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Short communication

Analysis of cognitive and stress-management supplement use among university students

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Introduction

University students often use food supplements to support academic performance and stress management, particularly when lifestyle modifications such as improved sleep or physical activity are insufficient. The usage varies by country and field of study, but the trend of pharmacological cognitive enhancement is increasing globally (Sharif, et al., 2021).

Commonly used aids include adaptogens (Ashwagandha), nootropics (Ginkgo Biloba, caffeine), and nutraceuticals (Magnesium, B-complex). Despite being marketed as "natural," these can cause adverse effects such as insomnia or tachycardia in healthy individuals (Hersant et al., 2023). Nootropics often increase cerebral blood flow or neurotransmitter availability, while adaptogens focus on stabilizing the hypothalamic-pituitary-adrenal (HPA) axis to improve stress resilience (Muralidhara and Rajini, 2023; Panossian and Wikman, 2010).

To evaluate the consumers' experiences related to the use of the cognitive and stress-management supplements in our country, we conducted a survey using an appropriate questionnaire.

Materials and methods

A questionnaire composed of 21 questions to objectively collect information about consumption, knowledge and attitude of university students related to some of the cognitive and anti-stress supplements was distributed using the following link: https://forms.gle/EUZWW1ixG36txyvH7. A total of 171 university students participated in the survey.

Results and discussion

The majority of respondents reported using supplements for cognitive enhancement and stress reduction. Regular use was reported by 9.9%, with a significant gender gap: 18.2% of males vs. 7% of females, aligning with Lengvenytė and Strumila (2016). Regarding frequency, 28.1% use them occasionally, 39.9% have tried them, and 28.1% never utilized such supplementation. Demographic data showed 74.3% were women and 25.7% men, primarily aged 18–23 (87.2%). Participants represented various fields: health sciences (25.7%), social sciences/humanities (30.4%), and technical sciences (18.7%). A proportion of 77.8% of the respondents utilize Magnesium supplements, 57.4% of them utilize Vitamin B supplements, 31% utilize caffeine (in the form of tablets or energy drinks), 24.6% utilize Omega-3 fatty acids, 15.2% utilize Ashwagandha, 5.3% of them utilize Ginko Biloba, 0.6% utilize Rhodiola, 0.6% utilize Valeriana, 4.1%

utilize some other supplements, and 1.8% stated that they have never utilized such supplements. Technical science students utilized fewer adaptogens (9.3%) than other disciplines (18-20%). The primary motivations for supplement use were increased energy (52%), stress reduction (56.8%), improved focus (40.4%), reduced anxiety (25.1%), and enhanced memory (21.1%). Notable gender differences emerged: male cohorts prioritized getting more energy (72.7%) and better memory (61.3%) compared to 44.9% and 39.3% of females, respectively. Contrary to that, more female cohorts (58.2%) use supplements for stress and anxiety management compared to males (36.3%). Some of the students (11.7%) declare to feel a significant improvement after taking the supplements, 47.4% state to feel a mild effect, 33.3% were not sure whether or no they feel an effect, and 7.6% claim that feel no effect. Only 18.7% of students reported researching in detail how supplements work, 77.2% had a moderate level of knowledge, and 4.1% reported no information at all. A substantial proportion of respondents (32.2%) obtained information about supplements from social media, followed by healthcare professionals (27.5%) and friends or relatives (24%), while 16.4% relied on scientific articles. Health science students were more likely to consult professionals or literature (61.3%) compared to social (44.2%) or technical (37.5%) cohorts. Only 14% of the students consult a healthcare professional before supplementation, 42.7% of them consult occasionally, and 43.3% never consult a professional. Most students (77.2%) purchase supplements from pharmacies, while fewer supply them from grocery stores (8.2%), supplement stores (8.8%), the internet (2.9%), or other sources (2.9%). Regarding safety awareness, 32.7% reported being well informed about side effects, 45% partially informed, and 22.2% not informed at all. When asked generally, 82.5% of students reported no side effects from supplement use, while 17.5% confirmed experiencing them. However, when specific symptoms were assessed, a higher proportion reported effects, including anxiety, nervousness, or irritability (59.6%), insomnia and nausea (56.7%), stomach pain and digestive issues (47.4%), and tachycardia (39.2%). The discrepancy between the reported lack of side effects and the high prevalence of specific symptoms suggests that students do not always establish a causal link between supplementation and subsequent physiological distress. Most students indicated that they intend to continue using supplements, while only 17.5% reported they would not. Across all study disciplines, 93% agreed that more education on the safe use of cognitive and stress-management supplements should be provided by qualified dietitians or other healthcare professionals.

Conclusion

This study showed a high prevalence of cognitive and stress-management supplement use among university students, mainly driven by academic pressure. The significant difference between perceived safety and reported adverse symptoms indicates a gap in health literacy and professional consultation. Consequently, there is an urgent need for targeted educational programs within universities to ensure the safe and informed use of cognitive and stress-management aids.

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