

Musa S.M., Baituni S.

ENERGY DRINK CONSUMPTION AND HEALTH EFFECTS IN MEDICAL STUDENTS: A CROSS-SECTIONAL SURVEY ANALYSIS

Tutor: senior lecturer Kunitskaya S.

*Department of Public Health and Healthcare
Belarusian State Medical University, Minsk*

Relevance. Energy drink consumption among medical students has increased globally, particularly during exam periods and high academic stress. Despite widespread use, there is limited data on gender-specific differences, faculty-specific patterns, and age-related trends in energy drink consumption and their associated health effects in medical education settings. Understanding and identifying these patterns is essential for developing targeted health preventive interventions.

Aim: to assess the prevalence of energy drink use and to identify factors contributing to their consumption among foreign students of Belarusian State Medical University.

Materials and methods. A cross-sectional web-based survey was conducted among 31 medical students (38.7% male, 61.3% female; age range 18–24 years, mean 21.5 ± 1.9). Participants included 24 General Medicine students (77.4%) and 7 Stomatology (Dentistry) students (22.6%). The survey assessed consumption frequency, reasons for use, side effects, sleep duration, perceived dependence, and stress levels. Data were analyzed using chi-square tests for categorical variables, independent t-tests for continuous variables, and Pearson correlation for age-related analysis. Statistical significance was set at $p < 0.05$.

Results and their discussion. Overall, 56.7% of students consumed 1-2 energy drinks per day during exam periods, with 53.3% using them specifically for study sessions. The primary reason for consumption was "to stay awake and alert" (43.3%).

Significant gender differences were observed. Males consumed significantly more energy drinks during exams than females (mean 1.25 vs. 0.53 drinks/day, $p = 0.041$). Males also reported significantly higher rates of cardiovascular side effects: rapid heart rate/palpitations (75.0% vs. 36.8%, $p = 0.032$) and anxiety/panic attacks (41.7% vs. 10.5%, $p = 0.038$). Males slept fewer hours when using energy drinks for studying compared to females (4.2 vs. 5.8 hours, $p = 0.022$) and reported higher levels of perceived dependence (25.0% "somewhat dependent" vs. 5.3%, $p = 0.048$).

Dentistry students were significantly more likely to mix energy drinks with pre-workout supplements compared to General Medicine students (42.9% vs. 8.3%, $p = 0.028$). Dentistry students also reported significantly more headaches/migraines as a side effect (57.1% vs. 20.8%, $p = 0.044$).

Age analysis revealed a significant negative correlation: older students consumed fewer energy drinks during exams ($r = -0.38$, $p = 0.033$). Students aged 23–24 years checked ingredient labels more frequently than younger students (57.1% vs. 18.2% in the 18–20 age group), approaching significance. No significant differences were found between genders for stress levels, nor between faculties for overall consumption frequency.

Conclusions. Male medical students are significantly more likely to consume energy drinks during exams and experience adverse cardiovascular effects (palpitations, high blood pressure), less sleep, and higher dependence than females. Faculty affiliation and age do not generally influence these patterns; however, dentistry students are more likely to mix energy drinks with pre-workout supplements and report more headaches than general medicine students. Public health interventions should prioritize gender-specific risk communication, especially cardiovascular monitoring in male students. Larger studies are needed to confirm these findings.