

АНАЛИЗ ПОВЕДЕНЧЕСКИХ РИСКОВ У ПОДРОСТКОВ С ОГРАНИЧЕННЫМИ ВОЗМОЖНОСТЯМИ ЗДОРОВЬЯ, ИМЕЮЩИХ РАЗЛИЧНЫЕ УРОВНИ ТРЕВОЖНОСТИ

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Цель. Оценить особенности образа жизни подростков с ограниченными возможностями здоровья, имеющих различные уровни тревожности.

Материалы и методы. В исследовании принимали участие 89 подростков с ограниченными возможностями здоровья, обучающиеся в образовательном учреждении среднего профессионального образования. Ведущее место среди причин инвалидности (основное заболевание) были психические расстройства и расстройства поведения. Изучали уровни тревожности учащихся (тест Спилбергера-Ханина), степень никотиновой зависимости (тест Фагерстрема), оценивали социальные факторы, продолжительность ночного сна, анализировали организацию досуга.

Результаты. Среди обследуемых низкая ситуативная тревожность (СТ, <30 баллов) выявлена у 76,2% подростков, умеренная СТ (33-44 балла) – у 23,8% учащихся. 51,4% имели высокий уровень личностной тревожности (ЛТ). Установлена умеренная отрицательная корреляционная связь между показателями СТ и ЛТ учащихся ($r=-0,72$, $p=0,02$). При оценке образа жизни подростков установили: наличие фактора семейного неблагополучия (каждый шестой учащийся ранее воспитывался в социальном учреждении); сокращение продолжительности ночного сна (<7 часов) у 30,8% учащихся; низкую двигательную активность (только 18,9% учащихся посещали дополнительные занятия физкультурой и спортом). Определяли наличие никотиновой зависимости различной степени более чем у 90% учащихся, употребление алкогольных напитков хотя бы раз в жизни – у 61,2%. Выявлена корреляция между фактом проживания учащихся в общежитии учреждения ($r=-0,56$, $p=0,031$), продолжительностью ночного сна ($r=-0,61$, $p=0,028$), организацией пассивного отдыха ($r=-0,52$, $p=0,04$) и уровнем СТ.

Заключение. Проведенное исследование позволило выявить ведущие факторы риска для обоснования программ, направленных на профилактику развития дезадаптации. К таковым относились: фактор семейного неблагополучия, распространенность вредных привычек, сокращение продолжительности ночного сна, низкая двигательная активность.

Ключевые слова: подростки; образ жизни; тревожность.

ANALYSIS OF BEHAVIORAL RISKS IN ADOLESCENTS WITH HEALTH LIMITATIONS AND WITH DIFFERENT ANXIETY LEVELS

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Aim. To assess peculiarities of lifestyle of adolescents with health limitations having different levels of anxiety.

Materials and Methods. In the research 89 adolescents with health limitations were involved studying at an educational institution of secondary professional education. The leading



causes of disability (the main disease) were mental and behavioral disorders. Anxiety levels of the adolescents (State Trait Anxiety Inventory), the extent of nicotine addiction (Fagerstrom test) were studied, social factors, duration of night sleep were assessed, organization of leisure was analyzed.

Results. Low state anxiety (SA, <30 points) was found in 76.2% of the examined adolescents, moderate SA (33-34 points) – in 23.8%, 51.4% had a high level of trait anxiety (TA). A moderate negative correlation relationship was established between SA and TA of students ($r=-0.72$, $p=0.02$). Assessment of the lifestyle of adolescents found the existence of the family disadvantages (each sixth student grew in a social institution); reduction in the night sleep duration (<7 hours) in 30.8% of students; low physical activity (only 18.9% of students attended additional physical culture and sports classes). Nicotine addiction was found in more than 90% of students, 61.2% of students used strong drinks at least once in life. A correlation was established between living in a hostel ($r=-0.56$, $p=0.031$), duration of night sleep ($r=-0.61$, $p=0.028$), organization of passive rest ($r=-0.52$, $p=0.04$) and the level of SA.

Conclusion. The conducted research identified the following risk factors for justification of programs for prevention of development of desadaptation: factor of family disadvantages, bad habits, reduced duration of night sleep, low physical activity.

Keywords: *adolescents; life style; anxiety.*

Formation of health of adolescents is under influence of several groups of factors. Thus, the structure and conditions of the academic process in the secondary professional educational institution are considerably more complicated in comparison with school. Education includes studying of special disciplines and mastering of professional skills, when an organism meets with factors of the industrial environmental and of the working process [1].

A contribution of socio-hygienic factors determining conditions and lifestyle of modern adolescents in terms of change of the health condition is a proven fact [2-6]. According to the scientists, 50-55% of factors that nowadays determine health condition are associated with the lifestyle.

Besides, according to S.A. Suprun and I.V. Zabozaeva [7], children with mental underdevelopment are inclined to early use of psychoactive substances that leads to disorders in adaptation and to behavioral reactions.

Aim – analysis of peculiarities of the lifestyle of adolescents with health limitations having different anxiety levels; assessment of the lifestyle, bad habits, state and trait anxiety in adolescents studying at boarding schools of professional education.

Materials and Methods

The research involved 89 adolescents (52 boys and 37 girls) who were learning vocational professions at the boarding school for disabled individuals and individuals with health limitations. In 58% of cases adolescents had disability. The leading causes of disability were mental disorders (35.5%), pathologies of the nervous system (23.7%), diseases of the ear and mastoid process (20.3%). Students who did not have disability, in most cases had mental disorders, namely, mild mental retardation (35.5% of cases). As a concomitant condition, mental retardation was determined in 14.7% cases.

The study was approved by Ethical Committee of V.I. Razumovsky Saratov State Medical University (Protocol №3 of 07.11.2017) and was conducted with consent of the test persons on the basis of Federal Law Russian Federation №323-FL of November 21, 2011 «On Fundamentals of Health Protection of Citizens of Russian Federation».

Analysis of anxiety level was conducted using STAI (State Trait Anxiety Inventory), the extent of nicotine addiction – using Fagerstrom test [8]. Fagerstrom test consists

of 6 questions, answers to which are evaluated in points. The interpretation of the results was based on the total parameter stratified according to the following values:

- 0-2 points – very weak nicotine addiction,
- 3-4 points – weak nicotine addiction,
- 5 points – moderate nicotine addiction,
- 6-7 points – high nicotine addiction,
- 8-10 points – very high nicotine addiction.

Evaluation of the social status included evaluation of the lifestyle, bad habits, living in the family or in a social institution.

Statistical significance of differences was evaluated using Fisher's test and U-test. Selected parameters given in the results of studies were denoted as follows: Me – median, Q_1 – lower quartile; Q_3 – upper quartile, p – value of statistical significance of differences. The critical level of significance was taken to be 5% ($p \leq 0.05$).

To determine strength and reliability of correlation between parameters, Spearman rank-correlation test (r) was used. Strength of correlation was evaluated qualitatively: with r from 0 to ± 0.3 – absent or weak; $\pm(0.31-0.5)$ – moderate; $\pm(0.51-0.7)$ – medium; $>\pm 0.71$ – strong. Since the correlation coefficient was calculated on the finite sampling, it may deviate from its general value, and it was necessary to test significance of the correlation coefficient which was done using t-test. In all the given cases the data did not contradict the hypothesis of dependence of random variables; absolute values of t-test exceeded the critical value of criterion ($t_{cr.\alpha}$) given in the table of t-distribution.

Results and Discussion

At the first stage, the levels of the trait anxiety (TA) and state anxiety (SA) were evaluated. The initial measurement of anxiety is important since it in many respects determines behavior of the individual and success of adaptation to studying conditions. Trait anxiety is understood as a stable individual characteristics that reflects predisposition of an individual to perception of a wide spectrum of reality situations as threatening ones,

with responding to each of them with a certain reaction. Subjective anxiety is an emotional reaction to stressful situation that can be of different intensity and dynamic in time.

The results of evaluation of the average values of anxiety of students (Me [$Q_1; Q_3$]) showed low level of state anxiety (25.2 [23.9; 26.5] points) and moderate level of trait anxiety (41.4 [29.2; 53.6] points).

Of practical interest was a study of distribution of anxiety levels among the students. On the whole, low SA (<30 points) was found in 76.2% of the examined student which indicated a depressive, are active condition with a low level of studying motivation. Moderate SA (33-44 points) was determined in 23.8% of students. More than half the students (51.4%) had a high level of TA (52 [50.6; 53.4] points). This tendency was interpreted as *inclination to psycho-emotional frustration*. As a result, more than half the students were under risk of *developing vasodilatation in stressful conditions*. Correlation analysis permitted to establish a moderate negative relationship between SA and TA parameters of students.

In the opinion of M.A. Baikova and A.V. Merivov, the factor that influences personal and psychological peculiarities of adolescents is family disadvantages [9]. In the examined adolescents, the social factors and the lifestyle were assessed. It was found that before entry to a professional educational institution, 16.6% of adolescents were brought up in social institutions, and 83.4% – in families. Here, 63.7% of them indicated urban area as a permanent place of residence, 33.3% indicated rural area. At the moment of study, 28.3% of respondents were living in families, 71.6% – in the hostel of a professional educational boarding school. Correlation analysis of the data showed lower levels of TA in adolescents living in the hostel ($r = -0.16$; $p < 0.05$).

The lifestyle of adolescents depends on how rationally the daily time budget is distributed. A considerable part of the time should be spent on the nighttime sleep. The average value of the nighttime sleep was 7.6 [7.2; 8] hours (Me [$Q_1; Q_3$]). Duration of sleep

less than 7 hours was indicated by 30.8% of students (24.4% of them with high values of TA and 47.0% with low TA); duration of sleep more than 8 hours was indicated by 17.6 and 20.7%, respectively. With age of the examined adolescents, the duration of sleep decreased. Thus, maximal duration of sleep was found in the group of 15-year-old adolescents living in the hostel (8.2 [7.9; 8.5] hours) and having moderate SA and low TA, the minimal one – among 17-18-year-old adolescents living at home (6.9 [6.7; 7.1] hours, $p < 0.05$) and having high TA.

A chronic deficit of sleep is known to impair the functional condition of the cerebral cortex and to be the basis for initiation of neuroses, vegetovascular dystonia, and also to reduce the mental and physical working capacity. Thus, the work of V.V. Ruzhenkova showed that deficit of sleep, severe fatigue and stress condition favor the phenomenon of depersonalization which is referred both to disorders of consciousness, and to a complex of psychological protections against an acute emotional stress requiring therapeutic correction [10].

Analysis of distribution of the time of day showed that the leisure time of adolescents with moderate SA and low TA, could be considered more organized as compared to leisure time of adolescents with low SA and high TA. Most students with health limitations (59.1%) attended elective classes conducted at the secondary professional education institution in the out-of-lesson hours. Here, among those who attended these classes, the share of adolescents with moderate SA and low TA was 4.4 times that of adolescents with high TA.

Analysis of the results of questioning of adolescents did not show a high popularity of use of the Internet (49.1%). However, the average duration (Me [Q₁;Q₃]) of use of the Internet was higher in adolescents with high TA (3.2 [2.8; 3.6] hours a day) than in those with low TA (1.6 [1.4; 1.8] hours a day ($p < 0.05$)). Distribution of time spent on watching TV (Me [Q₁;Q₃]) was similar – 1.5 [0.9; 2.1] and 2.3 [2.1; 2.5] hours, respectively ($p < 0.05$)).

The carried out correlation analysis of the obtained data permitted to identify a moderate relationship between the fact of living in the hostel of the institution ($r = -0.56$, $p = 0.031$), duration of the night sleep ($r = -0.61$, $p = 0.028$), organization of passive rest ($r = -0.52$, $p = 0.04$) and the levels of situation anxiety.

Analysis of the results of Fagerstrom test (assessment of nicotine addiction) showed that 94.2% of boys and 91.5% of girls smoked tobacco, with different extent of nicotine addiction in 96.6% of boys and 93.3% of girls. According to the results of questioning, all smoking adolescents indicated early start of smoking (under 18 years of age), of them 24.5% indicated the age 13-15 years, 39.3% – 15-16 years, 36.2% – 16-18 years. The average age (Me [Q₁;Q₃]) of the beginning of smoking was 15.2 [14.3; 16.1] years.

A weak direct correlation relationship was established between the factor of smoking and the level of anxiety ($r = 0.18$, $p = 0.034$). Adolescents smoking more than 10 cigarettes a day, had high levels of TA.

A widespread form of deviant behavior is use of alcohol. Adolescents taking alcohol, were characterized by lower academic performance, conflictual relations with surrounding persons, high level of neuroticism, progressing spread of addictive behavior [11]. The results of study of use of strong drinks among the students showed that 61.2% of adolescents used some strong drinks in their life. Gender analysis showed that among adolescents who used alcohol at least once in life, there were 6.2% more girls than boys ($p = 0.048$).

Research of I.S. Lukyantseva, et al. identified a high level of comorbidity of addictive behavior and alcohol dependence with mental disorders that determined necessity for use of methods of aversive therapy to correct the existing dependences and prevent their formation [12]. Individuals of male gender who grew without parental care, more often (by 5%) exhibited addictive behavior. Adolescents with addictive behavior more than those without addictive behavior and dependences, were dissatisfied with their position in

society ($p < 0.02$), material status ($p < 0.04$) and the lifestyle in general ($p < 0.03$) [5].

Conclusion

The results of the conducted research showed the existence of the probability for the mutual influence of the social factors and the lifestyle on the levels of anxiety of adolescents with health limitations. A moderate correlation relationship was established between the fact of living in the hostels of the institution ($r = -0.56$, $p = 0.031$), duration of night sleep ($r = -0.61$, $p = 0.028$), organization of passive rest ($r = -0.52$, $p = 0.04$) and levels of state anxiety. Students watching TV broadcasts and using the Internet for more than two hours a day, showed a higher level of trait anxiety. On the contrary, adolescents attending elective classes and practicing physical culture and sports at the educational institu-

tion, had a moderate level of state and trait anxiety.

Thus, a study of socio-hygienic factors and the lifestyle of adolescents with health limitations permitted to identify the priority risk factors to justify programs for prophylaxis of development of desadaptation phenomena, the inclination to which was determined by high level of trait and low level of state anxiety. These risk factors are a factor of family disadvantages (each sixth adolescents was brought up in a social institution), spread of bad habits (96.6% of boys and 93.3% of girls had some extent of nicotine dependence, and 61.2% used alcoholic drinks in life); reduction of the duration of night sleep (in 30.8% of cases); low physical activity (only 18.9% of students attended additional classes on physical culture and sports).

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