

Study on the Relationship between Obesity Indicators and Mineral Status in Qatari Adults

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Abstract : Background: The association between obesity and micronutrient deficiencies is well documented. Among minerals that have been widely studied: zinc, iron and magnesium. Objectives: This study aims to determine the association between obesity indices and mineral status among Qatari adults. Methods: Secondary data was obtained from Qatar Biobank. 414 healthy Qatari aged 20-50 years old were randomly selected from the database. Anthropometric measurements (WC, Weight, and height), body fat, and mineral status (Fe, Mg, Ca, K, Na) were obtained for all selected participants. Differences in anthropometric measurements and mineral status were analyzed by t-test or ANOVA. Spearman correlation coefficients were determined to assess the association between minerals and anthropometric variables. Statistical significance for the hypothesis tests was set at $p < 0.05$. All statistical analysis was performed using SPSS software version 23.0. Results: Iron, calcium, and sodium levels decreased with an increase in body mass index. Moreover, only iron showed a significant correlation with waist circumference, and waist to height ratio increased. Additionally, calcium, iron, magnesium, and sodium had a statistically significant negative correlation with total body fat percentage and trunk fat percentage. There were statistically significant negative correlations of anthropometrics with minerals. Conclusion: Body fat and trunk fat percentage had a significant inverse relationship with iron, calcium, sodium, and magnesium, while there was no correlation between body fat or trunk fat percentage with potassium.

Keywords : Qatar biobank, body fat distribution, mineral status, Qatari adults

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