

PHARMACEUTICAL SCIENCES

EFFECTS OF CAFFEINE USE ON HEALTH AND DAILY FUNCTIONING AMONG MEDICAL STUDENTS

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Caffeine has become an almost indispensable part of students' lives, particularly among those studying in medical universities. Medical education demands high levels of concentration, endurance, and attentiveness, which often leads students to rely on coffee, tea or energy drinks to maintain alertness. In the context of wartime conditions, when anxiety levels and psychological stress are especially high, the need for such stimulants becomes even more evident. For this reason, we decided to investigate how caffeine affects the productivity, concentration and overall well-being of students at Kharkiv National Medical University (KhNMU).

To gain a comprehensive understanding of the situation, a survey was conducted among 76 students of various academic years and age groups. The questionnaire included fourteen questions related to the frequency of caffeine consumption, its effects on sleep, anxiety, and productivity, among other factors. First-year students constituted the largest portion of respondents, and the majority of participants were female.

The results showed that a significant number of students do not drink coffee on a daily basis; however, about one-third reported consuming at least one cup per day. Tea was a regular beverage for nearly half of the respondents, whereas most students avoided energy drinks. On average, the daily intake of caffeine ranged from 100 to

200 mg, which corresponds to approximately two cups of coffee or several servings of tea.

Interestingly, most students reported consuming caffeine during the daytime or in the afternoon. However, a considerable number noted that drinking coffee or tea in the evening could negatively affect their ability to fall asleep. Overall sleep quality was rated at 4 out of 5 by the majority, indicating the presence of certain issues, though not critical ones.

Regarding the impact of caffeine on academic performance, opinions were divided. More than half of the respondents did not observe any significant changes, while some noted that caffeine helped them maintain focus, particularly before classes or during exam preparation. A small percentage of students reported experiencing side effects following caffeine consumption, such as tremors, heart palpitations or increased anxiety.

Additionally, a small personal experiment was conducted: over the course of ten days, I consumed caffeine daily – coffee in the morning and tea in the evening. The morning beverage indeed provided a boost of energy, improved concentration, and allowed me to accomplish more than usual. However, a few hours after drinking coffee, I experienced slight tremors and a sense of internal tension. Evening tea, even in small amounts, noticeably interfered with falling asleep: I found it difficult to relax and often tossed and turned in bed.

Thus, caffeine can be a useful aid only when consumed wisely. For most students, it helps maintain alertness during the day and enhances academic performance; however, excessive intake or evening consumption may negatively affect sleep and overall well-being. The impact of caffeine is highly individual, making it essential for each person to find their own “measure”, so that the beverage becomes not a dependency, but an ally in the learning process.

REFERENCES

1. Nesteroidni protyzapalni preparaty: yikh efektyvnist' i dostupnist', pryiniatnist' dlia patsiienta / I. S. Chekman, O. P. Viktorov, N. O. Horchakova,

A. S. Svintsitskyi [ta in.]. K.: Polihraf Plius, 2011. 118 s.

2. Chekman I. S., Horchakova N. O., Tumanov V. A. ta in. Biokhimichni mekhanizmy dii kofeinu (ohliad literatury) // Fitoterapiia. Chasopys. Medytsyna. 2018. № 1. S. 4–8.

3. Syrova G. O. 1,3,7-trimethylxanthine – known adjuvant of non-steroidal anti-inflammatory drugs of different chemical structures / G. O. Syrova, L V. Lukianova, N. M. Chalenko // Proceedings of the First International conference of European Academy of Science, Bonn, November 30, 2018 / European Academy of Science. – Bonn, 2018. – P. 34–35.

4. B. P. Schachatel, J. M. Fillingim, A. C. Lane et al. Caffeine asan analgetic adjuvant. A double – blind study comparing aspirin with caffeine to aspirin and placebo in patients with sore throat // J. Clin. pharmacol. 2007. № 47. P. 860-870.

5. Experimental investigation of the effect of pharmaceutical composition on the central nervous system / G.Syrova, L.Lukianova, V.Sinelnik, Yu.Krasnikova, Logina Salam // Inter collegas: theoretical & experimental medicine. 2019. Vol. 6, № 3. P. 162-167.