

Name: Md Mahinur Alam

Phone: +8801535133854

Email: mahinuralam213@gmail.com

Introduction: This study sought to investigate how childhood anthropometric measurements, including body mass index (BMI) and skinfold thickness, relate to similar measurements in adulthood and their role in predicting adult cardiovascular risk factors.

Methodology: various statistical tests were employed to analyze the data effectively. The χ^2 test (chi-squared test) was used to determine associations between categorical variables. To assess the normality of continuous variables, we utilized the Kolmogorov-Smirnov test. For normally distributed continuous variables, we calculated means and standard deviations (SD), while for non-normally distributed ones, the median and interquartile range were computed. When comparing mean values of normally distributed variables, Student t-tests and analysis of variance (ANOVA) were applied. For non-normally distributed variables, the Mann-Whitney test, a non-parametric approach, was used. To understand the strength and direction of relationships between anthropometric measurements in childhood and adulthood, Spearman correlation coefficients were calculated.

To gain insights into how childhood BMI relates to adult obesity, adult obesity prevalence was calculated within quintiles of childhood BMI. Subsequently, logistic regression analysis was performed to examine the associations between childhood BMI and the sum of skinfold thicknesses with adult cardiovascular risk factors. These models were executed both without and with adjustments for changes in BMI from childhood to adulthood. Individual logistic regression models were crafted for each cardiovascular risk factor. To ensure the robustness of our findings, all logistic regression models were adjusted for various covariates, including sex, physical activity level, alcohol consumption, smoking, and family history of obesity. While interaction terms were tested to assess potential gender differences, they did not yield statistically significant results, prompting the presentation of results for both genders. All statistical analyses were conducted using the SPSS (Statistical Package for the Social Sciences) software version 20.0 for Windows, with a significance threshold set at $p < 0.05$, ensuring that the results were unlikely to have occurred by chance.

Limitations: A significant loss of participants during the 35-year follow-up period could introduce selection bias, potentially not fully representing the initial cohort. High emigration rates from Lithuania over the years could affect the generalizability of findings, given potential differences in lifestyles and risk profiles of emigrants compared to those who remained in Lithuania. Additionally, the study's inability to adjust for changes in lifestyle factors over time due to a lack of baseline survey data could impact the results, as lifestyle factors such as diet, physical activity, and smoking can significantly influence cardiovascular risk. While the study did not identify baseline measurement differences between participants and non-participants, specific details about the reasons for participant loss were not provided, affecting the interpretation of results. Furthermore, the study's 35-year follow-up period may not capture shorter-term fluctuations in BMI and cardiovascular risk factors, which could be relevant in understanding these relationships.

Conclusion: The likelihood of developing metabolic syndrome, hyperglycemia, diabetes, and elevated high-sensitivity CRP appears to be influenced by childhood BMI and skinfold thickness. Conversely, the risk of hypertension, elevated triglyceride levels, and reduced HDL cholesterol is more strongly linked to increases in BMI from childhood to adulthood.