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«Клінічна медицина навколишнього середовища»

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К49 Матеріали конференції відображають широкий спектр сучасних проблем громадського здоров'я, клінічної і профілактичної медицини. У збірнику представлені результати наукових досліджень і практичних розробок з питань профілактики професійних і неінфекційних захворювань, здоров'язбережувальних технологій, психогігієни, гігієни харчування та санітарного забезпечення населення в умовах сучасних викликів.

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ECONOMIC INCENTIVES AND DIGITAL TOOLS IN THE SYSTEM OF PREVENTING NICOTINE ADDICTION AMONG ADOLESCENTS

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The problem of non-communicable diseases in Ukraine has consistently remained a matter of profound relevance over the last decades. Behavioral factors, such as an unhealthy lifestyle, poor nutrition, and low physical activity, account for the vast majority of cardiovascular pathologies, type 2 diabetes, and chronic respiratory diseases. According to the STEPS study, tobacco and nicotine use is the primary modifiable risk factor for cardiovascular and oncological diseases, which predominantly develops during adolescence [5, p.

18]. The situation is complicated by market transformation: traditional cigarettes have been replaced by electronic vaping devices and tobacco heating systems. According to the ESPAD 2019 international study, 50.5% of adolescents in Ukraine have smoking experience, and nearly one in five students (19.6%) smokes cigarettes daily [1, p. 20-21]. Traditional educational methods based solely on informing about health harms show low effectiveness, necessitating the search for new approaches, particularly through economic incentive mechanisms and digital technologies.

The research problem lies in the low motivation of adolescents to quit nicotine, as negative biological consequences (hypoxia, damage to respiratory epithelium) are perceived as distant in time [3, p. 2]. The integration of financial incentives into digital educational platforms can create immediate positive reinforcement sufficient to form a sustained refusal of psychoactive substance use.

Economic incentives in addictology are most often implemented through the contingency management model, which involves providing direct financial rewards for objectively confirmed nicotine abstinence. For adults, the chances of successful cessation are one and a half times higher compared to groups without incentives; however, applying this model to adolescence possesses its own specific characteristics [4, p. 5].

Analysis of the Smokefree Class Competition program, which was the primary incentive model for schoolchildren in Europe for a long time, revealed significant limitations. Within this program, classes committed to not smoking for 6 months to participate in a prize draw. A systematic review showed that such a group approach does not ensure a significant long-term effect because there is no direct individual reward for effort [3, p. 6]. In contrast, the Quit and Win model and individual digital interventions, where a teenager registers on a specialized website or app and receives bonuses for each confirmed day of abstinence, appear more promising.

Implementing this approach requires effective digital tools. The average modern adolescent spends about 4 hours daily in the digital environment, making the smartphone the main communication channel [1, p. 58]. In Ukraine, the "I'm Quitting Smoking!" service (stopsmoking.org.ua) is already operational, offering dependency tests and step-by-step cessation plans. However, to increase effectiveness, such resources should be integrated with gamification mechanisms and financial incentives.

According to the latest data from the Butler A. R. (2025) review, text message-based interventions significantly help youth quit vaping, being safe and easily scalable [2, p. 4]. Importantly, the effectiveness of financial incentives does not always directly depend on the payout amount. Psychological studies prove that for youth, the regularity and speed of receiving

a bonus are more important than its face value. This allows for the implementation of micro-reward programs, which is economically feasible for the public health system.

Digitizing the biological justification for cessation in the learning process through simulations (PhET virtual laboratories), which visually demonstrate the mechanism of carbon monoxide replacing oxygen in hemoglobin under the influence of combustion products or vape aerosols by confirming the effect of nicotine salts on the developing brain's neural connections, can become a cognitive foundation upon which the economic incentive acts as an additional trigger for behavioral changes.

Despite its promise, economic incentives face challenges regarding attempts by adolescents to falsify data about non-use of nicotine to obtain funds, as well as questions about the sustainability of the effect after payments cease. Research shows that the most stable results are achieved by combined programs, where financial incentives are used only at the first stage to overcome withdrawal syndrome, while subsequent motivation is maintained through the development of social competence and community support in apps like QuitNow! or Smoke Free.

Economic incentives combined with available digital tools will allow the shift of the fight against tobacco smoking from the plane of prohibitions to the plane of rational choice and positive self-affirmation as a real alternative to traditional methods, capable of significantly reducing the burden of non-communicable diseases in the future.

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