



Anthropometric Measurements of Punjabi New-Borns

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Abstract

Background: Anthropometric measurements are useful criteria for assessing nutritional status; it is one of the simplest methods of assessment of growth and development especially in infants. These are concerned with the measurements of the variations of physical dimensions and the gross composition of the human body at different age levels and degrees of nutrition.

Method: This study was conducted with the aim of establishing the mean birth weight, length and head circumference for Punjabi new born. A total of 320 normal newborns (160 males and 160 females) of Jat Sikh and Bania population were studied from Bathinda & Barnala districts of Punjab.

Results: Means and standard deviations for the length, weight & head circumference measurements were established. Highly significant difference had been found for birth length ($p < 0.001$) for both Jatsikh and Bania males.

Conclusion: In most of the anthropometric measurements, females recorded better than the males at birth.

Keywords- Anthropometric, New born, length, Weight, Measurements, Values.

Introduction

Growth is a complex process with a wide variability in its normal manifestations. Each child has a unique pattern of growth.¹ Difference between populations in the size and shape of adults are due to difference in their gene pools. Difference in size and shape between children of different population have the same causes, but with added complications caused by variation in the rate of maturation. Thus, two populations may

reach an average identical adult size, but the children of one population may be larger than those of other simply because they have faster tempo of growth.² Birth weight is most sensitive and reliable indicator of health of the community. It is universally acknowledged that size at birth is an important indicator of foetal and neonatal health in context of both an individual and the population.³

The anthropometric parameters at birth are considered to be of great value when assessing intrauterine growth. The present study was undertaken with the aim of establishing norms for birth weight, length and head circumference of Punjabi Jat Sikh and Bania new born.

Results & Observations

Table 1: Measurements of Jat Sikh and Bania Newborns at Birth

Age (At Birth)	N	Male		Female	
		Jat Sikh Mean \pm SD	Bania Mean \pm SD	Jat Sikh Mean \pm SD	Bania Mean \pm SD
Length (cm)	80	46.81 \pm 2.75	44.99 \pm 3.09	46.77 \pm 2.65	45.66 \pm 2.77
Weight (kg)	80	3.13 \pm 0.47	3.10 \pm 0.39	3.18 \pm 0.43	3.14 \pm 0.40
Head Circumference (cm)	80	34.78 \pm 1.23	34.96 \pm 2.52	34.88 \pm 1.47	34.66 \pm 1.40

Tables 1 show that the mean \pm SD values of birth length, weight and head circumference. Trends of length in both endogamous groups indicate that Jat Sikh male and female children have higher mean values in comparison to Bania male and female children at birth. Intra group comparison shows that Jat Sikh males and Bania females are taller than their Jat Sikh female and Baniamale's counterparts. Male's shows highly significant ($p < 0.001$) difference at birth. Mean \pm SD values for weight appears marginally higher for females at births in both endogamous groups.

The mean \pm SD values of head circumference at birth were 34.78 \pm 1.23 cm and 34.88 \pm 1.47 cm in Jat Sikh males & females respectively and 34.96 \pm 2.52 cm and 34.66 \pm 1.40 cm in Bania males & females respectively. Bania males and Jat Sikh females had higher mean values of head circumference than their counterparts.

Discussion

The length of males & female children of Jat Sikh & Bania are on the lower side at birth when compared with the children studied in Ludhiana, Varanasi & Delhi; Chandigarh; Delhi.^{4, 5, 6} The mean birth weight of new born (Jat Sikh) of the present study population is 3.13 Kg same as noted in Changlang.⁷ Comparing the results of present study with other Punjabi newborns, it is found that

Material and Methods

The present study was conducted on Jat Sikh and Bania endogamous groups of Punjab. A total of 320 children (160 each group; 80 males & 80 females) were measured anthropometrically for gross body measurements i.e. length, Weight and head circumferences at birth. Statistical analysis of the data was done using Microsoft EXCEL.

the present study population had higher mean birth weight as compared to new borns in Faridkot⁸ (3.13 kg vs 2.39 Kg) and north east tribes of Arunachal Pradesh like Tangsa of Nampong⁹ (3.13 kg vs 2.80 Kg).

Head circumference of males of both endogamous groups of present study were on the higher side than those of children studied in Ludhiana.⁴ However, results of Jat Sikh and Bania males of the present study were on the lower side at birth than Jat Sikh and Bania males of Punjab.¹⁰ Results of females of the present study are almost same as females of Calcutta & Delhi⁴ and higher from studied in Chandigarh¹¹ and Amritsar.¹²

Conclusions

Growth studies help us to identify population variations, differences between the sexes, intra-population variation, and other health implications. In addition, the study of human growth is essential in understanding not only the health and nutritional status of a population. Jat Sikh females recorded better weight and head circumference than the male's counterparts, whereas, Bania females have better length and weight measurements than their male counterparts.

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