

Abstract

Dietary Phytochemical Index in School-Age Children: Sociodemographic and Lifestyle-Related Factors [†]

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Abstract: Plant-based foods are known to be rich in nutrients, but they are also a good source of phytochemicals that have a positive effect on health. However, it appears that children in EU countries consume less plant-based foods and thus have a low phytochemical intake. Therefore, the aim of this study was to estimate the dietary phytochemical index (DPI) in children and to investigate the relationship between DPI and sociodemographic and lifestyle factors. DPI was estimated from the 3-day dietary records of 195 children (52% boys; 8.9 ± 0.4 years) from 14 primary schools in the city of Zagreb (school years 2018/2019). Sociodemographic and lifestyle factors were observed using a general questionnaire and a physical activity questionnaire for older children. Anthropometric measurements were performed according to standard protocols, while z-scores were obtained using AnthroPlus v.1.0.4. software. The mean DPI was 11.8 (7.7–16.2) in the total sample of children. In this study population, DPI was most influenced by fruit (39% of DPI) consumption, followed by whole grains (31%), vegetables (22%), and other foods (7%) such as olive oil, herbal drinks, herbs, tea etc. No association was found between DPI and weight status, sleep duration, sedentary behavior, physical activity level, parents' education level, and household income. However, sex was significantly weakly correlated with DPI ($r = 0.146$; $p = 0.041$), with girls having a significantly higher DPI (12.4; 9.5–17.7) compared to boys (10.3; 7.6–15.3). This difference is significant, as further analysis revealed that girls consumed more dried fruits ($p = 0.006$) and nuts ($p = 0.031$) than boys. Although there is no recommendation for phytochemical intake, nor for an appropriate DPI, the children in the present study have a lower DPI compared with the DPI estimated in the available literature for a similar population. Girls had a higher DPI than boys, but only because they consumed more dried fruits and nuts. It has not been demonstrated that this low DPI score is related to other sociodemographic and lifestyle factors. Further research is needed to determine which factors and their combination may influence DPI and whether these factors are equally pronounced in children with higher or lower DPI.

Keywords: childhood; child; determinants of eating behavior; dietary patterns; dietary phytochemical index; phytochemicals



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Informed Consent Statement: Written informed consent was obtained from parents of each child involved in the study.

Data Availability Statement: The data are available upon request from A.I.

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