Chapter 3

PROMOTION OF THE HEALTH OF PEDAGOGICAL WORKERS AT THE STAGE OF PROFESSIONAL TRAINING

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Introduction

The structure of the prevalence of diseases in Ukraine is characterized by the predominance of diseases of the circulatory system (31%) in comparison with diseases of the respiratory system (19.8%), digestive organs (9.9%), genitourinary system (5.5%) and musculoskeletal systems (5.4%)[1].

It is known that the cause of this situation is the spread of risk factors of non-infectious diseases among the population. The leading risk factors for health are high blood pressure, smoking, alcohol abuse, high cholesterol in the blood, excess body weight, insufficient physical activity, unsafe sex. Unfortunately, among the youth of Ukraine, 26% are not physically active, 27% drink alcoholic beverages, 10% have tried drugs, and 27% smoke. According to a similar study of Turkish girls by Ulken Tunga Babaoglu, Sibel Cevizci, Gülcan Demir Ozdenk, it was established that 7.5% of them smoked, 2.4% drank alcohol[2]. Students in Brazil use alcohol in 68.8% of cases and tobacco in 40.7%[3].

Today, seventeen Sustainable Development Goals of the UN until 2030 have been identified, which are faced by 193 countries, one of them is ensuring the ability of the population to lead a healthy lifestyle and promoting the well-being of all at any age. This goal especially focuses on the prevention of non-communicable diseases and opening up the possibilities of information and educational programs to awareness of the need to lead a healthy lifestyle among young people, based on knowledge about their own health and health risk factors.

[1] Щорічний звіт про стан здоров'я населення, санітарно-епідемічну ситуацію та результати діяльності системи охорони здоров'я України. 2015 рік / за матеріалами редакції Шафрановського В. В.; МОЗ України, ДУ «Український інститут соціальних досліджень МОЗ України». К., 2016. 452 с.

[2] Carolina da Franca, Viviane Colares. Comparative study of health behavior among college students at the start and end of their courses. *Rev. Saúde Pública*. 2008. vol.42 no.3. P. 55-56.

[3] Babaoglu U.T., Cevizci S., Ozdenk G. D. Evaluaton of Healthy Lifestyle Behaviors of Female Students in A Public Accommodation Center From Kırsehir, Turkey. *Journal of the Academy of Medical Sciences of Bosnia & Herzegovina*. 2014. 26(6). P. 372–377.

In accordance with the fifteen professional competencies of the Professional Standard of a teacher of a general secondary education institution, health-preserving competence has a significant role in health promotion, as it includes not only preventive and educational work with students, but also skills to preserve personal physical and mental health under time of professional activity[4] [5] [6]. Teaching teachers to realize such professional competence takes place at the stage of professional training in educational institutions [7].

More than 75% of deaths in the world are caused by non-communicable diseases (NCDs). Such diseases include cardiovascular diseases, diseases of the bronchopulmonary system, endocrine and oncological diseases[8]. The global risk factors for mortality from NCDs include insufficient physical activity, excess body weight and obesity, tobacco and alcohol use, elevated blood pressure, cholesterol, and blood sugar levels[9] [10].

The reasons for the emergence of such risk factors depend not only on socio-economic conditions, environmental conditions, but also on individual

[4] Про затвердження професійного стандарту за професіями «Вчитель початкових класів закладу загальної середньої освіти», «Вчитель закладу загальної середньої освіти», «Вчитель з початкової освіти (з дипломом молодшого спеціаліста)»: наказ М-ва розвитку економіки, торгівлі та сільського господарства України від 23 грудня 2020 р. № 2736-20. URL: https://zakon.rada.gov.ua/rada/show/v2736915-20#Text

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[10] Global health risks: mortality and burden of disease attributable to selected major risks. Geneva, World Health Organization. 2009. 62 p. URL :https://www.who.int/publications/i/item/9789241563871

behavior[11] [12]. Therefore, health promotion and NCD prevention should include monitoring factors depending on the target group. Conducted studies of awareness of behavioral risk factors among pedagogical workers at the stage of professional training in 2018 indicate the presence of risk factors for the occurrence of NCDs[13] . A high level of awareness has been established among student youth about the main factors in the development of non-infectious diseases – improper nutrition, low physical activity, smoking and alcohol abuse[14] .

Recent studies of the subjective assessment of the state of health of pedagogical workers at the stage of professional activity identified the leading complaints, which included: headache in the morning and after nervous-emotional stress, palpitations, sleep disturbances, increased blood pressure[15] . The study of risk factors for NCDs among teaching staff includes isolated cases. In particular, a 13.96% reduction in daily energy expenditure for motor activity during distance learning was established compared to the traditional form of work[16].

The following risk factors have been identified among teachers of higher education institutions in India: high blood pressure, obesity and low physical activity. To these factors among teachers in Nepal are added smoking and alcohol consumption, a low level of consumption of fruits and vegetables,

[11] Латіна Г.О. Поведінкові фактори ризику хронічних неінфекційних захворювань у молоді. *Сучасні проблеми логопедії та реабілітації*: матеріали VII Всеукр. заочної наук.-практ. конф., 15 лют. 2018 р. Суми: ФОП Цьома С.П., 2017 С. 146–148. URL:https://repository.sspu.edu.ua/server/api/core/bitstreams/4c0ca6c3-53a7-4c22-98ab-00b4d111b641/content

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[16] Sangita S. Assessment of Behavioural Risk Factors of Non-Communicable Diseases among Higher Secondary School Teachers of Kathmandu. International Journal of Educational Science and Research. 2017. 7. 269-274. URL: https://www.researchgate.net/publication/346968020_Assessment_of_Behavioural_Risk_Factors_of_Non-Communicable_Diseases_among_Higher_Secondary_School_Teachers_of_Kathmandu

increased[17] . The conducted studies require the application of monitoring of NCD factors among teaching staff at the stage of PT for the development of programs to improve medical literacy and ensure the health-saving competence of the Professional Standard.

The purpose of the study is to assess the risk factors of non-communicable diseases among teachers at the stage of professional training.

Materials and methods. To achieve the goal, we conducted a survey based on a specially developed questionnaire, which included questions about behavioral risk factors, anthropometric indicators, hemodynamic indicators (heart rate, blood pressure. The survey was conducted using the Google.forms cloud environment. Physical development was assessed by body mass index according to the standard methodology. Physical activity was determined according to WHO recommendations and included the determination of the basic metabolic rate, the physical activity factor, and the assessment of the following NCD factors: overweight and obesity, low physical activity, and alcohol consumption, high blood pressure, low consumption of fruits and vegetables.

To achieve the set goal, we used the "Methodology of express diagnosis of psycho-emotional stress" by O.S. Kopiny, E.A. Suslova, E.V. Zaykina (1995). The questionnaire includes self-assessment of health, L. Reeder's scale of psychosocial stress, scale of satisfaction with life in general, scale of satisfaction with living conditions, scale of satisfaction of basic life needs, scale of socio-demographic indicators.

L. Reeder's scale of psychosocial stress allows to identify persons with high (men – 2-3 points, women – 2.18-3 points), medium (men – 1-1.99 points, women – 1.18-2.17 points) and a low (men – 0-0.99 points, women – 0-1.17 points) level of psychosocial stress.

Indicators of the life satisfaction scale in general vary between -15 and +15 points. At the same time, the result of the calculation of the test from -15 to -5 points is an indicator of a low level, from -4 to +4 points – an average level, and from +5 to +15 points – a high level of life satisfaction in general.

The scale of satisfaction with living conditions also has three evaluation levels: up to 32 points – low level, 33-46 points – medium level, more than 47 – high level of satisfaction with living conditions.

The results of the scale of satisfaction of basic life needs, which are up to 30 points, indicate a low level of satisfaction of life needs. An indicator from 31 to 41 points indicates an average level, while a result above 42 points corresponds to a high level of satisfaction of life needs.

[17] STEPS Survey Reveals High Prevalence of Noncommunicable Disease Risk Factors in Ukraine. Copenhagen : World Health Organization; 2020 : 14 p. URL: https://www.who.int/ukraine/uk/publications/m/item/risk-factors-for-noncommunicable-diseases-in-ukraine-in-2019-(2020)

To achieve the goal set in the work, a total indicator of life satisfaction was calculated, which included points on the scale of satisfaction with life in general, the scale of satisfaction with living conditions and the scale of satisfaction with basic life needs. As a result of the calculations, three levels of the life satisfaction indicator were obtained, namely: low (83 points and below), medium (84-96 points) and high (above 97 points).

To assess life satisfaction, 108 pedagogical workers at the stage of professional training aged 19-22 in Sumy were surveyed in 2011. Of them, 61 are men and 47 are women. In order to compare the obtained research results, we examined 78 pedagogical workers in the educational field of physical culture and 30 pedagogical workers in the educational field of pedagogy and practical psychology.

In 2017, 73 teaching staff aged 17-25 at the stage of professional training in the city of Sumy were surveyed in order to identify awareness of the leading health risk factors. Using the questionnaire method, the awareness of PPs regarding the leading health risk factors was revealed: high blood pressure, smoking, alcohol abuse, high blood cholesterol, excess body weight, insufficient physical activity.

In order to assess the risk factors of non-infectious diseases among teachers at the stage of professional training during the martial law, 178 teachers at the stage of professional training aged 18-52 were surveyed in the city of Sumy during October 2022 (88 people) and 2023 (90 people).

The work was carried out in accordance with the research program of the Sumy State Pedagogical University named after A.S. Makarenko of the Department of Public Health and Medical and Biological Foundations of Physical Education on the topic "Comprehensive study of the functional state, adaptive capabilities of the organism and the risk of developing diseases in different population groups » (state registration number 0120U100799).

The research was conducted in compliance with the principles of voluntariness, with a guarantee of protection of human rights and freedoms, inviolability of his physical and mental integrity, in compliance with the principles of justice and equality, with preliminary detailed information of the volunteers about the essence of the research, written consent for participation was obtained from each subject of the scientific research in research and for carrying out diagnostic measures in accordance with the "Helsinki Declaration of the World Medical Association" (2005).

The obtained data were subject to mathematical and statistical processing using the "Statistica 8.0" application program.

1. Peculiarities of psychosocial stress of pedagogical workers of various specialties at the stage of professional training

The analysis of the results of the self-assessment of the health of pedagogical workers shows the preference in the choice of positive evaluations of "good" (61.1±0.8%, $p<0.05$) and "excellent" (11.1±0.3%) by pedagogical workers, which according to O. S. Kopiny, E. A. Suslova, E. V. Zaykina testifies to the reduced level of stress in the lives of pedagogical workers. At the same time, it should be noted that the positive attitude towards one's health among PEs is formed at the expense of men, since among the pedagogical workers with a rating of "good" 59.1±0.7% are men and 40.9±0.6% are women Also, 75±0.8% of men chose the grade "excellent" and only 25±0.5% – women.

Negative assessment of one's own level of health by teaching staff with a choice of gradations of "very bad" (1.85±0.1%), "bad" (0.9±0.1%) and "satisfactory" (25±0.5%) established in 27.9% of respondents. It should be noted that among the respondents, the item "very bad" was chosen only by men (100%), while "bad" was chosen only by women (100%). 59.3±0.7% of women and 40.7±0.6% of men consider their health satisfactory.

The comparative characteristics of self-health assessment among pedagogical workers of various specialties indicates a lower level of stress in future physical education specialists than in social pedagogues. Such a conclusion allows us to make a frequency distribution of the data, in which 78.8±0.9% ($p<0.05$) of pedagogical workers in the field of physical education chose the health assessment "good" compared to 21.2±0.4% of PE educational field of pedagogy and practical psychology. However, pedagogical workers in the field of physical culture (55.6±0.7%, $p<0.05$) probably have higher values for the rating of "satisfactory" compared to pedagogical workers in the field of pedagogy and practical psychology (44.4±0.6%), which is due to the sexual characteristics of the respondents.

The age-specific characteristics of the distribution of self-rated health indicate an increase with age pedagogical workers with a positive health rating. There is a decrease of 3.6% in the specific weight of "satisfactory" grades, from 26.7±0.5% in 19-year-olds to 23.1±0.5% in 22-year-olds, and an increase in the share of "excellent" grades in the absence of 19-year-olds and 15.4±0.4% at 22 years old.

In order to determine the sources of psychosocial stress among pedagogical workers, we assessed the prevalence of psychosocial stress levels among respondents. The analysis of the obtained results indicates a probable advantage among pedagogical workers of an average level of psychosocial stress (51.9±0.7%, $p<0.05$), which is formed primarily at the expense of male pedagogical workers in the educational field of physical culture. As can be seen from the table, the specific weight of the indicator of psychosocial stress

of men is 10.8% higher than the indicator of women, pedagogical workers of the educational field of physical culture is 39.2% higher than the indicator of pedagogical workers in the field of pedagogy and practical psychology. Correlation analysis confirms the established data, which indicates the connection of the level of psychosocial stress with gender ($r=0.34$, $p<0.001$) and educational unit ($r=0.41$, $p<0.001$).

Table 1

Levels of factors of psychosocial stress of pedagogical workers by gender and specialization (%)

Scale	Levels	In general *n*=108	Sex		Education industry	
			men *n*=61	Women *n*=47	Physical Education *n*=78	Pedagogy and Psychology *n*=30
Psychosocial stress	low, *n*=50	46,3±0,7	56±0,7*	44±0,6	74±0,8	26±0,5
	average, *n*=56	51,9±0,7*	55,4±0,7*	44,6±0,6	69,6±0,8*	30,4±0,5
	high, *n*=2	1,9±0,1	100	0	100	0
Satisfaction with life	low, *n*=1	0,93±0,1	100	0	100	0
	average, *n*=42	38,9±0,6	57,1±0,7*	42,9±0,6	64,3±0,8*	35,7±0,6
	high, *n*=65	60,2±0,7*	55,4±0,7*	44,6±0,6	76,9±0,8*	23,1±0,5
Satisfaction with living conditions	low, *n*=2	1,9±0,1	0	100	0	100
	average, *n*=68	62,9±0,8*	63,2±0,8*	36,8±0,6	70,6±0,8*	29,4±0,5
	high, *n*=38	35,2±0,6	47,4±0,7	52,6±0,7	78,9±0,8*	21,1±0,4
Satisfaction of basic life needs	low, *n*=0	-	-	-	-	-
	average, *n*=51	47,2±0,7	60,8±0,8*	39,2±0,6	68,6±0,8*	31,4±0,5
	high, *n*=57	52,8±0,7*	52,6±0,7*	47,4±0,7	75,4±0,8*	24,6±0,4

*Notes: * – $p<0.05$ – probable difference between indicators.*

In addition, a comparison of the average values of the psychosocial stress indicator shows that pedagogical workers with an excellent assessment of their own health (0.9±0.1 points, $p<0.001$) experience psychosocial stress 1.8 times less compared to pedagogical workers with an unsatisfactory assessment (1.61±0.1 points). Correlation analysis data indicate a close relationship between the level of self-assessment of health and the level of psychosocial stress ($r=0.50$, $p<0.001$).

The age-related features of the spread of psychosocial stress consist in the maximum values of this indicator in pedagogical workers 20 (1.19±0.1 points, $p<0.05$) and 21 years old (1.13±0.2 points, $p<0.01$) compared with pedagogical workers values of 19 years (1.56±0.2 points), which requires clarification of the reason for such differences.

It should be noted that the surveyed pedagogical workers have a high level of life satisfaction, while men are more than women, and students of the

educational field of physical culture are more than pedagogical workers of the educational field of pedagogy and practical psychology. The same trend is observed among pedagogical workers who have an average level of life satisfaction (Table 1). The average score of the life satisfaction indicator is 4.8±0.4 points and corresponds to the border between average and high levels.

The analysis of the age characteristics of the distribution of the levels of the life satisfaction indicator shows that life satisfaction is probably higher in the 20-21-year-old pedagogical workers. Thus, the specific weight of 19-year-old pedagogical workers in the share of a high level of life satisfaction is 12.3±0.3%, and for 22-year-olds – 12.3±0.3%, while for 20-year-olds – 41.5±0, 6% and 21-year-olds – 33.9±0.6%. The established data indicate the possibility of the influence of the feeling of satisfaction with life on the level of psychosocial stress among pedagogical workers .

Since the level of health is related to the impact of external and internal stress on it, we compared the average values of pedagogical workers groups with the assessment of one's own health as "satisfactory", "good", "excellent". An increase in the score of the life satisfaction indicator with an increase in self-esteem of health was established. Thus, pedagogical workers s with a satisfactory level of health (3.6±0.7 points, $p<0.05$) are 1.5 points less satisfied with their own lives than pedagogical workers s with a good level (5.3±0.5 points) and by 3 points less than pedagogical workers with an excellent health assessment (6.7±1.0 points, $p<0.05$).

The level of life satisfaction in general in pedagogical workers with a low level of psychosocial stress (5.9±0.5 points) is 1.8 points higher than the indicator of pedagogical workers with an average level of psychosocial stress (4.1±0.5 points, $p<0, 01$), which indicates the connection between the quality of life of pedagogical workers and the level of their psychosocial stress. This fact is confirmed by the correlation analysis, so the increase in the level of life satisfaction of the pedagogical workers leads to a decrease in the level of psychosocial stress ($r=-0.49$, $p<0.001$).

Satisfaction with living conditions in pedagogical workers is at an average level (62.9±0.8%, $p<0.05$), while men are more satisfied than women, pedagogical workers in the educational field of physical culture is more than pedagogical workers in the educational field of pedagogy and practical psychology (table .1). The average score of the indicator of satisfaction with living conditions is 44.9±0.5 points, which corresponds to the average level and indicates satisfactory living conditions of the pedagogical workers.

At the same time, it should be noted that among the 13 questions of this scale of the questionnaire, according to pedagogical workers, the leading causes of deterioration of their well-being are the political situation (2.9±0.1 points), medical care (3±0.1 points), own economic profit (3.1±0.1 points) and social and legal protection (sense of security)

(3.2±0.1 points). The environmental situation in the region of residence (3.3±0.1 points), the possibility of communication with art (3.4±0.1 points), study conditions (3.5±0.1 points) and the possibility of using money (3.5±0.1 points). The least significant reasons for the deterioration of well-being according to pedagogical workers are freedom of religion (3.6±0.1 points), living conditions directly (3.7±0.1 points), living conditions in the area of residence (3.7±0.1 points), active recreation (entertainment, sports) (3.9±0.1 points) and the possibility of obtaining information (4.3±0.1 points).

No major differences were found in the hierarchy of causes of deterioration of well-being in pedagogical workers of different sexes, however, there was a combination of causes and a change in order among the leading causes. Thus, leaving the "political situation" (2.9±0.1 points) in the first place for men, social and legal protection (sense of security) (3.1±0.1 points) taking the second place is combined with the level of their own economic profit (3.1±0.1 points), which is caused by the well-known main social role of men. In addition, men included the ecological situation in the region as the leading reasons (3.2±0.1 points).

Women, without changing the general hierarchy of causes of deterioration of well-being along with social and legal protection (sense of security) (3.2±0.1 points), choose the pedagogical workers rotundity to communicate with art (3.2±0.1 points), which is due to the specifics of the education of women on art, literature. In addition, to the secondary causes of the deterioration of women's well-being, they add the "possibility of using money" directly to living conditions, which is a woman's natural need to create a family hearth and comfort for children.

The age characteristics of the indicator of satisfaction with life from the standpoint of well-being have the same patterns as for the previous scales of the questionnaire: high indicators in pedagogical workers 20-21 years old. However, the selection of the hierarchy of reasons for the deterioration of well-being among the living conditions of 19-year-old pedagogical workers attracts attention, namely their division into only two gradations – leading and secondary. For them, the political situation (2.8±0.3 points), own economic profit (2.8±0.3 points), ecological situation (2.8±0.3 points), medical care (2.9 ±0.2 points), social and legal protection (sense of security) (3±0.2 points) and the possibility of using money (3.4±0.2 points). The choice of such a number of causes of deterioration in well-being among 19-year-old pedagogical workers indicates the possible influence of living conditions on the level of psychosocial stress of pedagogical workers with a lower level of professional training.

In addition, the fact that the level of satisfaction with living conditions increases depending on the level of self-assessment of the health of the

pedagogical workers is interesting, so the indicator of satisfaction with the living conditions of the pedagogical workers with an excellent health assessment (48.3±1.9 points) is 4.8 points higher than pedagogical workers with a satisfactory level of health (43.5±1.1 points, $p<0.05$). According to correlation analysis, a positive relationship was established between the level of self-assessment of health and the level of satisfaction with living conditions ($r=0.33$, $p<0.001$).

It should be noted that only pedagogical workers with a low level of the total life satisfaction index have a subjective health assessment of "very bad" and "poor", while pedagogical workers with higher levels of the total life satisfaction index do not have such a health assessment.

The established data on the relationship between life satisfaction in pedagogical workers and the level of their subjective assessment of health are confirmed by a correlation ($r=0.39$, $p<0.001$), which confirms the data of literary sources and indicates the possibility of establishing a marker of the level of health I by indicators of quality of life.

In order to determine the sources of psychosocial stress among pedagogical workers s, we assessed the prevalence of psychosocial stress levels among respondents. the analysis of the obtained results indicates a probable advantage among pedagogical workers of an average level of psychosocial stress (51.9±0.7%, $p<0.05$), which is formed primarily due to pedagogical workers of the male gender. The specific weight of the psychosocial index of men (56±0.7%) is 10.8% higher than the index of women (44±0.6%). Correlation analysis confirms the established data, which shows the relationship between the level of psychosocial stress and gender ($r=0.34$, $p<0.001$).

The next stage of assessment of the quality of life of pedagogical workers according to indicators of life satisfaction was the assessment of the level of psychosocial stress depending on the level of the total indicator of life satisfaction. The results of the analysis of the obtained data indicate a decrease in the level of psychosocial stress with an increase in the level of the total indicator of life satisfaction. In pedagogical workers with a high level of total life satisfaction, the indicator of a low level of psychosocial stress is 28.4% higher than the indicator of a low level in pedagogical workers with a low level of total life satisfaction. A high level of psychosocial stress is present in pedagogical workers with a low level of the total life satisfaction index. The relationship between youth satisfaction with life and the level of psychosocial stress is confirmed by correlation analysis ($r=-0.46$, $p<0.001$).

Thus, the results of the study of the quality of life of young people indicate the possibility of its assessment by the total indicator of life satisfaction and prediction of the level of psychosocial stress, subjective assessment of health.

2. Behavioral risk factors of chronic non-infectious diseases among teachers at the stage of professional training

According to the scale of self-assessment of health, pedagogical workers assesses his health as good (47.95±0.68%). A satisfactory assessment is given by 32.88±0.64% of respondents. Only 6.85±0.35% of respondents consider their health excellent and 8.22±0.38% of young people call it good. The specific weight of a poor assessment of one's own health by young people is 2.74±0.22%. They could not decide on a health assessment of 1.37±0.16%, which may indicate both the absence of complaints from the body systems and the lack of a clear idea of threats to one's own health.

It has long been known that bad habits: smoking tobacco and drinking alcohol, have the greatest impact on all aspects of life in modern society. According to the results of the survey, 16.44±0.34% of pedagogical workers smoke tobacco, 9.59±0.40% of them smoke sometimes and 6.85±0.35% every day. 82.19±0.52% of pedagogical workers do not smoke. As a result of the survey, the specific weight of "I don't know" answers was revealed (1.37±0.16%), which indicates a lack of understanding of the existence of this bad habit.

Among the best pedagogical workers, 16.44±0.51% of respondents claim that they have already smoked more than 100 cigarettes, which indicates a persistent habit. Whereas, 38.36±0.67% cannot say how many cigarettes they smoked.

A total of 10.96±0.43% of respondents would like to quit smoking and only 9.59±0.45% made such an attempt. Doctors (2.49±0.45%), average medical staff (72.47±0.67%), family members (10.01±0.34%), close friends recommended smokers to give up such a bad habit (teachers, friends – 15.01±0.46%).

73.97±0.60% of pedagogical workers is considered the norm of alcohol consumption. 13.69±0.47% of pedagogical workers do not drink alcohol. The specific weight of the responses of the uncertainty of one's attitude to the fact of alcohol consumption was determined, and it is 12.31±0.56%.

Elevated blood pressure is known to reduce life expectancy by 5 years (WHO, 2000), so being aware of your blood pressure level helps reduce health risks. Among pedagogical workers s, 52.06±0.68% do not know their blood pressure level, 32.88±0.64% are informed about its value. 15.07±0.45% of respondents did not think about the need for knowledge about blood pressure indicators.

21.92±0.57% of respondents know their cholesterol level, 63.01±0.66% do not know about its level, and 15.10±0.45% of respondents did not think about the need for such knowledge. At the same time, the specific weight of answers indicating the use of fats of animal origin is 71.23±0.62%.

In the conditions of a high level of development of technology and automation in production, transport and in everyday life, the motor activity of a person decreases, which negatively affects his health indicators. This is especially relevant for large cities with developed transport and household infrastructure, extremely wide opedagogical workers ortunities for passive consumption of cultural values. As a result of the survey, it was established that 50.68 ± 0.68% of pedagogical workers define their level of physical activity as mostly "sedentary". Mostly "walk" – 32.88±0.64% of respondents. 5.49±0.31% of pedagogical workers are engaged in sports. They do not know how to determine their physical activity 6.85±0.27%.

Unfortunately, 68.49±0.64% of respondents were not recommended by anyone to increase their physical activity. Family members (17.81±0.54%) are the most worried about the hypodynamia of their loved ones. Friends recommend increasing physical activity by 12.34±0.45%. Unfortunately, the role of medical workers in promoting physical activity is very small and amounts to 1.37±0.16%.

It should be noted that the low level of physical activity in pedagogical workers may be due to the lack of knowledge about the ratio of own weight and height. thus, 15.07% of pedagogical workers do not know their height and 13.69% do not know their weight.

The analysis of the results of the evaluation of recommendations for changing one's habits towards a healthy lifestyle for pedagogical workers shows that 24.41% of pedagogical workers advised to increase physical activity, eat more vegetables for 22.84% of respondents, consume less salt for 13.39% of respondents and fats of animal origin (8.66%), change the diet to a rational one (7.87%) and consume less alcohol (3.15%). Unfortunately, 7.09% of respondents cannot say unequivocally that they were ever advised to lead a healthy lifestyle.

Thus, the results of the study show the presence of a certain contingent among pedagogical workers who are not aware of the need for knowledge about their health and the factors affecting it. The specific weight of such a contingent range from 7 to 15%.

As a result of the analysis, we consider it necessary to make the following recommendations for raising awareness of health risk factors: create a diary for monitoring hemodynamic and anthropometric indicators for PP; to develop an information and educational program to combat bad habits and recommendations for increasing the level of physical activity in the conditions of a higher education institution; to introduce issues related to health risk factors, hygienic behavior and health promotion into educational courses, regardless of specialty.

At the stage of professional training, pedagogical workers are offered a program for the prevention of professional stressors of pedagogical activity.

The program provided for three stages of implementation. At the first stage, preliminary lectures and training sessions were held on the general topic of "Professional burnout prevention" in order to acquaint the teaching staff with the problem of professional burnout and ways to correct it.

At the second stage, an individual correction of the work and rest regime of pedagogical workers and familiarization with the sanitary and hygienic standards for the maintenance of educational institutions was carried out.

The third stage of the program included direct implementation of physical culture and physical rehabilitation. From the means of physical culture, industrial gymnastics was chosen, which included: introductory gymnastics, physical culture pauses, micropauses, and health and preventive gymnastics. Among the means of physical rehabilitation, self-massage, relaxation and phonation breathing exercises were used.

Introductory gymnastics was carried out before starting work at the workplace for 5–7 minutes. The complex included elements of pull-ups, body tilts, coordination exercises, relaxation, lunges, and jumps. Physical education minutes were performed in the first and second half of the day during breaks for 5–6 minutes. The complex consisted of 6-7 exercises for those muscle groups that were not involved in work with elements of static efforts. Micropauses were held more often than physical culture minutes (approximately at the end of each working hour), they consisted of 2–3 exercises for pulling, rotating the body, and squatting.

Rehabilitation and preventive gymnastics were held in the afternoon after classes 3 times a week for 20–30 minutes. The complex included general developmental exercises, coordination exercises, relaxation and phonation gymnastics.

Self-massage was recommended to be performed daily for 20 minutes in the afternoon and at the first signs of a headache. Relaxation gymnastics classes were conducted in the form of independent classes at home, in an individual or small group method during the occurrence of subjective signs of neuro-emotional stress and fatigue at work. The complex of relaxation gymnastics was performed for 5–10 minutes in the starting position while sitting on a chair and standing. The pace is slow. Calm breathing.

To train and strengthen phonation breathing, exercises with a candle, sound gymnastics were recommended. Exercises are performed every day. They begin to master exercises that are not difficult to perform. The number of repetitions is 1–2 times. Completion of mastering the exercises should take place in 2-3 weeks. In the process of performing the exercises, a long, even, slow exhalation is practiced.

Such a program allows you to reduce psychosocial stress and direct attention to health promotion.

3. Risk factors of non-infectious diseases among teaching staff at the stage of professional training during martial law

According to the subjective assessment of the state of one's own health, pedagogical workers at the stage of professional training receive a "good" health assessment, regardless of the year of the study. In 2022, the specific weight of the "good" rating is 75±3.25%, which is no different from 2023 with a share of 75.56±3.22%. 21.59±3.08% of respondents consider their health excellent in 2022, which is 2.7% higher than the share in 2023 (18.89±2.93%, $t=0.63$ $p\geq0.05$). A satisfactory assessment of their own health in 2022 is given by 3.41±1.36% of pedagogical workers at the stage of professional training, which is 2.15% less than the share in 2023 (5.56±1.72%, $t=0$ .98 $p\geq0.05$).

In order to assess health risks, scientists recommend determining the body mass index. A significant difference in the body mass index indicators of different years of the study was established among pedagogical workers at the stage of professional training. Thus, in 2023, 15.48% lower values of the share of subjects with normal body weight were recorded (57.78±3.72, $t=3.1$ $p\leq0.05$) compared to 2022. At the same time, in 2023, the value of the share with obesity of the first degree was 6.7 times higher (7.78±2.02%, $t=3.04$ $p\leq0.05$). A trend has been established to increase the share of future teaching staff with insufficient body weight by 4.19% and with excess body weight by 4.71%, which indicates an increase in the risk of developing diseases of the circulatory system (Table 2).

Regardless of the year of the study, the advantage of the share of future teachers with a normal body mass index was established, the group with an excess of body weight took the second place, the group with a deficit of body weight took the third place, and the group with obesity of the 1st degree took the fourth place. In 2022, 26.74% and in 2023, 42.22% of pedagogical workers were in the risk zone for the development of NCDs. The all-Ukrainian result of the body mass index assessment of people aged 18-69 as of 2019 confirms the share of overweight in 59% and obesity in 24.8%. Pedagogical workers with insufficient body weight are at risk for the development of bronchopulmonary diseases, with excess weight – for cardiovascular diseases, and with obesity of the first degree – for the risk of cardiovascular and endocrine diseases.

According to WHO recommendations, adults should allocate at least 150 minutes of moderate-intensity aerobic physical activity, along with muscle-strengthening exercises, twice a week. Among pedagogical workers at the professional training stage, 67.05±3.52% in 2022 and 68.89±3.47% of respondents are mainly engaged in organized physical culture and sports. Only in 2022, 10.23±2.27% engaged in unorganized physical culture and sports, which may be due to adaptation to the conditions of martial law. The share of

teaching staff who are not engaged in physical culture and sports is 22.73±3.14% in 2022 and 31.11±3.47% in 2023.

Table 2

Distribution of the body mass index of pedagogical workers at the stage of professional training in 2022-2023 (%)

Classification by body mass index	**2022 рік *n* = 88**	**2023 рік *n* = 90**
Lack of body weight	5.81±1.76	10±2.26
Equivalent to normal body weight	73.26±3.34	57.78±3.72* *t*=3.1 *p*≤0.05
Excess body weight	19.77±3.00	24.48±3.24
Obesity of the first degree	1.16±0.81	7.78±2.02* *t*=3.04 *p*≤0.05

*Notes: * – probable difference between indicators of different years*

In the 2019 STEPS study, the proportion of people aged 18 to 69 with low physical activity is 10%. Among pedagogical workers at the stage of professional training, the share of low FA does not differ in years, in contrast to other levels. The share of teaching staff with a high level of physical activity increased by 17.04% from 17.05±2.82% in 2022 to 34.44±3.56% in 2023 (t=3.67 p≤0.01). This happened due to the share of pedagogical workers with an average level of physical activity, whose share decreased by 19.02% from 55.68±3.72% in 2022 to 36.67±3.61% in 2023 (t=3, 83 p≤0.01).

According to the WHO, high blood pressure reduces life expectancy by 5 years. The results of the assessment of the ratio of actual to appropriate blood pressure values indicate the presence of elevated blood pressure in 2022 in 7.69±2.78% of respondents. In 2023, no data on the presence of high blood pressure were registered. The all-Ukrainian result of high blood pressure is 34.8% according to STEPS data in 2019. It exceeds the data of pedagogical workers at the stage of PP.

Awareness of the level of blood pressure in order to control the risks to one's own health among teaching staff is an important component of the prevention of the development of NCDs. The results of the survey on the level of awareness indicate a lack of knowledge about the level of blood pressure in 46.59±3.74% in 2022 and 41.1±3.69% in 2023.

In addition to blood pressure, the level of cholesterol affects the level of development of diseases of the cardiovascular system. All-Ukrainian data on elevated cholesterol correspond to 40.7%. The results of the assessment of awareness of the level of cholesterol indicate its low level. More than 60% of future teachers do not know their blood cholesterol level (2022 – 68.18±3.49%, 2023 – 65.56±3.56%).

The results of the STEPS study of active tobacco smoking among the population aged 18–69 in Ukraine in 2019 indicate 33.9%. The prevalence of tobacco smoking among teaching staff at the pedagogical workers stage does

not differ in the years of the study and ranges from 9.09±2.12% in 2022 to 12.22±2.46% in 2023. The rate of tobacco smoking among future teachers is 21.68% lower than the national rate.

In addition to conventional tobacco smoking, new tobacco products such as electronic cigarettes have long been widespread. The prevalence of electronic cigarette smoking among teaching staff at the professional training stage is 15.91±2.74% in 2022 and 14.44±2.63% in 2023. It should be noted that among smokers of electronic cigarettes in 2022, 12.16% and 6.49% in 2023 do not smoke tobacco cigarettes, which indicates a lack of awareness of the risk of their consumption for the development of NCDs.

According to 2019 data, active alcohol consumption among the population of our country is 55.6%. Among pedagogical workers at the stage of professional training, the prevalence of alcohol consumption in the last 12 months in 2022 is 65.91±3.55% and in 2023 – 72.22±3.36%. At the same time, a low share of consumption of strong alcoholic beverages is observed among pedagogical workers at the stage of professional training. Thus, in 2022, 2.27±1.12% of respondents noted the consumption of strong alcoholic beverages, which is 2.44 times less than the share in 2023 (5.56±2.63%, $t=0.6$ $p\geq 0$,05).

According to the WHO recommendation, you should consume up to five servings of 400 g of fruits and vegetables every day. The share of the population of Ukraine in 2019 that did not follow these recommendations was 66.4%. Among teaching staff, 18.02±2.05% in 2022 and 15.00±1.9% in 2023 follow this recommendation. The share of respondents who consume vegetables and fruits two to four times a day is predominant, regardless of the year of the study (2022 – 69.19±%, 2023 – 72.78±%). The share of teachers who consume vegetables and fruits more than seven times a day is 5.23±1.19% in 2022, which is 3.57% more than the share in 2023 (1.67±0.68, $t=2$ .6 $p\leq 0.05$).

The average values of fruit and vegetable consumption do not differ in the years of the study and meet WHO requirements. The volume of fruits is 195.85±13.26 g in 2022 and 190.33±14.87 g in 2023. The volume of vegetables corresponds to 200.39±14.20 g in 2022 and 199.48±13.46 g in 2023.

The evaluation of combined NCD risk factors was carried out according to six factors: overweight and obesity, low physical activity, smoking and alcohol consumption, high blood pressure, and low consumption of fruits and vegetables. The results of the assessment indicate a high level of distribution of combined NCD factors among pedagogical workers at the professional training stage. Regardless of the year of the study, this indicator is from three to five risk factors for NCDs (2022 – 40.91±3.69%, 2023 – 46.67±3.74%). The indicators of 2022 by 8.11% and 2023 by 13.87% are higher than the all-

Ukrainian data of 2019 (32.8%). The established results require the strengthening of measures for educational work in institutions of higher pedagogical education regarding health promotion.

Conclusions

1. The level of psychosocial stress of pedagogical workers at the stage of professional training is at an average level (51.9±0.7%), which is formed primarily at the expense of male students of the educational field of physical culture. These data are confirmed by the positive relationship between the level of psychosocial stress and gender ($r=0.34$, $p<0.001$) and specialization ($r=0.41$, $p<0.001$). The causes of psychosocial stress among teaching staff are a decrease in the quality of life ($r=-0.49$, $p<0.001$) and satisfaction with basic life needs ($r=0.35$, $p<0.001$).

2. As a result of the conducted research, it was established the presence of teaching staff with a low level of awareness of risk factors for health: 1.37±0.16% of teaching staff do not know how to assess their health; 1.37±0.16% of teaching staff do not know whether they smoke or not; 12.31±0.56% of teachers do not know whether they drink alcohol or not; did not think about the need for knowledge about blood pressure indicators 15.07±0.45% of teaching staff and cholesterol level 15.10±0.45% of teaching staff; 6.85±0.27% of teachers do not know how to determine their physical activity. The presence of harmful habits among pedagogical workers was established: smoking in 16.44±0.34% and drinking alcohol in 73.97±0.60% of pedagogical workers. The level of physical activity is mainly "sedentary" in 50.68±0.68% of pedagogical workers.

3. The following recommendations have been developed: keep a diary of monitoring hemodynamic and anthropometric indicators; take part in one of the forms of an informational and educational program to combat bad habits; increase your level of motor activity; undergo training on issues related to health risk factors, hygienic behavior and health promotion.

4. As a result of the assessment of risk factors for non-infectious diseases among teachers at the stage of professional training during martial law, a high level of combined NCD factors was established, the rate of which exceeds the national rate.

5. During the martial law, there was a trend toward an increase in the group of pedagogic workers at the stage of pedagogic workers with first-degree obesity ($t=3.04$, $p\leq0.05$) and a decrease in the group with normal body weight ($t=3.1$, $p\leq0, 05$); decrease in the group with increased blood pressure ($t=4.5$, $p\leq0.001$), decrease in the group consuming vegetables and fruits more than seven times a day ($t=2.6$, $p\leq0.01$), high growth in the group of future teachers level of physical activity ($t=3.83$, $p\leq0.01$).

6. The conducted research requires, in the conditions of martial law, to optimize health promotion measures among teaching staff at the stage of professional training and to constantly focus attention on the risk factors of non-communicable diseases.

Summary

The purpose of the study is to assess the risk factors of non-communicable diseases among teachers at the stage of professional training.

Materials and methods. To achieve the goal, we conducted a survey based on a specially developed questionnaire, which included questions about behavioral risk factors, anthropometric indicators, hemodynamic indicators (heart rate, blood pressure. The survey was conducted using the Google.forms cloud environment. Physical development was assessed by body mass index according to the standard methodology. Physical activity was determined according to WHO recommendations and included the determination of the basic metabolic rate, the physical activity factor, and the assessment of the following NCD factors: overweight and obesity, low physical activity, and alcohol consumption, high blood pressure, low consumption of fruits and vegetables.

To assess life satisfaction, 108 pedagogical workers at the stage of professional training aged 19-22 in Sumy were surveyed in 2011. Of them, 61 are men and 47 are women. In order to compare the obtained research results, we examined 78 pedagogical workers in the educational field of physical culture and 30 pedagogical workers in the educational field of pedagogy and practical psychology.

In 2017, 73 teaching staff aged 17-25 at the stage of professional training in the city of Sumy were surveyed in order to identify awareness of the leading health risk factors. Using the questionnaire method, the awareness of PPs regarding the leading health risk factors was revealed: high blood pressure, smoking, alcohol abuse, high blood cholesterol, excess body weight, insufficient physical activity.

In order to assess the risk factors of non-infectious diseases among teachers at the stage of professional training during the martial law, 178 teachers at the stage of professional training aged 18-52 were surveyed in the city of Sumy during October 2022 (88 people) and 2023 (90 people).

The level of psychosocial stress of pedagogical workers at the stage of professional training is at an average level (51.9±0.7%), which is formed primarily at the expense of male students of the educational field of physical culture. These data are confirmed by the positive relationship between the level of psychosocial stress and gender ($r=0.34$, $p<0.001$) and specialization ($r=0.41$, $p<0.001$). The causes of psychosocial stress among teaching staff are

a decrease in the quality of life (r=-0.49, p<0.001) and satisfaction with basic life needs (r=0.35, p<0.001).

As a result of the conducted research, it was established the presence of teaching staff with a low level of awareness of risk factors for health: 1.37±0.16% of teaching staff do not know how to assess their health; 1.37±0.16% of teaching staff do not know whether they smoke or not; 12.31±0.56% of teachers do not know whether they drink alcohol or not; did not think about the need for knowledge about blood pressure indicators 15.07±0.45% of teaching staff and cholesterol level 15.10±0.45% of teaching staff; 6.85±0.27% of teachers do not know how to determine their physical activity. The presence of harmful habits among pedagogical workers was established: smoking in 16.44±0.34% and drinking alcohol in 73.97±0.60% of pedagogical workers. The level of physical activity is mainly "sedentary" in 50.68±0.68% of pedagogical workers.

The following recommendations have been developed: keep a diary of monitoring hemodynamic and anthropometric indicators; take part in one of the forms of an informational and educational program to combat bad habits; increase your level of motor activity; undergo training on issues related to health risk factors, hygienic behavior and health promotion.

As a result of the assessment of risk factors for non-infectious diseases among teachers at the stage of professional training during martial law, a high level of combined NCD factors was established, the rate of which exceeds the national rate.

During the martial law, there was a trend toward an increase in the group of pedagogic workers at the stage of pedagogic workers with first-degree obesity (t=3.04, p≤0.05) and a decrease in the group with normal body weight (t=3.1, p≤0, 05); decrease in the group with increased blood pressure (t=4.5, p≤0.001), decrease in the group consuming vegetables and fruits more than seven times a day (t=2.6, p≤0.01), high growth in the group of future teachers level of physical activity (t=3.83, p≤0.01).

The conducted research requires, in the conditions of martial law, to optimize health promotion measures among teaching staff at the stage of professional training and to constantly focus attention on the risk factors of non-communicable diseases.

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