

Cephalic Index of Students of Sialkot Medical College

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Abstract

Objective: The aim of study was to find out cephalic index of the students of Sialkot medical college. It will help in identification.

Method: Only students of Sialkot medical college were selected by non-probability purposive sampling technique. Sample size was 141. Both males and females were selected. Study setting was Sialkot medical college, Sialkot. Duration of study was one month. After taking informed consent measurements were taken i.e., from mastoid to mastoid and from glabella to external occipital protuberance. The measurements were taken in centimeters. Frequency and percentage was calculated by using SPSS 21. Graphs and table were formed.

Results: The results indicate that most of the students were hyperbrachycephalic. Hyperbrachycephalic were predominant with 63 %, 94.5 and 43.8 % for collective, male and female respectively. Mesaticephalic were 11%,0% and 18% in both sexes, males and females respectively. Brachycephalic were 26%, 5.5% and 38.2% for both sexes, males and females respectively.

Conclusion: This study indicates that cephalic index of most of students was hyperbrachycephalic. Males predominantly belong to hyperbrachycephalic group. While in females hyperbrachycephalic group predominated then brachycephalic.

Keywords: anthropometry, mesaticephalic, brachycephalic, hyperbrachycephalic, cephalic index.

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Introduction

Cephalic index has been described in late sixteenth and early seventeenth century in Sweden. Retzius derived a formula by multiplying hundred with span between the most extending focuses along the edges of the head, above and behind the ears. Then dividing the outcome with measurement from the craniometric point to the most extending point at the rear of the head.¹

When this formula is applied to the head dimensions of alive one it is called cephalic index but when such dimensions are taken in dead ones head without soft tissues then it will be named cranial index.²

Measurements of different body parts have long been used to individualize the person.³ Among those head measurements also provide useful data to differentiate on the basis of race. Race is a significant idea and boundary to contemplate people in light of the fact that every one of them are unique. Race is a natural idea identified with actual qualities as opposed to mental characteristics or interaction of people while living in a community.⁴

Cephalic index is not only utilized to differentiate the individuals depending upon the race. It can also be used to differ the males from females. It also provides meaningful information about genetics and environmental effects.⁵ In addition, cephalic index can also be used in finding the quality and success of certain cranial operations.^{1,6} It has also been used to help the diagnosis

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of downs syndrome along with chromosomal defects, age and normal development of fetus.⁷

Based on cephalic file head shapes assembled into four global classifications, that including Dolicocephalic (cephalic index less than 74.9), which is derived from Greek word meaning long and dainty head. Brachycephalic (cephalic index 80 to 84.9), meaning small and wider. Mesatocephalic (cephalic index 75 to 79.9), meaning moderately long and broader, and Hyperbrachycephalic (cephalic index 85 to 89.9), extremely small and wider and ultra-brachycephalic (cephalic index more than 92).^{2,7-10}

Various elements have been proposed to conceivably affecting the head structure. In addition to inborn elements, protein intake, stress, provision of medicine in the hour of need and climatic changes.¹¹ So inhabitants of different geographical areas may show different cephalic index. This study will help to find out the cephalic index of students of Sialkot medical college.

Material and Methods

The study setting was Sialkot medical college. Sample size was 141. Sampling technique was non probability purposive sampling. Both males and females were selected. 54 were males and remaining were females. It was a cross sectional study. Study duration was one month. After taking informed consent measurements were taken by caliper. From glabella to the external occipital extension and from parietal extension of one side to the other were measured. Measurements were taken in centimeters. Head breadth was multiplied to 100 and divided to head length. Frequency and percentage was calculated by using SPSS 21. Graphs and table were formed.

Results

There were 141 students whose measurements were taken and cephalic index was calculated. Their results are being shown in table no 1. It indicates that mean cephalic index in males was 93.91 and in females it was 102. Frequency of different values was plotted in the graph as shown in figure no 1, for males and figure no 2 for females.

Table 1: Descriptive data. Descriptive Statistics

	N	Range	Minimum	Maximum	Mean
Male_CI	54	21.00	81.00	102.00	93.9130
Female_CI	87	38.26	76.74	115.00	90.3861

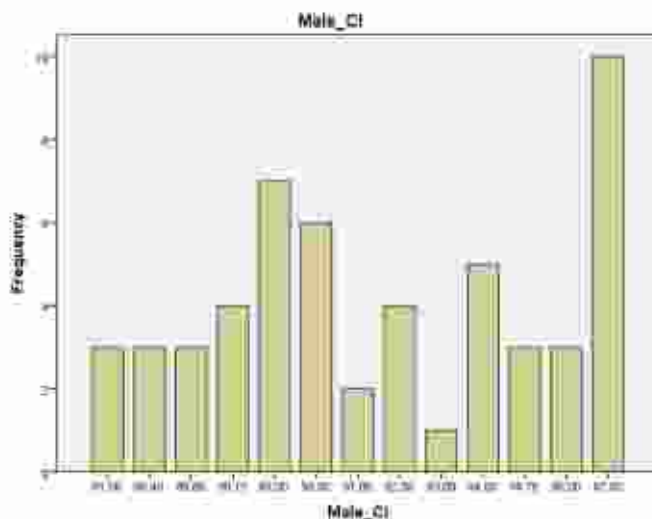


Figure No 1: Frequency of different cephalic indices for males.

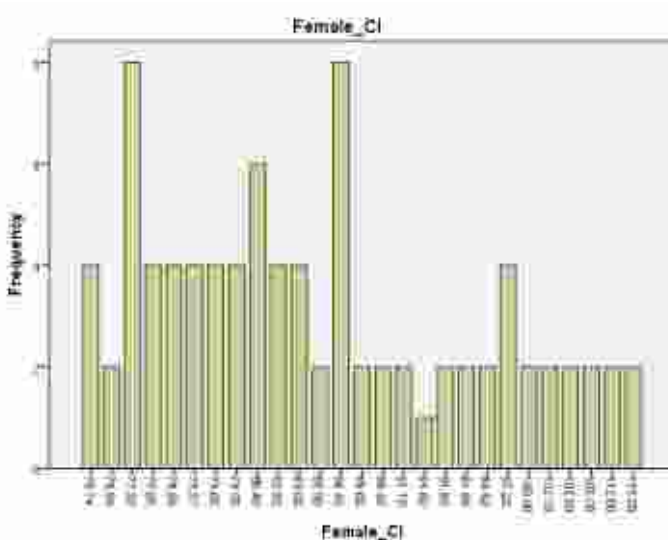


Figure No 2: Frequency of different cephalic indices for females.

Table 2: Percentage of different racial groups depending upon C.I.

		Dolichocephalic	Brachycephalic	Mesatocephalic	Hyperbrachycephalic
Male	Number	---	3	---	51
	%age	---	5.5	----	94.5
Female	Number	----	34	16	39
	%age	----	38.2	18	43.8
Both	Number	----	37	16	90
	% age	-----	26	11	63

Discussion:

The results indicate that most of the students were hyper-

brachycephalic. Hyperbrachycephalic were predominant with 63 %, 94.5 and 43.8 % for collective, male and female respectively. Mesaticephalic were 11%,0% and 18% in both sexes, males and females respectively. Brachycephalic were 26%,5.5% and 38.2% for both sexes, males and females respectively.

In a study carried out in Japan 68 were ultra-brachycephalic and 305 hyperbrachycephalic.⁸ In a study in India shows that the hyperbrachycephalic constituted only 6% and 33% of brachycephalic. In boys, the dominating group was brachycephalic with dolichocephalic but in girls dominating group was brachycephalic but hyperbrachycephalic were 29%.¹² A study carried out in Nigeria, it was deducted that dolichocephalic were the most of all. The least was hyperbrachycephalic with 1%. Brachycephalic were 10.23%.⁹ In India in another study, in boys the predominant group was mesaticephalic and in girls brachycephalic was leading group.¹³ In Odhiya Pradesh, a study carried out indicated that mesocephalic were dominating in boys and least were hyperbrachycephalic with only 1 percent. In girls brachycephalic were more than boys and hyperbrachycephalic were same¹⁴. There were no brachycephalic in boys but twelve percent in girls. Dolichocephalic and mesaticephalic were dominating, in another study carried out in India.¹⁵ In Japan, ultrabrachycephalic were 78, 378 hyperbrachycephalic and maximum were brachycephalic.¹¹ A study carried out on Punjabi students indicated that the predominant group was hyperbrachycephalic¹⁶. In another research done in Malaysia, it was found that Indians were hyperbrachycephalic and brachycephalic. The Chinese were hyperbrachycephalic and Malaysian were mesocephalic.¹⁷

A study carried out in Pakistan indicated that the predominant group was hyperbrachycephalic along with brachycephalic in both sexes. Dolichocephalic were found to be zero percent. Same results were found in Iran (Qazvin).¹⁸ In Iran, brachycephalic and hyperbrachycephalic were found main groups of cephalic index.¹⁹ The results of this study were contradicting another study performed in Pakistan on skulls which indicated that dolichocephalic were predominant.²⁰ The cranial measurements help to find out skull anatomical anomalies. These measurements can be taken with cheap and easy to use measuring instruments. To clear the measuring error, it can be taken multiple times.²¹ Due to crossbreeding of races, results of this study show mixture of various types of cranial indexes which is also seen in many other studies.²²⁻²⁵

Conclusion

This study indicates that cephalic index of most of students was hyperbrachycephalic. Males predominantly belong to hyperbrachycephalic group. While in females hyperbrachycephalic group predominated then brachycephalic.

Conflict of Interest:

None

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Authors Contribution

MA: Conceptualization of Project

GM: Data Collection

NF: Literature Search

AAK: Statistical Analysis

YA: Drafting, Revision

AA, MA: Writing of Manuscript

Work Motivation and Job Satisfaction among Young Doctors of Public Health Sector in Punjab, Pakistan

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Abstract

Objective: To assess determinants of job satisfaction and work motivation of doctors working in the largest tertiary care hospital of Pakistan.

Method: A cross-sectional study was conducted using mixed methods. The Warr, Cook, and Wall's Job Satisfaction Scale (JSS) instrument was used for data collection. The quantitative sample size comprised 85 doctors, while the in-depth interviews (IDIs) were carried with 15 doctors for the qualitative portion. Chi-square Test (χ^2) was used with the p-value set at ≤ 0.05 for significant findings. Thematic content analysis was done to analyse the qualitative data.

Results: Overall, the results showed a higher level of job satisfaction and work motivation in senior doctors. It was also associated with 'place of residence', 'financial incentives', 'department category' including 'level of gratitude by patients', etc. In qualitative analysis, the major themes that were highlighted were the 'role of government policies', 'working conditions', 'cumbersome administrative requirements', 'inadequacies in graduate training', 'monetary gains', 'role of media', 'Bribe (Safaris)', and lastly 'sense of security'.

Conclusion: The study demonstrates an overall low level of job satisfaction and work motivation in young doctors in the PHS. The introduction of unfavourable government policies, the lack of a solid healthcare skeleton, disparaging working conditions and the negative portrayal of the young doctors by the media seem to be the most critical underlying factors.

Keywords: Work Motivation, Job Satisfaction, Public Health Sector, Pakistan.

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Introduction

The health workforce is unequivocally one of the most fundamental components of the health system, which has a strong bearing on the overall performance of the health system.¹ According to World Health Organization (WHO), there are approximately 59.2 million health providers working around the globe, and a shortage of almost 4.3 million physicians, midwives, nurses, and support workers² that would ultimately widen to

12.9 million roughly by 2035.³ Pakistan is a lower-middle country with a population of 216.5 million, as reported in 2019.⁴ The country has been categorized by WHO as one of the 57 countries² facing an acute shortage of physicians needed to deliver essential health interventions for achieving Universal Health Coverage (UHC). Pakistan has one of the lowest densities of health workers in the region and globally, with an essential /skilled health professional (physicians including specialists, nurses, lady health visitors (LHVs) and midwives) density of 1.4 per 1,000 population,⁵ which is far below the minimum threshold of 4.45 per 1000 population necessary to achieve UHC.⁶

Work motivation and job satisfaction have been identified as one of the key factors of health worker retention and turnover in low- and middle-income countries (LMICs).^{7,8,9} Work motivation and job satisfaction are

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