

Cluster Analysis of Food Consumption Patterns of Palestinian School Children: Macro and Micro Nutrient Analysis

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Background: Promoting a healthy diet and lifestyle to reduce the national burden of nutrition related problems among Palestinians requires an understanding of food consumption trends and patterns. Few studies have examined the food consumption patterns in relation to the macro and micro nutrient intakes and nutrition risk factors.

Objectives: The objective of this study is to analyze and describe the food consumption patterns in the general Palestinian population and their associations with the socioeconomics and risk factors.

Method: A national school survey has been conducted in 2013 to collect information on food consumption, demographic, socioeconomic, lifestyle and risk factors among Palestinian school children aged 11-15 years. Respondents from West bank schools were selected from the Ministry of Education school system. A representative random sample of 3470 students was collected. The food intake 24h Recall and the HBSC questionnaires were used to collect the required data. The food intake was entered and analysed using the USDA, Nutribase, and ANAHRI databases. Food consumption patterns were identified using the K-means clustering method, the Multinomial logit (MNL) model cluster and the factor analysis.

Findings: Respondents were classified into three clusters according to the food frequency results: low-consumers, moderate-consumers and high-consumers. These clusters were compared according to participant's demographic variables. The clusters indicated that the high consumers' cluster had more females, physically active, healthy food consumption and non-obese students. The low-frequency consumers' cluster had more male, unhealthy food consumers, non active and obese students. The macro and micro nutrient consumption were segmented into two clusters: The traditional pattern (greater intake of meat, poultry, vegetables and lesser intake of fruits and fat), and the non-traditional pattern (greater intakes of sweet, high sugar beverages, white bread, rice and lesser intakes of vegetables, fruits, cereals and grains). The traditional cluster was associated with healthy, non-obese and physically active students, and the non traditional cluster was associated with unhealthy and obese students, but both were associated with gender, age and family economic status.

Conclusion: Our study shows that consumers can be classified into two major segments based on food groups consumption. The findings indicate the importance of considering the food groups intake variations among Palestinian school children. As the segments relate to children health, nutrition diet programs should consider the high scores of non-traditional food consumption among schools children.

Biography:

Dr. Radwan Qasrawi is Director of Al-Quds Business Center for Innovation, Technology and Entrepreneurship (B-CITE). He is Researcher and lecturer at the department of computer science and information technology, Faculty of Science and Technology, Al-Quds University, Abu Dees, Palestine. His research combines computer engineer, public health, and medicine to study and develop ICT solutions at the national and international levels. One of his research areas is the development of predictive and preventive models of cancer diseases diagnosis and treatment. Another area is the intelligent systems designing and implementation for providing a real solution to health problems, such as occupational hazards and exposures, nutrition and food insecurity.