

Abstract of the doctoral dissertation *Adolescents' attitudes and behaviors towards energy drinks and conditions of energy drinks acceptance* written by Katarzyna Żyłka

Energy drinks market is one of the fastest-growing segment of non-alcoholic beverages market. Energy drinks were designed to be consumed by active people because the main role of these beverages is to provide an extra boost in energy and also improve physical performance and cognitive functions. These beverages should be consumed by adults, however, literature review showed that energy drinks were very popular among adolescents. Taking into account that energy drinks contain caffeine, which is a psychoactive substance, frequent consumption of these beverages may adversely affect mental health and may be a risk factor for sleep disorders and cardiovascular system disorders. Energy drinks consumption is also considered as a lifestyle component leading to engagement in risky behaviors such as smoking, alcohol consumption, and illicit drugs use. Furthermore, due to the fact that energy drinks contain high amount of added sugars, frequent consumption of these beverages may contribute to the development of overweight, insulin resistance, and type 2 diabetes.

In connection with the above, the aim of the study was to assess attitudes and behaviors towards energy drinks consumption and evaluate conditions of energy drinks acceptance. Moreover, the study aimed to analyse the impact of frequency of energy drinks consumption on adolescents' lifestyle. The study sample consisted of 754 adolescents attending secondary schools and high schools located in the Pomorskie region (in the north Poland). A validated survey questionnaire was used in the study. Respondents were asked about behaviors regarding energy drinks consumption and about selected lifestyle components. A very important part of the survey questionnaire was a scale that was used to determine attitudes towards energy drinks. The obtained results were assessed in terms of gender, education level, socioeconomic status, and academic achievement. Organoleptic evaluation was carried out among 85 students who were 18 or 19 years old and attended high school participating in the study. Acceptance of energy drinks was determined using unstructured linear scales.

Based on the obtained results, it was noted that gender, education level, and academic achievement statistically significantly influenced frequency of energy drinks consumption. Socioeconomic status was not connected with frequency of energy drinks consumption. Boys, high school students, and adolescents with poor academic achievement consumed energy drinks more frequently than girls, secondary school students, and students with high academic achievement. The study showed that attitudes towards energy drinks were connected with

frequency of energy drinks consumption. Positive attitudes towards energy drinks were linked with frequent energy drinks consumption. By analysing the association between frequency of energy drinks consumption and adolescents' lifestyle, it was found that frequent energy drinks consumption had a negative impact on breakfast consumption, hours of sleeping on weekdays and hours of sleeping on weekends, screen time, and taking risky behaviors such as smoking, alcohol consumption, and illicit drugs use. However, the study did not confirm that frequent energy drinks consumption was associated with adolescents' overweight and obesity. The organoleptic evaluation, which was carried out using multiple regression model, showed that taste, as one of four analysed factors (appearance, taste, aroma, carbon dioxide concentration), influenced organoleptic acceptance of energy drinks.

Knowledge about attitudes and their connection with frequency of energy drinks consumption could be used as a source of information in creating nutrition education program. Taking into account the fact that frequent energy drinks consumption was associated with behaviors such as smoking, alcohol consumption, and illicit drugs use, substance abuse prevention efforts in children and adolescents should consider energy drinks consumption as a risk factor.

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04.03.2021