




Abstract

Development of a Diet Quality Score and Adherence to the Swiss Dietary Recommendations for Vegans[†]

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Abstract: Background: Vegan diets have recently gained popularity in Switzerland and abroad. A method to evaluate the diet quality of the vegan population for research and clinical practice is currently not available. Therefore, the aim of the present study was to develop a diet quality score for vegans (DQS-V) based on the Swiss dietary recommendations for vegans. Methods: The dataset included 52 healthy vegan adults. Dietary intake data were assessed using three-day weighed food records. Body weight and height were measured, and a venous blood sample for the analysis of vitamin and mineral status was collected. Spearman rank correlation coefficients were used due to the presence of not-normally distributed data. Dietary patterns were identified using principal component analysis (PCA). Results: The DQS-V score (mean \pm SD) was 48.9 ± 14.7 . Most vegans adhered to the recommended portions of vegetables, vitamin C-rich vegetables, fruits, omega 3-rich nuts, fats and oils, and iodised salt. However, the intake of green leafy vegetables, vitamin C-rich fruits, wholegrains, legumes, nuts and seeds, selenium-rich nuts, zero caloric liquid, and calcium-fortified foods was suboptimal. The intake of sweet-, salty-, fried foods and alcohol was higher than recommended. The DQS-V had a significantly positive correlation with intakes of fibre, polyunsaturated fatty acids, potassium, zinc, and phosphorus (p 's < 0.05) but was negatively correlated with vitamin B12 and niacin intakes (p 's < 0.05). Two dietary patterns were derived from PCA: (1) refined grains and sweets and (2) wholegrains and nuts. The correlation between the DQS-V and the first dietary pattern was negative (-0.41 , $p = 0.004$), but positive for the second dietary pattern (0.37 , $p = 0.01$). The dietary pattern of refined grains and sweets was inversely correlated with the beta-carotene status (-0.41 , $p = 0.004$) and the vitamin C status ($r = -0.51$, $p = 0.0002$). Conclusion: The newly developed DQS-V, based on the Swiss dietary recommendations for vegans, provides a single score for estimating the diet quality among vegan adults. Further validation studies examining the correlation of DQS-V with an independent dietary assessment method and with the biomarkers of nutritional intake and status are still needed before the general use of the DQS-V score.

Keywords: diet quality score; diet index; dietary patterns; vegan diet; vegan recommendations; vegan dietary guidelines



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