopes, personal notebook and diaries.

It must be admitted here that the present study is a lone effort of the investigator. All the measurements were taken following the techniques as described by Weiner and Lowrie (1981) for International Biological Programme. The data were arranged in 4 different age groups from 2 to 10 years. The children who had completed 3 years but were less than 4 years of age were included in the age group of 3 years. Similarly, those who had completed 4 years of age but not 5 years were included in the age group of 4 years and so on.

The anthropometric measurements considered for the present study are stature, Head circumference, arm circumference and body weight. Various statistical techniques have been applied to make the data valid. Absolute growth - It is determined by subtracting the mean value of the lower age group from that of the next higher age group.

$$\text{Absolulte Growth} = \bar{x}_2 - \bar{x}_1$$

where, \bar{x}_1 stands for the mean value of the lower age group and \bar{x}_2 stands for the mean value of the next higher age group.

Growth percent per annum

$$\text{It is calculated by using the formula. Growth \% per annum} = \frac{\bar{x}_2 - \bar{x}_1}{\bar{x}_1} \times 100$$

Result and Discussion :

The results of the study examining the growth trend of the Sarania Kachari children from 3 years to 6 years are presented in the form of tables. The mean values, standard deviations, co-efficient of variation and rates of growth of all somatometric characters are presented with a view to showing the nature of growth. The distance curve shows the distance travelled by each parameter.

Growth Pattern of the Sarania Kacharis

Stature : (Table-1) : It is observed that the mean values of stature continuously increases from 3 to 6 years for both boys and girls. The magnitude of increment is ,however, not uniform throughout the ages. The boys are found to be taller than the girls . The highest increment for boys (8.56cm.) and for girls (8.77cm) is found between the ages 5 and 6 years. The next highest increment for the boys (6.86cm.) and for the girls (7.64cm.) is found between the same age group,i.e. 3 and 4 years. At 3 years boys are taller than the girls but afterwards both the sexes are quite similar in their height attainment. In case of boys, the total increment from 3 to 6 years is 18.50cm. whereas in case of girls, it is 19.31cm. So more growth for stature has taken place in case of girls.

Table 1 : Statistical constants of stature (in cms) Boys

Age(in years)	No. of Boys	Mean ± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3	41	94.98±0.39	2.48±0.27	2.59± 0.28	6.86	7.22
4	40	101.84±0.33	2.09±0.23	2.06±0.23	3.08	3.02
5	40	104.92±0.35	2.22±0.25	2.12±0.24	8.56	8.15
6	49	113.48±0.26	1.81±0.18	3.69±0.37	=18.50	

Age(in years)	No. of girls	Mean± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3 +	43	94.04±0.51	3.34± 0.36	3.54±0.38	7.64	8.12
4 +	42	101.68±0.25	1.64±0.18	1.61±0.17	2.9	2.85
5 +	40	104.58±0.43	2.74±0.31	2.62±0.29	8.77	8.38
6 +	49	113.35±0.49	3.42±0.35	3.02±0.30	=19.31	

Head circumference : (Table 2)

It is observed that the boys show the higher mean values of head circumference than the girls from 3 to 6 years of age. The absolute growth in head circumference from 3 years to 4 years is 1.14cm. for the boys and 0.61cm. for the girls. In case of boys, the **total increment** from 3 to 6 years is 1.44cm., whereas in case of girls, it is 2.69cm. Girls have more increase than the boys. At all ages the boys have higher values of head circumference than the girls (Figure 4). This difference gets reduced between 5 and 6 years.

Table 2 : Statistical constants of Head circumference (in cms) Boys :

Age(in years)	No. of individuals	Mean± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3	41	48.61±0.24	1.53±0.17	3.14±0.35	1.14	2.34
4	40	49.75±0.12	0.75±0.08	1.52±0.17	0.22	0.44
5	40	49.97±0.14	0.87±0.09	1.73±0.19	0.08	0.16
6	49	50.05±0.13	0.90±0.09	1.8±0.18	=1.44	

Girls:

Age(in years)	No. of individuals	Mean± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3	43	47.29±0.18	1.23±0.13	2.60±0.28	0.61	1.29
4	42	47.90±0.54	0.99±0.11	2.08±0.23	1.7	3.55
5	40	49.60±0.16	1.03±0.11	2.07±0.23	0.38	0.77
6	49	49.98±0.14	0.98±0.09	1.96±0.19	=2.69	

Arm circumference : (Table-3) : It is seen that there is a continuous increase in the mean values of arm circumference from 3 to 6 years for both boys and girls. The magnitude of increment is not uniform in all the ages. The boys show higher mean values than that of the girls. The total increment from 3 to 6 years is 0.7cm. and 1.27cm. for the boys and the girls respectively. More increase have occurred among the girls than the boys. Sexual difference is maximum at 3 years (0.68 cms.)

Table 3 : Statistical constants of Arm circumference (in cms)

Boys :

Age(in years)	No. of individuals	Mean± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3	41	14.89±0.15	0.98±0.11	6.16±0.73	0.15	1.01
4	40	15.04±0.12	0.68±0.07	4.51±0.50	0.15	0.99
5	40	15.19±0.11	0.72±0.08	4.74±0.53	0.4	2.63
6	49	15.59±0.11	0.73±0.07	4.70±0.47	=0.7	

Girls :

Age(in years)	No. of individuals	Mean± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3	43	14.21±0.16	1.04±0.11	7.33±0.79	0.78	5.49
4	42	14.99±0.09	0.64±0.07	4.30±0.47	0.02	0.13
5	40	15.01±0.09	0.56±0.06	3.77±0.42	0.47	3.13
6	49	15.48±0.13	0.91±0.09	5.69±0.57	=1.27	

Body weight : (Table -4) : It is observed that there is a continuous increase in the mean values of body weight from 3 to 6 years for both boys and girls. The magnitude of growth from one age group to another is not uniform. The boys are found to be heavier than the girls at all ages. The total increment from 3 to 6 years is 4.75kg. for the boys and 5.20kg. for the girls. Maximum increase is seen at 5 years of age in both the sexes, which is 2.02 cms. among the boys and 2.10 cms. for the girls.

Table 4 : Statistical constants of Body weight (in kgs)

Boys :

Age(in years)	No. of individuals	Mean± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3	41	13.11±0.26	1.64±0.18	12.52±1.38	1.18	9.0
4	40	14.29±0.23	1.47±0.16	10.34±1.15	1.55	10.85
5	40	15.84±0.26	1.66±0.18	10.49±1.17	2.02	12.75
6	49	17.86±0.19	1.32±0.13	7.41±0.75	=4.75	

Girls :

Age(in years)	No. of individuals	Mean± S.E	S.D± S.E	C.V± S.E	Absolute growth	Growth per annum %
3	43	12.54±0.20	1.33±0.14	10.61±1.14	1.62	12.91
4	42	14.16±0.18	1.16±0.13	8.23±0.89	1.48	10.45
5	40	15.64±0.27	1.71±0.19	10.97±1.23	2.10	13.43
6	49	17.74±0.31	2.14±0.22	12.05±1.22	=5.20	

According to Tanner 1962, Sharma 1963, Stuart and Sterenson 1963, Tanner 1964, Tanner et al. 1996a, 1996b, Wolanski 1967 and Kansal 1982, the different body parts grow at different rates and sequence of their reaching adult size also differs from one segment to another. This conclusion can also be drawn from above discussion

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