Metabolic syndrome in Greek adolescents and the effect of six-month educational / behavioral school interventions

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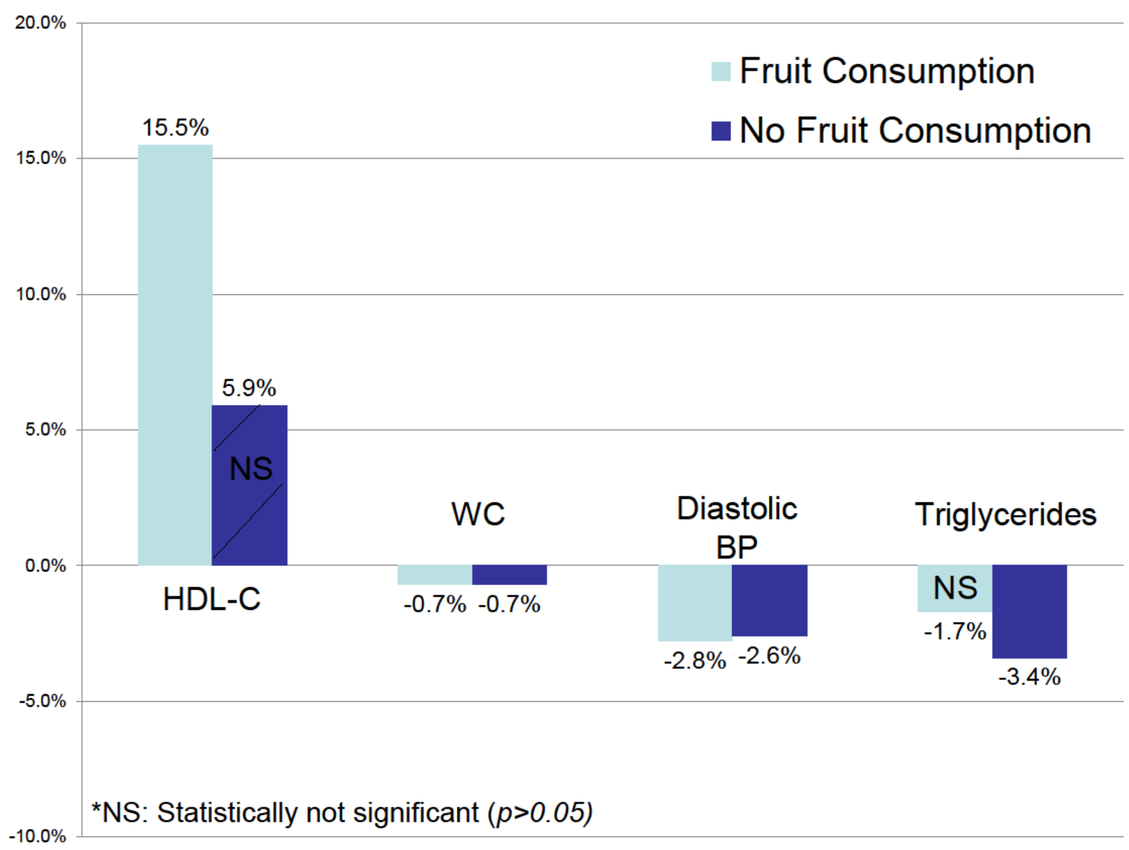
OBJECTIVES

Data regarding the prevalence of metabolic syndrome (MS) in Greek adolescents and the effect of school interventions are scarce.

To study the prevalence of MS in a representative sample of Greek adolescents and evaluate the impact of a 6-month educational - behavioral intervention.

METHODS

Cross-sectional anthropometric data [height, weight, waist circumference (WC)], blood pressure (BP), fasting blood glucose (BG), triglycerides and HDL-cholesterol, were assessed at baseline and following the intervention in adolescents aged 12-17 years, as part of a "screening program for metabolic syndrome characteristics in adolescents attending 27 high schools in three municipalities of Attica, with the use of portable telemedicine" funded by the European Union. Intervention consisted of educational sessions promoting healthy lifestyle by a dietitian, an exercise physiologist and a psychiatrist, at the school setting to all participants. Half of the students were randomized to receive an additional intervention of daily consumption of one fruit in classroom.



RESULTS

A total of 1,142 adolescents participated in the study, of whom 572 received the added fruit intervention. The prevalence of MS in the total sample was 2.7% at baseline and 2.3% post-intervention. There was no change in MS prevalence (2.5%) in the fruit intervention group, however there was a statistically significant increase in HDL-cholesterol (15.5%, $p<0.001$) and a decrease in WC (0.7%, $p=0.028$) and diastolic BP (2.8%, $p<0.001$) post-intervention. The prevalence of MS in the 570 adolescents who did not consume fruit, decreased from 2.8% to 2.1%, following the intervention, but this difference was not significant. In this group, significant decreases were found in WC (0.7%, $p=0.037$), diastolic BP (2.6%, $p<0.001$) and triglycerides (3.4%, $p=0.009$). Interestingly, body mass index (BMI) and BG increased significantly in both groups post-intervention.

CONCLUSIONS

A 6-month school intervention had a significant impact on abdominal obesity, diastolic BP and lipids, but did not improve BMI and BG in the short term.

References

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