

12. Seetharaman, R. Exploring the healing power of singing bowls: An overview of key findings and potential benefits / R. Seetharaman, S. Avhad, J. Rane // *Explore*. – 2023. – Vol. 20, № 1. – P. 39-43.
13. Monzillo, E. New Insights on Therapeutic Touch: A Discussion of Experimental Methodology and Design That Resulted in Significant Effects on Normal Human Cells and Osteosarcoma / E. Monzillo, G. Gronowicz // *Explore*. – 2011. – Vol. 7, № 1. – P. 44-51.
14. Plasticity of the epigenome during early-life stress / S.B. Burns, J. K. Szyszkowicz, G. N. Luheshi [et al.] // *Seminars in Cell & Developmental Biology*. – 2018. – Vol. 77. – P. 115-132.
15. What Is the Molecular Signature of Mind–Body Interventions? A Systematic Review of Gene Expression Changes Induced by Meditation and Related Practices / I. Buric, M. Farias, J. Jong [et al.] // *Frontiers in Immunology*. – 2017. – Vol. 8. – P. 670.
16. Checks and balances: The glucocorticoid receptor and NF- κ B in good times and bad / M. Bekhbat, S.A. Rowson, G.N. Neigh [et al.] // *Frontiers in Neuroendocrinology*. – 2017. – Vol. 46. – P. 15-31.
17. Differential DNA methylation in experienced meditators after an intensive day of mindfulness-based practice: Implications for immune-related pathways / R. Chaix, M. Fagny, M. Cosin-Tomas [et al.] // *Brain, Behavior, and Immunity*. – 2020. – Vol. 84. – P. 36-44.
18. Leskowitz, E. Phantom Limb Pain: An Energy/Trauma Model / E. Leskowitz // *Explore*. – 2014. – Vol. 10, № 6. – P. 389-397.
19. Brenner, J. E. Linking the Tao, biomathics and information through the logic of energy / J. E. Brenner // *Progress in Biophysics and Molecular Biology*. – 2017. – Vol. 131. – P. 15-33.
20. Possible negentropic effects observed during Energy Medicine sessions / L. Carpenter, H. Wahbeh, G. Yount, Arnaud [et al.] // *Explore*. – 2021. – Vol. 17, № 1. – P. 45-49.
21. Hammerschlag, R. Biofield therapies: Guidelines for reporting clinical trials / R. Hammerschlag, Meredith L. Sprengel, A. L. Baldwin // *Complementary Therapies in Medicine*. – 2024. – Vol. 82. – P. 103011.

Сведения об авторах

Е.И. Огаркова* – студент

Е.В. Власова – кандидат философских наук, доцент

Information about the authors

E.I. Ogarkova* – Student

E.V. Vlasova –Candidate of Sciences (Philosophical), Associate Professor

***Автор, ответственный за переписку (Corresponding author):**

ogarkovaei@gmail.com

УДК: 159.97

ИЗУЧЕНИЕ НИКОТИНОВОЙ ЗАВИСИМОСТИ И ЕЁ РАСПРОСТРАНЁННОСТИ СРЕДИ МОЛОДЫХ ЛЮДЕЙ

Огаркова Екатерина Игоревна, Пенькова Елена Анатольевна

Кафедра иностранных языков и межкультурной коммуникации

ФГБОУ ВО «Уральский государственный медицинский университет» Минздрава России

Екатеринбург, Россия

Аннотация

Введение. Молодые люди, не имеющие достаточного жизненного опыта и образования, наиболее расположены различным зависимостям, влияющим на психическое здоровье и адаптацию в обществе. Одной из самых распространённых зависимостей на данный момент является никотиновая зависимость. Потребляемый никотин выступает безусловным раздражителем и имитирует действие медиаторов, снижая естественные реакции организма на стрессовые условия окружающей среды. Со временем для получения того же эффекта требуется всё большая доза никотина, при нехватке его человек испытывает психический и физический дискомфорт, из-за чего привычка переходит в прогрессирующее патологическое состояние и становится аддиктивным поведением – зависимостью. **Цель исследования** – изучить процесс возникновения и степень распространённости никотиновой зависимости у молодых людей. **Материал и методы.** Проведено анонимное анкетирование молодых людей разных социальных групп в возрасте от 15 лет до 21 года с целью выявления распространённости и степени никотиновой зависимости в различных возрастных и гендерных группах. **Результаты.** Поведенческие зависимости у молодых людей под воздействием многочисленных соблазнов, широко распространённых в современном мире, могут развиваться с очень высокой скоростью. Опрос помог выявить наличие и степень зависимости молодых людей от курения обычных и электронных сигарет. **Выводы.** Выработанные временем нейронные связи, возникшие как специфическая реакция на предмет зависимости, закрепляются в головном мозге под влиянием жизненного опыта и факторов социальной среды. Привычка может стать тяжёлой зависимостью при чрезмерном стремлении получать удовольствие от курения.

Ключевые слова: химические зависимости, курение, никотин, сигареты, электронные сигареты.

THE RESEARCH OF NICOTINE ADDICTION AND IT'S PREVALENCE AMONG YOUNG PEOPLE

Ogarkova Ekaterina Igorevna, Penkova Elena Anatoljiewna

Department of Foreign Languages and Intercultural Communication

Abstract

Introduction. The young people who do not have sufficient life experience and education are most prone to various addictions that affect mental health and adaptation in society. One of the most common addictions at the moment is nicotine addiction. Consumed nicotine acts as an unconditional irritant and mimics the action of mediators, reducing the body's natural reactions to stressful environmental conditions. Over time, an increasing dose of nicotine is required to obtain the same effect, and when there is a lack of it, a person experiences mental and physical discomfort, which causes the habit to turn into a progressive pathological condition and become addictive behavior – addiction. **The aim of the study** is to study the process of occurrence and the degree of prevalence of nicotine addiction in young people. **Material and methods.** An anonymous survey of young people from different social groups aged 15 to 21 years was conducted in order to identify the prevalence and degree of nicotine addiction in various age and gender groups. **Results.** Behavioral addictions in young people under the influence of numerous temptations, widespread in the modern world, can develop at a very high rate. The survey helped to identify the presence and degree of dependence of young people on smoking conventional and electronic cigarettes. **Conclusion.** The neural connections developed over time, which arose as a specific reaction to the subject of addiction, are fixed in the brain under the influence of life experience and social environment factors. The habit can become a severe addiction with an excessive desire to enjoy smoking.

Keywords: chemical addictions, smoking, nicotine, cigarettes, electronic cigarettes.

INTRODUCTION

A person is constantly in search of the most favorable and satisfying his individual needs conditions of existence. The cerebral cortex analyzes the surrounding reality, the limbic system produces neurotransmitters. Sensations and feelings are unique, but neurochemicals are all the same: dopamine, serotonin, oxytocin and endorphin. Consumed products that act as unconditioned stimuli contain substances that imitate the action of mediators and enter into competitive interactions in the body's natural reactions to environmental conditions. In some situations, the formation of addictions is influenced by social factors, the uniqueness of life experience. With the development of technology, new temptations appear, which cause us to have new non-standard reactions and methods of behavior in various situations. The young people who do not have sufficient life experience and education are most prone to various types of addictions that affect the mental health and adaptation in society.

The aim of the study is to study the process of occurrence and the degree of prevalence of nicotine addiction in young people.

MATERIAL AND METHODS

In the period from 08.04.23 at 19:25 (the time of sending the first questionnaire) to 15.04.23 at 17:56 (the time of sending the last questionnaire), an anonymous survey of 294 people was conducted, among whom were schoolchildren, students, including students from medical universities, employees of the music and creative industries.

The main criterion for inclusion in the survey was the criterion of age. The criteria for non-inclusion in the interpretation of the results is age over 21 years, as well as the lack of answers to all the questionnaire questions that were necessary for conducting tests that reveal the degree of dependence (even if the participant was in the selected age category). Thus, out of 294 respondents, 153 people fell into the category from 15 to 21 years old. The results could not be interpreted in 1 person, as he answered the question about smoking positively, but ignored all other questions necessary to identify the degree of dependence. The total number of respondents is 152 people.

The majority of respondents, 122 people (80%), were women, 30 people (20%) were men. The majority of respondents were 18 years old (44 people; 29%), as well as 20 years old (40 people; 26%), 21 years old (27 people; 18%), 19 years old (26 people; 17%), 17 years old (8 people; 5%), 16 years old (6 people; 4%), 15 years old (1 person; 1%).

The survey was conducted in the survey administration program "Google Forms" with further entry of the results into the spreadsheet "Microsoft Excel" (version 2206, build 15330.20266).

The respondents were provided with 2 questionnaires (to identify the degree of dependence on cigarette smoking and to identify the degree of dependence on the use of electronic cigarettes), before each questionnaire there was a question about the use of nicotine in the form of cigarettes /electronic cigarettes. If the answer was negative, the participant did not answer the clarifying

questions necessary to identify the degree of dependence. In addition, at the beginning, the respondents were asked to answer 3 questions about age, gender and type of activity.

The first questionnaire contained 6 questions (Fagerstrom's nicotine addiction test) [1]. The second questionnaire contained 11 questions (a test developed by Kathleen Smith, PhD, LPC; Michael McGee, MD) [2].

Methods of descriptive statistics: calculation of statistical indicators, graphical representation. To implement descriptive statistics methods, a Microsoft Excel spreadsheet program (version 2206, build 15330.20266). was used.

RESULTS

The first set of survey questions was devoted to the identification of nicotine addiction among people who receive nicotine from cigarettes. To the question "Do you smoke?" the majority of respondents (113 people; 74%) answered negatively, while 39 respondents (26%) had positive responses. Among men, 9 people (30%) smoke cigarettes, while among women this figure is slightly lower – 30 respondents (24.6%). The prevalence of cigarette smoking increased linearly from 16 to 19 years, amounting to 0 people (0%) over 15 years, 0 people (0%) over 16 years, 1 person (12.5%) over 17 years, 12 people (27.3%) over 18 years and 8 people (30.8%) over 19 years old. The second highest result is for people aged 21 years - 33.3% (9 people), and for people aged 20 years - 22.5% (9 people).

Most often (29 people; 74% of smokers), low dependence was detected. Moderate degree of dependence was 13% (5 people), strong – also 13% (5 people). A low degree of dependence is most common among both women and men. This amounted to 83.3% (25 people) and 44.4% (4 people), respectively. The ratio of moderate to strong dependence in the female group was 1:1.5, in the male group – 1.5:1. Thus, strong dependence is more common among women aged 15-21 years than among men of the same age. There is a tendency to increase a strong degree of dependence with age. Thus, a strong degree of dependence was 0% (0 people) among respondents aged 15, 16, 17 and 19, 8.3% (1 person) among 18-year-olds, 22.2% (2 people) among respondents aged 20 and 21.

As a result of the analysis of the prevalence of vaping use in gender and age groups, it was revealed that the number of male smokers did not change significantly, amounting to 8 people (27%), and the number of female smokers increased 1.6 times, amounting to 50 people (41%). In almost all age groups, the percentage of people who smoke has increased compared to those who smoke cigarettes. For 15 years, the result was also 0 people (0%), for 16 years 1 person (16.7%) compared to 0 people (0%), for 17 years the number decreased and amounted to 0 people (0%) compared to 1 person (12.5%), for 18 years the number increased from 12 (27.3%) to 18 people (40.9%), for 19 years – from 8 people (30.8%) to 9 (34.6%), for 20 years – from 9 (22.5%) to 15 (37.5%), for 21 years – from 9 (33.3%) to 15 people (55.6%).

No one was found to have a very strong addiction, with the most common being a very low addiction in 19 people (33%). Interestingly, moderate dependence is more common than low: 17 people (29%) and 13 people (22%), respectively. Strong dependence was detected in 9 people (16%). When analyzing the prevalence of degrees of dependence in gender and age groups, it was found that in gender groups there is approximately the same relative number of people with the same degree of dependence, in girls the indicators are slightly higher with moderate and strong forms of dependence. Namely, a moderate degree of dependence was detected in 15 women (30%) and 2 men (25%), a strong degree of dependence was observed in 8 women (16%) and 1 man (12.5%). With increasing age, an increasing percentage in each age group accounts for a stronger degree of dependence. So, for 18 years the maximum was observed for a very low degree in 7 people (36.8%), for 19 years the maximum is for a low degree of dependence and is 4 people (44.4%), for 20 years the maximum with a moderate degree of dependence is 6 people (40%), at the age of 21 the most common is strong degree of dependence is observed in 7 people (46.7%).

Among smokers, the majority consume nicotine in both forms (31 people, 20%), vaping is in second place in popularity (28 people, 18%), smoking cigarettes separately is not so common and is only 8 people (5%). The predominant way nicotine enters the body in gender and age groups makes it clear that girls either use only vaping (25 people; 45%) or smoke cigarettes and use vaping at the

same time (25 people; 45%), while men prefer to use both sources simultaneously (6 people; 55%), vaping and cigarettes separately are not so common. The use of both sources of nicotine is most common among people aged 18 to 21 years, the peak is at the age of 18 (10 people; 50%). Note that people who use both vaping and cigarettes at the same time most often have a low dependence on cigarettes. Low dependence on vaping is also in the first place, but the gap with moderate dependence in this case is already minimal (fig. 1).

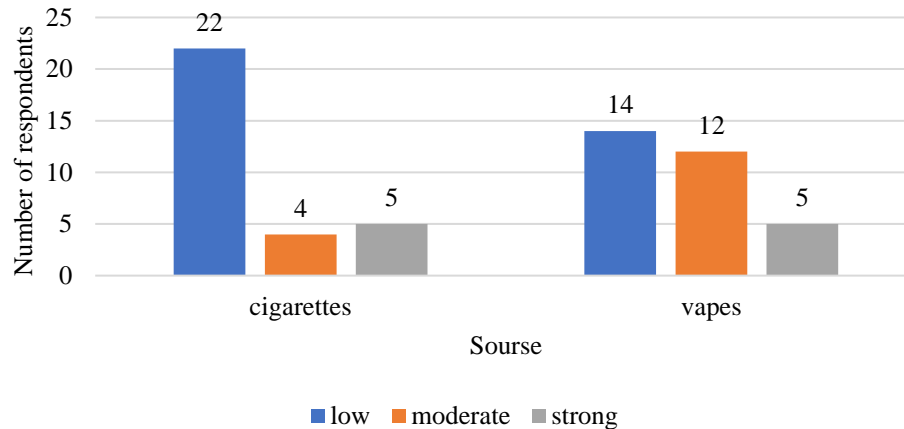


Fig.1 Degree of dependence on nicotine from various sources among respondents using both cigarettes and vapes

DISCUSSION

Any stressful situation is perceived as a threat to existence, while the stress hormone cortisol is synthesized, which encourages a person to turn to a source of pleasure [3]. Neurotransmitters allow you to experience bursts of positive emotions and a sense of satisfaction. At the same time, the influx of neurotransmitters from external stimulation is many times stronger than from natural biological regulation. The consumed products enter into a competitive relationship with the molecules of the body, acting as imitators of mediators, which over time reduces the natural production of mediators in the body, and a feeling of satisfaction arises only after consuming the object of dependence. Nicotine can be such an object. From the point of view of biology, addiction is formed due to a defect in the reward system.

It is worth paying attention to the fact that smoking causes a huge release of dopamine. After a certain period of time, nicotine overcomes the blood-brain barrier, while stimulating acetylcholine receptors. After that, a potential smoker develops nicotine addiction.

Tobacco dependence is formed under the influence of two processes at once [4]: firstly, nicotine activates part of acetylcholine receptors (AR), and secondly, nicotine deactivates part of acetylcholine receptors (fig. 2).

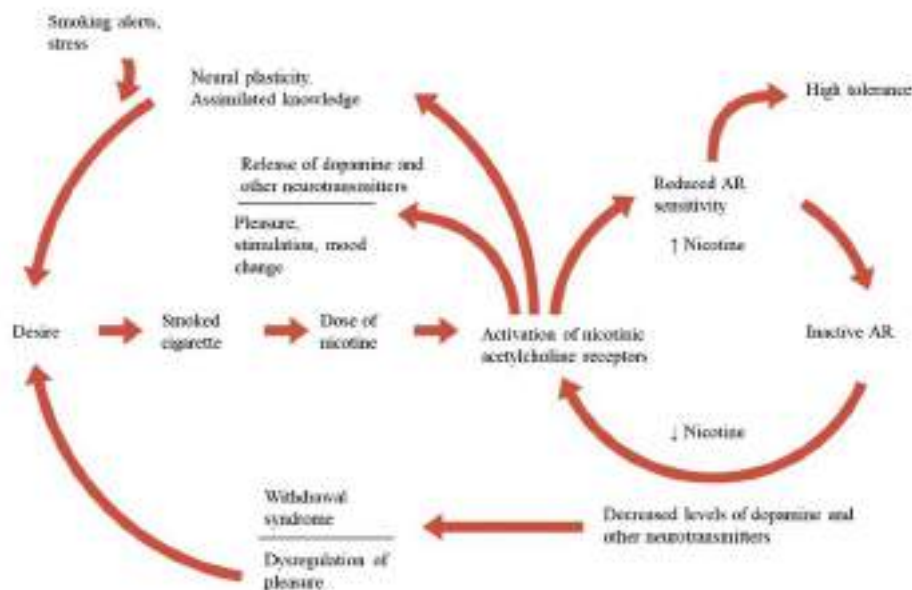


Fig. 2 The smoking cycle

Nicotine stimulates the release of dopamine through certain receptors. When these receptors begin to work in the same mode, nicotine (already in a lower concentration) desensitizes other receptors that help suppress the release of dopamine. The dopamine surge continues, and then the smoker feels the need to smoke again. Each time, an increasing dose of something is required to meet the needs of the body, but over time, bursts of positive emotions decrease.

The tests offered to respondents take into account not only the number of cigarettes smoked per day, but also the time of smoking the first cigarette, the tendency to smoke when unwell, the difficulty of quitting cigarettes after a certain period of time after waking up during the day, which leads to a comprehensive approach to determining the degree of dependence.

The linear increase in the number of cigarette smokers from 16 to 19 years old can be explained by adolescence, increased socialization and the influence of social groups on the individual, when the basics and norms instilled in the family may fade into the background, as well as the prevalence of tobacco smoking demonstrations in the culture of the media, which makes deviant habits begin to seem related to status and desirable. A teenager feels the need to prove himself among his peers and unconsciously considers smoking a sign of an adult, successful and accomplished person [5]. The decrease by the age of 20 and then the increase in the percentage of smokers by the age of 21 can be explained by unsuccessful attempts to quit smoking.

Despite the highest prevalence of low dependence, according to the test for motivation to quit smoking published in the literature, it was found that the majority of young people who smoke have no motivation to give up tobacco [6].

The decline in the severe degree of dependence among respondents aged 19 can be explained by unsuccessful attempts to quit smoking at the age of 18, in a state of severe dependence, and the need for large doses of nicotine when resuming smoking, because a large number of positive pleasant sensations from the past are associated with smoking.

Nicotine consumption using e-cigarettes is higher in all age groups, and the most common degree of dependence is moderate, which can be explained by the unpleasant smell of cigarette smoke, the prevalence of electronic nicotine carriers in the culture of teen TV shows, the possibility of use both indoors and outdoors.

The maximum percentage of people is found with an increasingly high degree of dependence with age. Consequently, data on an increase in nicotine consumption to obtain the same effect as at the beginning of smoking, as well as the progression of addiction, are confirmed experimentally. This is also evidenced by the fact that smokers prefer to use nicotine both in the form of cigarettes and in the form of electronic cigarettes at the same time. The peak use of both sources occurs at the age of 18, which suggests that dependence is formed early and takes shape by the age of 18 [6].

CONCLUSION

1. The study allowed us to study the process of nicotine addiction. Synapses, which are constantly affected by nicotine, reduce the production of acetylcholine, the main mediator of the parasympathetic nervous system, which is why the natural regulation of excitatory and inhibitory processes of the body is disrupted, control now depends on the frequency and concentration of nicotine consumed.
2. The etiology and pathogenesis of addiction are formed strictly individually under the influence of social, physiological, neurochemical and other factors.
3. The survey helped to identify the prevalence of nicotine addiction among various age and gender groups, as well as to determine the degree of dependence in which respondents are currently.
4. Representatives of different ages are subject to the same addictions to varying degrees. There is a tendency for a high number of people from 15 to 21 years old to use nicotine simultaneously in both the form of cigarettes and in the form of electronic cigarettes.

5. E-cigarettes are the most common among teenagers, while dependence is at a higher stage than on cigarettes. With age, there is an increase in people with a higher degree of dependence, because in order to obtain the same effect, an increasing dose of nicotine is required, and the dependence worsens.

LIST OF REFERENCES

1. Test for Nicotine Dependence: a revision of the Fagerstrom Tolerance Questionnaire / T. F. Heatherton, L. T. Kozlowski, R. C. Frecker, K. O. Fagerstrom // *British Journal of Addiction* – 1991. – Vol. 9, № 86. – P. 1119-1127.
2. A New Measure for Assessing Substance-Related and Addictive Disorders: The Addictive Behavior Questionnaire (ABQ) / V. Caretti, A. Gori, G. Craparo [et al.] // *Journal of Clinical Medicine*. – 2018. – Vol. 8, № 7. – P. 194.
3. Breuning, L.G. Meet Your Happy Chemicals: Dopamine, Endorphin, Oxytocin, Serotonin / L. G. Breuning. - Scotts Valley: CreateSpace Independent Publishing Platform, 2012. – 210 p.
4. Ortells, M. O. Tobacco addiction: A biochemical model of nicotine dependence / M. O. Ortells, G. E. Barrantes // *Medical Hypotheses*. – 2010. – Vol. 74, №5. – P. 884-894.
5. Циомо, Е. Е. Особенности формирования никотиновой зависимости у молодых людей в соответствии с доминирующим психическим состоянием / Е.Е. Циомо, С.В. Фролова // *Молодой ученый*. – 2019. – № 2 – С. 47-49.
6. Левшин, В.Ф. Тест на мотивацию к отказу от курения и его практическое применение / В.Ф. Левшин. – Москва: Вопросы наркологии, 2003. – 6 с.

Сведения об авторах

Е.И. Огаркова* – студент

Е.А. Пенькова – старший преподаватель

Information about the authors

E.I. Ogarkova* – Student

E.A. Penkova – Senior Lecturer

*Автор, ответственный за переписку (Corresponding author):

ogarkovaei@gmail.com

УДК: 159.9.072

УРОВЕНЬ ТРЕВОЖНОСТИ У СПОРТСМЕНОВ СИНХРОННОГО ПЛАВАНИЯ ПЕРЕД СОРЕВНОВАНИЯМИ

Оплетина Арина Вячеславовна, Колотнина Елена Владимировна

Кафедра иностранных языков и межкультурной коммуникации

ФБГОУ ВО «Уральский государственный медицинский университет» Минздрава России, Екатеринбург, Россия

Аннотация

Введение. Разнонаправленное влияние тревоги на итоговый результат выступления спортсмена является актуальной тематикой для исследований в области спортивной медицины и психологии. **Цель исследования** – анализ результатов оценки уровня личностной и реактивной тревожности у девушек 15-18 лет за 1 день до соревнований по синхронному плаванию. **Материал и методы.** Была применена методика Ч.Д. Спилбергера и Ю.Л. Ханина за день до всероссийских соревнований по синхронному плаванию. **Результаты.** По итогам исследования высокую реактивную тревожность имеет 58,33% обследуемых, умеренную реактивную тревожность - 33,33%, а низкую реактивную тревожность - 8,33%. Высокую личностную тревожность имеет 33,33% обследуемых, умеренную личностную тревожность - 41,67%, а низкую личностную тревожность - 33,33%. **Выводы.** Тревожность и ее уровень оказывает значительное влияние на результат спортивной деятельности.

Ключевые слова: тревожность, синхронное плавание, реактивная тревожность, личностная тревожность, спорт.

ANXIETY LEVEL IN SYNCHRONOUS SWIMMING ATHLETES BEFORE COMPETITIONS

Opletina Arina Vyacheslavovna, Kolotnina Elena Vladimirovna

Department of Foreign Languages and Intercultural Communication

Ural State Medical University

Yekaterinburg, Russia

Abstract

Introduction. The influence of anxiety on the final result of the athlete's performance is a relevant topic for research in the sphere of sports medicine and psychology. **The aim of the study** is to analyze the results of assessing the level of personality and reactive anxiety in 15-18 year-old girls one day before the synchronous swimming competition. **Material and methods.** The method of C.D. Spielberger and Y.L. Khanin one day before the All-Russian synchronized swimming competitions was used. **Results.** According to the results of the study, 58.33% of sportsmen have high reactive anxiety, 33.33% have moderate reactive anxiety, and 8.33% have low reactive anxiety. According to the results 33.33% have high