13. Katrushova L, Yalanska S, Rudenko L, Katrushov O. Peculiarities of the process of psychological adaptation of foreign students of Ukrainian higher education institutions of medical profile, role of emotional intelligence in the socialization process. Wiadomości Lekarskie. 2019; 72(10):1930–1934.
14. Koopman C, Classen C, Spiegl D. Predictors of posttraumatic stress symptoms among survivors of the Oakland/Berkeley, Calif., firestorm. Amer. J. Psychiat. 1994; 154(6):888–894. doi: 10.1176/ajp.151.6.888.
15. Savchenko LV, Kaidashev IP. Individual approach to the treatment of obese copd patients can reduce anthropometric indicators, the level of systemic inflammation and improve the quality of life. Wiadomości Lekarskie. 2018; 71(3):451–459.

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AWARENESS OF THE THREAT TO THE HEALTH OF BEHAVIORAL RISK FACTORS FOR NONCOMMUNICABLE DISEASES BY FUTURE TEACHERS

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Recently, worsening of youth's health, taking into account the vulnerability of growing and developing organism to the influence of risk factors for chronic noncommunicable diseases has been of a significant concern. The purpose of research was to determine students' awareness of behavioral risk factors for the most threatening pathology of today and the role of a healthy lifestyle as a basis for preventing development of noncommunicable diseases. In order to achieve this goal 216 students of Sumy State Pedagogical University named after A. S. Makarenko were interviewed. A specially designed questionnaire was used. A high level of students' knowledge and awareness of the main factors for noncommunicable diseases development was established. However, 16.3 % of students do not realize the importance of rational nutrition, 24.2 % – the optimal level of physical activity, 26.9 % – the danger of drinking alcoholic beverages; 42.8 % of youth regularly drink alcoholic, low-alcoholic beverages and beer, 26.5 % of students are unaware of the dangers of smoking. 11.6 % of surveyed have excess body weight, with 25.5 % of overweight among boys and 7.7 % – among girls. The priority of ways of obtaining information on risk factors of chronic noncommunicable diseases by youth was established.

Key words: student youth, risk factors, noncommunicable diseases, lifestyle.

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УСВІДОМЛЕННЯ МАЙБУТНІМИ ПЕДАГОГАМИ ЗАГРОЗИ ДЛЯ ЗДОРОВ'Я ПОВЕДІНКОВИХ ФАКТОРІВ РИЗИКУ НЕІНФЕКЦІЙНИХ ЗАХВОРЮВАНЬ

Останнім часом суттєве занепокоєння викликає погіршення стану здоров'я молоді, враховуючи вразливість організму, що росте і розвивається, до дії факторів ризику розвитку хронічних неінфекційних захворювань. Метою наукового дослідження було визначити обізнаність студентів щодо поведінкових факторів ризику розвитку найбільш загрозливої патології сьогодення та ролі здорового способу життя як основи запобігання розвитку неінфекційних захворювань. Для досягнення мети було опитано 216 студентів Сумського державного педагогічного університету імені А.С. Макаренка. Була використана спеціально розроблена анкета. Встановлено високий рівень обізнаності та усвідомлення студентами основних чинників розвитку неінфекційних захворювань. Проте 16,3 % студентів не усвідомлюють важливість раціонального харчування, 24,2 % – оптимального рівня фізичної активності, 26,9 % – небезпеку вживання алкогольних напоїв, а 42,8 % молоді регулярно вживають алкогольні, слабоалкогольні напої та пиво, 26,5 % студентів не обізнані про шкоду тютюнопаління. Надлишкову масу тіла мають 11,6 % осіб, причому серед юнаків надлишкова маса тіла зареєстрована у 25,5 %, серед дівчат – у 7,7 % оглянутих. Встановлено пріоритетність шляхів отримання інформації молоддю про фактори ризику хронічних неінфекційних захворювань.

Ключові слова: студентська молодь, фактори ризику, хронічні неінфекційні захворювання, спосіб життя.

The work is a fragment of the research projects "Comprehensive study of the functional status, adaptive capacity of the organism and the risk of developing diseases in different population groups" (state registration number 0120U100799).

In recent years, the attention of scientists and society in general to the problem of forming a healthy lifestyle has significantly increased, which is connected with the steady deterioration of the health status of different segments of the population, in particular, student youth [2]. Taking into account the above-mentioned, it is crucial to shaping the orientation of future teachers to preserve and improve their health. Solving the problem of preserving students' health requires the study of their awareness of the role of various factors for the development of noncommunicable diseases (NCDs) and their health threats [4].

The massive burden of chronic noncommunicable diseases, which has spread to all countries in the modern world and tends to increase, has a negative impact on the individual's health and public health of society as a whole. The social and economic burden is caused by four diseases that are the focus of WHO Member States: cardiovascular disease (CVD), diabetes, cancer and chronic respiratory diseases. They lead to long-term incapacity, reduced quality of life and well-being of families, and a huge burden on the healthcare system [5, 6, 8].

The current public health problem in Ukraine is a rapid and steady growth of chronic noncommunicable diseases caused by malnutrition, low physical activity, increased psycho-emotional load, negative impact of the polluted environment and bad habits. According to the World Bank, only 81 % of Ukrainians, who turned 15 in 2017, will reach the age of 60 [8].

Of particular concern is worsening of youth's health, taking into account the vulnerability of growing and developing organism to the influence of risk factors for chronic noncommunicable diseases development [14].

According to the State Statistics Office of Ukraine, more than 1.5 million students are enrolled in higher education institutions in our country [5]. Student youth is a specific social group that has its own features. First of all, from a social point of view, students are united by occupation-educational activity. It is also possible to distinguish such psychological features of student youth as high social activity, formation of professional qualities and outlook, change of value system, high motivation to study and acquiring new knowledge. That is why student youth is the optimal target audience for implementation of health-saving technologies in educational settings [1, 4, 10].

Taking into account the above mentioned, in terms of maintaining public health and obtaining significant results in the prevention of noncommunicable diseases, ongoing epidemiological studies aimed at determining the level of youth's awareness of healthy lifestyles and identifying prevalence of risk factors amongst student youth and NCDs risk factors are necessary to achieve the expected results.

The purpose of the study was to determine students' awareness of behavioral risk factors for the most threatening pathology of today and the role of healthy lifestyles as a basis for preventing development of noncommunicable diseases.

Materials and methods. 216 students of Sumy State Pedagogical University named after A. S. Makarenko (168 girls and 48 boys) participated in the study. Among the survey participants, 35.8 % (77/216) are first-year students and 64.2 % (139/216) are first-year master's students.

The research was conducted at the Sumy State Pedagogical University named after A. S. Makarenko using a questionnaire-based survey method. Awareness of a healthy lifestyle and NCD development factors was studied according to a specially designed questionnaire, based on an international methodology for life quality assessment. The questionnaire blocks included the following questions: 1) general information about the respondent; 2) lifestyle and health; 3) possible risk factors for NCDs; 4) conditions of study and living; 5) presence of chronic noncommunicable diseases in the family; 6) main components of motivation for a healthy lifestyle. Anthropometric indicators (body mass (BM), body length (BL)) were calculated to determine the probable risk of overweight for the development of NCDs, with calculation of BMI as the ratio of BM in kilograms to the square of BL in meters. Interpretation of BMI values was performed by the following criteria: less than 18.50 – insufficient BM; 18.51–24.99 – optimal BM value; 25.0–29.99 – excess BM; more than 30.0 – obesity (National Institutes of Health (NIH), National Heart, Lung, and Blood Institute (NHLBI). The practical guide: identification, evaluation, and treatment of overweight and obesity in adults. Bethesda: National Institutes of Health. 2000).

Statistical processing was conducted by conventional methods of variational statistics using the Student's t-test and Pearson's χ^2. The differences were considered significant at $p<0.05$. The average sample values of the quantitative traits are given as M±m, where M is the mean sample, m is the mean error. Statistical analysis of the results of the study was performed using the programs STATISTICA v. 10.

The study was conducted in accordance with the principles of voluntariness, with the guarantee of protection of human rights and freedoms, inviolability of one's physical and mental integrity, with the principles of justice and equality, with prior detailed information of volunteers about the essence of the study, each subject of scientific research provided written consent for participation in the study and conducting diagnostic measures according to the World Medical Association Declaration of Helsinki (2005).

Results of the study and their discussion. The analysis of anthropometric data revealed that the average BMI values in the groups of girls and boys corresponded to the range of optimal values (20.65±0.24 kg/m^2 and 22.75±0.49 kg/m^2, respectively (t=4.08; $p<0.01$)). No significant differences were found in the

comparative analysis of BMI values in the groups of first year studensts (20.87±0.35 kg/m^2) and master's students (21.25±0.28 kg/m^2) (t=0.83; p>0.05).

BMI in 69.3 % of students (149/216) met the optimal values, while excess BM according to BMI values had 11.6 % (25/216) of students. It was found out that hypotrophy was more common among girls than among boys (21.4 % (36/168) and 10,6 % (5/48), respectively (χ^2=12.51, p<0.05)). BMI higher than normal was significantly more common among boys (25.5 % (12/48) compared to girls (7.74 % (12/168) (χ^2=12.51; p<0.05)). Probable differences among different courses according to BMI have not been identified.

Approximately 24.07% participants were overweight and obese. The mean of HPL in normal-weight people was better than that of obese ones. Participants did not pay much attention to their family's health-promoting behaviors. They also were exposed to occupational hazards, including psychological (47.2%), ergonomic (21.7%), physical (20.8%), and biological hazards (10.4%) [11].

The vast majority of students (83.7 %) among the respondents (180/216) are aware that one of the risk factors for developing noncommunicable diseases is poor diet. Among students with low awareness, girls prevailed (71.4 % (26/36)) compared to the boys group (28.6 % (11/36) (χ^2=0.95; p>0.05).

86,3 % (67/77) of first year students and 81.9 % (113/139) of final year students recognize the negative impact of poor nutrition on human health.

But knowledge often does not lead to their awareness of the threat for health of the specified factor and motivation to follow the rules of healthy eating. This is evidenced by the consumption of salt, sugar, sugary drinks and fats containing trans isomers of fatty acids.

Thus, out of 16.3 % (36/216) of respondents, unaware of rational nutrition, 28.6 % (10/36) of students use 25 grams or more of salt per day. At the same time, among 83.7 % (180/216) of aware students – 21.7 % (39/216) of the respondents also consume excess salt.

44.6 % (96/216) of students consume sweet carbonated beverages on a regular basis, sometimes – 36.3 % (78/216) of respondents. It is alarming that even among students, informed about the harmfulness of sweet sodas, 42.8 % (77/180) of respondents use them constantly, among those uninformed about the problem – 54.3 % (19/36) of students (χ^2=1.63; p>0.05).

The results of the studies show that 10.0 % (18/180) of aware and 8.6 % (3/36) of unaware students add more than 2 tablespoons of sugar to tea or coffee (χ^2=0.07; p>0.05).

To the question "Do you know what foods contain fatty acid trans isomers?" only 22.8 % (49/216) of the respondents answered "yes". Among boys and girls, many do not have information on the use of trans fats in the food industry (74.5 % (35/48) and 77.9 % (131/168), respectively (χ^2=0.25; p>0.05)). With age, awareness of the use of trans isomers of fatty acids is increasing, as evidenced by the smaller group of senior students (74.6 % (103/138)) who are not aware of this problem compared to freshmen (81.8 % (63/77)) (χ^2=1.45; p>0.05).

An analysis of student responses showed that 35.3 % (76/216) of the respondents consumed margarines and spreads without probable differences in the groups of boys and girls (38.3 % (18/48) and 34.5 % (58/168) respectively (χ^2=0.23; p>0.05).

77.7 % (167/216) of students have information about the health effects of deficiency in the diet of vitamins and minerals. Probably, that is why 68.2 % (146/216) of respondents consume fresh vegetables and fruit every day, with more girls adhering to a balanced diet (70.8 % (119/168)) than boys (58.7 % (27/48) (χ^2=2.45; p>0.05).

Analyzing well-known questions about signs of healthy lifestyles, students almost unanimously preferred optimum motor mode (93.6 % (212/216)). However, only 75.8 % (163/216) of the students surveyed know that low physical activity is a risk factor for chronic NCDs. Among them, 52.8 % (86/163) of the respondents have a physically active lifestyle, 42.3 % (69/163) of students cannot rate their physical activity as optimal, and 4.9 % (8/163) of the respondents do not consider it expedient to take into account their level of physical activity.

We believe it is natural that more freshmen (77.9 % (60/78)) are aware of the negative impact of the hypodynamic lifestyle on their health than seniors (74.6 % (103/138)), which indicates a positive impact of educational potential, awareness of vital values.

Achievement of commonly endorsed health behaviors is associated with lower BMI (especially sedentary and moderate-to-vigorous physical activity targets) and depressive symptoms score (especially sedentary and smoking targets). This provides further support of health behavior promotion to improve health outcomes [9].

The issue of involving young people in healthy lifestyles is especially relevant in higher education institutions of pedagogical orientation in the preparation of future teachers whose professional activity is aimed at spreading their knowledge and life priorities among the younger generation [1, 7].

Most of the students surveyed (73.2 % (157/216))) know that alcohol abuse is a risk factor for NCDs, but 26.9 % (58/216)) are not aware of this issue. Frequency of regular use of alcoholic, low-alcoholic beverages and beer by students in both groups differs. Thus, in the group of respondents who are aware of the risk of developing NCDs from alcohol abuse, 47.1 % (74/157)) use alcoholic beverages, in the group of students who do not recognize the risk of NCDs from alcohol consumption – 31.1 % (18/59) (χ^2=4.48; p<0.05).

The analysis of the obtained data shows that 70.2 % (33/48) of boys and 73.8 % (124/168) of girls (χ^2=0.24; p>0.05) have sufficient information about the risk of NCDs from drinking alcohol. However, the relevance of this risk decreases with age, as evidenced by the decrease in positive responses of students (77.9 % (60/78) of first-year students and 70.3 % (97/138) of master's students (χ^2=1.46; p>0.05).

Alarming is the fact that 42.6 % (20/48) of boys and 17.9 % (30/168) of girls drink alcohol regularly 1-2 times a week, 4.3 % (2/48) of boys and 4.2 % (7/168) of girls – 2-3 times a week, and 0.9 % (2/168) girls – more than three times a week.

There has been established a negative trend of increasing alcohol consumption with age (freshmen answered affirmatively in 38.9 % (30/78) cases, senior students – 44.9 % (62/138)) (χ^2=0.72; p>0.05).

Survey data indicate that the vast majority of students (73.5 % (158/216)) are aware of smoking as a factor in NCDs development, with no probable gender differences (70.2 % (33/48) of boys and 74.4 % (125/168) of girls (χ^2=0.33; p>0.05)). Similar to other bad habits, the importance of recognizing the negative impact on health of smoking decreases with age (77.9 % (60/78) – in freshmen and 71.0 % (90/138) – in master's students group).

Among the surveyed in the group of aware, 15.2 % (24/158) smoke (5.7 % (9/158) – daily and 9.5 % (15/158) – sometimes; in the group of unaware of NCDs risk smoke 7.02 % (4/57) of students, which casts doubt on the awareness of existing information in youth on tobacco harmfulness.

Among 17.1 % (8/48) of boys who smoke, 50 % (4/8) smoke 1 to 10 cigarettes daily, 25 % (2/8) smoke more than 10 cigarettes and 37.5 % of the total youth cohort (18/48) – have indicated that they smoke sometimes, and among the group of girls who smoke (11.9 % (20/168)), 60.0 % (12/20) smoke daily from 1 to 10 cigarettes, 5.0 % (1/20) - more than 20 cigarettes and also 7.7 % (13/168) of girls – sometimes smoke.

The survey showed that 11.6 % (26/216) of the university students had a neutral attitude to drug use, and 88.4 % (190/216) of the respondents expressed a negative attitude. With regard to students' own experiences of drug use, only 2.8 % (6/216) reported experiencing drug use, including 50 % (3/6) of boys and 50 % (3/6) of girls from their total quantity. At the same time, half of these respondents said that they had a negative attitude to drug use and half were indifferent. Thus, it should be noted that proportion of people with experience of drug use among university students is negligible, and most students show a negative attitude to drug use.

It is common knowledge that a healthy human body must have age- and gender-specific relative muscle and adipose tissue content. Hypodynamia leads to a reduction in energy expenditure, and excessive nutrition causes the accumulation of adipose tissue in the human body. This forms the risk factors for NCDs [12].

The assessment of the nutritional status of the adult population of Ukraine in current socioeconomic conditions showed an excess of energy value of dietary intakes in 38.4% of people. The increase in body mass index of rural population by 34.5% and urban population by 42.4% is noteworth [13].

In order to develop promising measures for preservation of student youth health in higher education institutions, it was considered appropriate to analyze ways in which young people could be informed about the risk factors of NCDs [3]. Most often, students pointed to the significant role of lectures, classes in the disciplines of the medical-biological unit during their studies at the university (75.4 % (162/216)), at the second place – participation of parents (68.8 % (148/216)), at the third – their own experience (64.7 % (139/216)), at the fourth – medical professionals during treatment, consultations (55.4 % (119/216)), at the fifth - mass media (41.9 % (90/216)).

Conclusions

1. A significant proportion of student youth demonstrate a high level of knowledge and awareness of risk factors for chronic noncommunicable diseases. However, 16.3 % (35/216) of students do not realize the importance of eating rationally, 24.2 % (52/216) – the optimal level of physical activity, 26.9 % (58/216) – the danger of drinking alcohol; 42.8 % (92/216) use alcoholic, low-alcoholic beverages and beer regularly, 26.5 % (57/216) of students are unaware of the dangers of smoking.

2. Potential increases in risk behaviors among girls should be closely monitored, which may affect youth's reproductive potential.

3. The effectiveness of preventive-educational work in higher education institutions by using the disciplines of medical-biological unit, organization of extracurricular work, media support, adherence to the regime of good nutrition and accessibility of sports facilities to ensure the possibility of maintaining the optimum level of physical activity is proved.

4. Further refinement and improvement of the curricula in the disciplines of the medical-biological unit are needed to improve their content with information on the main behavioral risk factors for NCD development in terms of preserving further health. Raising knowledge and awareness of the risk of developing NCDs, enhancing the motivation of student youth to lead healthy lifestyles and reducing risky behavior are the main expected results of the implementation of health-saving technologies.

The prospects of further research are seen in development of criteria for evaluating the effectiveness of health-saving programs for the formation of healthy lifestyle skills, taking into account age, gender differences, trends in behavioral risk factors that change over time in students of different courses.

References

1. Afanaseva VA, Ohynskaya MK, Ohneva LH. Sovremennye sostavlyayushchye zdorovoho obraza zhyzny studentov medytsynskykh vuzov Khyst. 2017. 19. : 409. [in Ukranian]

2. Hlobalnyy plan deystvyy po profylaktyke neynfektsyonnykh zabolevanyy y borbe s nymy na 2013–2020 hh. VOZ. Zheneva, 2014. 114 p. [in Russian]

3. Gulich MP, Petrenko OD, Lyubarska LS, Koblyanska AV, Kharchenko OO, Yashchenko OV. Alhorytm vprovadzhennya zdorovyazberihayuchykh osvitnikh tekhnolohiy v navchalnyy protses vyshchykh navchalnykh zakladiv Ukrayiny. Informatsiynyy lyst. Kyiv, Ukrmedpatentinform. 2019. [in Ukranian]

4. Gulich MP, Petrenko OD, Lyubarska LS. Kompetenciyi, nabuti u shkilnomu vici, ta yihnya rol u formuvanni harchovoyi povedinki molodi. Dovkillya ta zdorov'ya. 2021; 2 (99): 22–27. doi.org/10.32402/dovkil2021.02.022 [in Ukranian]

5. Doklad o sostoyanyy zdravookhranenyya v Evrope 2015. Tselevye oryentyry y bolee shyrokaya perspektyva – novye rubezhy v rabote s faktycheskymy dannymy VOZ. [in Russian]

6. Dostyzhenye devyaty hlobalnykh tseley po NYZ, obshchaya otvet·stvennost: Doklad o sytuatsyy v oblasty neynfektsyonnykh zabolevanyy v myre, 2014. VOZ. 16 p. [in Russian]

7. Zynovev NA, Zynovev AA, Kupreev MV, Svyatchenko PB. Ynformyrovannost studentov tekhnycheskoho vuza o parametrakh zdorovoho obraza zhyzny. Uchenye zapysky unyversyteta Leshafta. 2015. 11 (129): 42–47. https://doi.org/10.5930/issn.1994-4683.2015.11.129.p103-107 [in Russian]

8. Kachestvennye yndykatory dlya monytorynha dostyzhenyya tselevykh oryentyrov polytyky Zdorove-2020. VOZ. Kopenhahen, 2014. 50 p. [in Russian]

9. Duncan GE, Avery AR, Tsang S, Watson NF, Williams BD, Turkheimer E. The pillars of health: influence of multiple lifestyle behaviors on body mass index and depressive symptoms in adult twins. *BMC Public Health*, 2022. 22: 1487. https://doi.org/10.1186/s12889-022-13901-7

10. Evrim Çelebi, Cemal Gündoğdu, Aysel Kızılkaya Determination of Healthy Lifestyle Behaviors of High School Students. Universal Journal of Educational Research. 2017.5(8): 1279–1287. https://doi.org/10.13189/ujer.2017.050801

11. Hossein Abbasi N, Aghaamiri M. Relationship Between Health-Promoting Lifestyle and Body Mass Index in Male Nurses Based on Demographic Variables. Am J Mens Health. 2020;14(6):1557988320966519. https://doi.org/10.1177/1557988320966519

12. Nevoit GV, Potiazhenko MM, Mintser OP. Systemic dependences of changes in body composition with the progression of non-communicable diseases. World of Medicine and Biology. 2021; 3 (77): 132–137. doi.org/10.26724/2079-8334-2021-3-77-132-137

13. Vesnina LE, Boriak KhR, Sokolenko VM. Assesment of the dietary energy intake of young people with normal weight and overweight. World of Medicine and Biology. 2020;3 (73): 27–32. doi.org/10.26724/2079-8334-2020-3-73-27-32

14. Yakymenko I, Tsybulin O, Shapovalov Ye. Healthy lifestyle behaviors among university students in Ukraine. Health and environment. 2017; 1 :41–45. DOI: 10.32402/dovkil2017.01.041

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