ABSTRACT

Poor nutritional status in children can lead to underweight, and obesity as well as have a negative impact on health. The nutritional status of a child can be measured using the Body Mass Index (BMI). BMI can be calculated using a formula that involves height and weight data. Height can be estimated based on long bones. The study aims to calculate height based on foot length in children aged 7-12 with case studies of age, gender, and tribal origin.

Tests were conducted on a total of 226 samples from boys and girls. A statistical regression test is performed to obtain a regression equation. Tested linear regression and polynomial regression of order 2. Correlation tests between foot length and height in the age group of 7-12 years were conducted to see the magnitude of the correlation. Test results showed a high correlation in the 7-12-year-old range of 0.92 for boys and 0.89 for girls It was found that the age range cand gender had significant results in the correlation of foot length to height. Polynomial regression equation of order 2 can be used to determine height growth in children. In BMI testing using Z scores, normal nutritional status was achieved at an average accuracy percentage of 63%.

Keyword: *BMI, correlation, foot length, height, weight, regression*