

Features of modern secondary school teacher's value-based attitude to health and emotional burnout

Características de las actitudes de maestros de la escuela secundaria, basadas en valores sobre la salud y el agotamiento emocional

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ABSTRACT:

The article presents the results of studying teacher's cultural level and healthy lifestyle ($n=58$) of the first and second stages in middle age (average age 28.6 ± 1.3 and 48.7 ± 1.0 years, respectively). Significant differences in the value relation to health, severity of phases and symptoms of emotional burnout, indicators of the functional state of the central nervous system, reflecting the age-related decline in satisfactory indicators of the psychological and psychophysiological components of health are revealed.

Keywords: Middle-aged teachers, health culture, emotional burnout, functional state of the central nervous system

RESUMEN:

El artículo presenta los resultados de un estudio del nivel de cultura y del estilo de vida saludable de los docentes ($n=58$) de la primera y la segunda etapa de la mediana edad (edad promedio 28.6 ± 1.3 y 48.7 ± 1.0 años, respectivamente). Se revelan diferencias significativas en el valor relacionado con la salud, gravedad de las fases y de los síntomas del agotamiento emocional y los indicadores del estado funcional del sistema nervioso central, que reflejan la disminución relacionada con la edad en los indicadores satisfactorios de los componentes psicológicos y psicofisiológicos de la salud.

Palabras clave: Maestros de la escuela secundaria, cultura de la salud, agotamiento emocional, estado funcional del sistema nervioso central.

1. Introduction

Human health is considered one of the most important social tasks of the society of any state in the world. In connection with this, at the present stage of society development, the problem of human health acts as a world global problem. Numerous scientific data (Babanov, 2011; Belousova & Maltsev, 2016) indicate a persistent deterioration in people's health status lately, while society and the state need active, healthy, creative, harmoniously

developed personalities who successfully implement their abilities in professional activities. Since younger generation health largely depends on the teacher (Danilova, 2010; Kovalenko, 2013), the specificity of education at the present stage imposes special requirements not only for the education content, the educational process organization, the quality and professional training level of education specialists, but also the state of physical and psychological health, educational process participants' capacity level, health-saving educational activity of the school (Bagnetova & Sharifullina, 2013; Danilova, 2010).

In this situation, in-depth analysis and understanding of teachers' health modern tendencies, socio-hygienic factors behavioral characteristics and factors of professional activity affecting health, is one of the most important ways to improve the educational environment within the framework of health protection (Zhukov & Rossoshanskaya, 2011).

A comprehensive school teacher in its professional and social role is a key figure in the educational process, special knowledge carrier, as well as an example of behavior and attitude toward health. At the same time, the success and effectiveness of teacher's educational activity is determined not only by their professional competence, but also depends largely on their psycho-physiological and physical well-being, an adequate attitude to their health and the health of the students. Thus, on the one hand, teacher's professional health is the basis for modern school effective work and, at the same time, it appears as a strategic problem of modern education (Husainova, 2006).

However, numerous studies of recent years (Kisel, 2012; Kornilova, Ryazanova, Asriyan, & I.I., 2015) indicate extremely low indicators of teachers' physical and mental health as a professional group, which decrease with increasing pedagogical work, experience (Chimarov & Malyarchuk, 2015). Teachers' health (Bagnetova & Sharifullina, 2013; Kovalenko, 2013; Mettus, 2010) according to the majority of researchers is negatively influenced by the abundance of subjective and objective factors. In modern educational environment, school teachers' activities are saturated with many stress factors (high permanent responsibility for pupils' life and health, irregular working hours, high interpersonal contacts density, long-term modernization and reforming of the education system, etc.) that lead to exhaustion of teachers' neuropsychic state and the emergence of the so-called "emotional burnout" syndrome (a state of pronounced emotional and mental depletion) (Babanov, 2011). With the increase of teacher's pedagogical experience, an increase in disadaptation processes and psychopathological states of neurotic or psychopathic nature occurs (Husainova, 2006). At the same time, stressful occupational environment leads to the emergence of a number of occupational diseases of life supporting integrative systems chronic pathology of the body: nervous, cardiovascular, immune, digestive systems, respiratory organs, etc.

An important aspect in the matter of teachers' health is a low motivational value-based attitude to their health, a low level of health culture and a healthy lifestyle, low awareness of risk factors and ways to prevent occupational diseases (Bagnetova & Sharifullina, 2013).

Based on the above, the problem of teachers' health preservation and the formation of conscious motivation to protect and shape teachers' personal health are relevant.

However, despite systematic research in the field of education participants' health in the theoretical and practical aspects (Maltsev, Beloysova, & Semchenko, 2018), in modern pedagogical research insufficient attention is paid to highlighting the issues of teachers' health protection in educational institutions, contributing to the achievement of competence parity and preserving the teachers' health.

2. Methodology

The study was conducted in the period from 2016 to 2017 in secondary school № 48 in Kopeysk, Chelyabinsk region.

The study involved 58 middle aged female teachers. According to the human ontogenesis age periodization (Moscow, 1965), the average age of women falls within the period of 21-55 years old. And it is differentiated into two stages – first is 21 - 35 years old, second 36 - 55 years old. In this connection, the total sample of teachers was differentiated into two groups according to the age periodization criterion: the first group (group I) consisted of

women of the first age period stage (average age 28.6 ± 1.3 years old), the second group (group II) - middle aged women of the second stage (average age 48.7 ± 1.0 years old). The study of the Central Nervous System (CNS) functional state of and the prediction of its working capacity were carried out using the computerized technique «Capacity and person's functional condition express diagnostics» developed by «IMATON», St. Petersburg (Moroz, 2007). The applied method allows to evaluate the integral characteristics of the patient's CNS.

This technique is an objective method for assessing the functional state of the CNS and individual mental capacity on a statistical analysis of the latent periods of a simple visual-motor reaction (SVMR).

The technique is easy to use, fully automated, and does not cause the effect of addiction.

During the study, three main indicators of the CNS functional state were assessed: functional level of the nervous system (FLS), nervous reaction stability (RS), functional capability level of the formed functional system (FCL).

Psychodiagnostics of the level of attitude to their health was identified according to a psychological test "Health attitude index" (S.Deryabo - V.Yasvin). This test diagnoses a subjective attitude to health and a healthy lifestyle (Deryabo & Yasvin, 2019).

The questionnaire «Attitude to health» diagnoses a subjective attitude to health at the cognitive, behavioral, emotional, and value-motivational levels (Berezovskaya, 2019).

The method of diagnosing the emotional burnout level, proposed by V. Boyko, makes it possible to diagnose the mechanism of psychological defense in the form of complete or partial emotion elimination in response to selected traumatic influences (Boyko, 2019).

The technique characterizes the leading "emotional burnout" symptoms and determines which stress development phase they stay at: "tension" - experiencing psycho-traumatic circumstances, dissatisfaction with oneself, "trapped in a cage", anxiety; "resistance" - inadequate selective emotional response, emotional and moral disorientation, expansion of emotion saving, reduction of professional duties; "exhaustion" - emotional deficiency, emotional detachment, personal detachment (depersonalization), psychosomatic and psycho-vegetative disorders.

The total quantitative indicators of the phases of development of emotional burnout: "Tension", "resistance" and "exhaustion" allow us to determine the degree of formation of each phase: 36 points or less - the phase has not formed; 37-60 points - phase in the stage of formation; 61 points or more - formed phase (Boyko, 2019).

The study results were processed on a computer using modern statistical software packages Microsoft Excel 7.0., Statistica v. 8.0. The material analysis was carried out on the basis of mathematical calculations with the calculation of arithmetic mean (M), the standard error of the mean (m). Reliability of compared groups' average value indicators differences evaluation was carried out using Fisher's F-criterion, implemented in one-way variance analysis Factorial ANOVA.

The statistical significance of differences in two or more relative indicators (frequencies) was evaluated using the non-parametric Pearson's chi-squared test. Results were considered statistically significant at $p < 0.05$.

3. Results

According to the experts (Abrosimova, 2013; Sinitsyn & Vdovina, 2012) the preservation and strengthening of health begins with the adjustment of our own attitude to health, and it should become valuable.

The results of a questionnaire about the teachers' health state revealed the following distribution: no more than 35% of teachers (34% for the first and 32% for the second group, respectively) subjectively evaluate their health status as positive. The majority of respondents (66% in the first group and 68% in the second group of teachers) note various deviations in the state of their own health.

Table 1 presents the survey results on the structure of teachers' incidence of a disease.

Table 1
Frequency various nosologies occurrence among surveyed teachers.

№	Nosology	Occurrence frequency, %
1	Cardiovascular diseases	60
2	Digestive system diseases	23
3	Respiratory diseases	16
4	Genitourinary system diseases	17
5	Endocrine disorders, including overweight	55
6	Nervous system diseases	28
7	Eye diseases	63
8	Musculoskeletal system diseases	32
9	Other diseases	16

The dominant nosologies in the structure of secondary school teachers' overall incidence of disease are: the pathology of the visual apparatus - 63%; cardiovascular diseases - 60% and endocrine disorders (overweight) - 55%. The majority of respondents noted combined diseases, including 2-3 or more nosologies of various body systems.

Among the main reasons for health state deviation, most teachers (78%) consider exogenous factors of professional activity: high psycho-emotional pressure, mental and psychological overloads (including ones due to prolonged computer work), psycho-traumatic social stressors.

Not rational and untimely meals (about 68% of respondents), as well as hypodynamia, accompanied by prolonged orthostatic load - stated at 73% of teachers have a significant influence.

The obtained results are in agreement with the research data of (Zhukov & Rossoshanskaya, 2011), which, according to the results of a questionnaire survey of female school teachers in Ulyanovsk and Rostov-on-Don, respectively, stated similar deviations in the health status disorders occurrence frequency. It was found that only one third of teachers consider themselves healthy. At the same time, in the morbidity structure, as in our study, teachers are mainly characterized by eye and cardiovascular system diseases. However, in our study, the teachers noted endocrine abnormalities as an important health state deviation, while in the study by Zhukov O.F. musculoskeletal system violations were marked.

Estimated results of the value-based attitude to the teachers' of different age groups health, diagnosed according to the method of S.D. Deryabo, V.A. Yasvina "Health attitude index" are summarized in Table 2.

Table 2
Value-based attitude to the teachers' of different age groups health indicators, (M±m)

	Group I	Group II	

Scale	(n=23)	(n=35)	p-level
Emotional	5,3±0,2	7,2±0,2	<0,001
Cognitive	6,5±0,2	6,9±0,2	-
Practical	7,3±0,2	5,0±0,2	<0,001
Progressive	5,4±0,2	6,3±0,2	0,003
Final	6,1±0,1	6,4±0,1	-

Note: p-level - significant differences in the average indicators between the studied groups (with $p \leq 0.05$).

The analysis of the table data shows that for the surveyed teachers' population of both age groups, an adequately formed positive attitude towards health and a healthy lifestyle is inherent, which is reflected in the average and above average indicators of individual scales and the final test scale. Indicators of the cognitive scale indicate an adequately expressed interest in the problem of the examined groups of teachers' health and healthy lifestyle. Highly reliable intergroup differences in the average emotional, practical and progressive attitude components towards health indicators are revealed. High performance on the teachers' of the second group emotional scale testifies to the greater sensitivity of older teachers to the vital manifestations of their health, the ability of greater aesthetic pleasure from a healthy organism. While in the first group of teachers, health care in the emotional sphere serves to a greater extent as the basis for a rational manifestation of the need to preserve their health, the aesthetic health aspect is less pronounced. The predominance of the average values of teachers' of the second group progressive scale indicates the predominance of the desire to change their environment in accordance with their own view of health, trying to influence close peoples' attitude to health, promotes a healthy lifestyle. While teachers of the first age group have a more pronounced attitude to health as a personal matter, with a moderate desire expression to change the entourage. However, the dominance of first group of teachers' practical scale average indicator reflects their active involvement in practical activities (playing sports, developing skills and habits of a healthy lifestyle, etc.) in caring for their health, while older teachers are only partially included in practical activities about their health care, as a rule, organized by other people.

According to the results of the questionnaire «Attitude to health» by R.A. Berezovskaya in the groups of teachers as a whole obtained adequate selective connections of the personality with the surrounding reality system results, contributing to the health preservation. At the same time, a number of attitude features towards their own health among teachers of different age groups were revealed.

At the cognitive level, competence-based awareness in the field of health and healthy lifestyle for teachers of both groups is mainly due to behavioral characteristics, such as the absence of bad habits, minimizing the stressors of personal and professional life, sensible nutrition, minimization of unfavorable ecological environment. In addition to these criteria, respondents from the first group of teachers also noted sports and active recreation. The awareness of teachers of the first group in the health field is largely influenced by medical and biological specialists and popular health science books. While teachers of the second group receive information in the health field not only from doctors, but from the reference group of acquaintances, the media.

At the behavioral level, in order to maintain their health, the respondents of the first group mainly try to avoid bad habits, stick to a diet, and engage in moderate exercise. Teachers of the second group are making the following efforts to maintain their health: the observance of sleep and wakefulness, weight control, leveling of bad habits. In case of indisposition, the teachers of both groups in most cases try to take measures independently, based on their

past experience, and also see a doctor.

On emotional level, in case of teachers' satisfactory health state regardless of their age, positive emotions are inherent: calmness, happiness, and also self-confidence. When their health deteriorates, the teachers of both groups are very nervous and experience frustration and anxiety. For the respondents of the first group, a highly met response was also a feeling of depression, which in the second group did not occur in any of the teachers.

At the value-motivational level for both survey groups, health is in the list of important areas of life. At the same time for the respondents of the first group material wealth, family and independence are important. Among the instrumental values, the majority indicated a good education and abilities. For surveyed people of the second group, family, friends, and interesting work are important values. The means of achieving life goals for this group of teachers are mainly health, abilities and perseverance-hard work.

Thus, it can be concluded that with the general trend on health value and significance, high motivation to maintain and promote health of different age groups teachers, differences in emotional responses to health were revealed (with the age grow, there was a sensitivity prevalence to health, increased health satisfaction) and also in behavior (teachers of the first age group have more pronounced practical actions and actions to maintain a healthy lifestyle).

The results of the study by (Kornilova, Ryazanova, Asriyan, & I.I., 2015), carried out according to the method of R.A. Berezovskaya, in gender-mixed group of teachers of middle age second period (35-64 years old) in Primorye (Vladivostok), was diagnosed with similar to our research results severity picture of value-based attitude to their own health. Urban teachers' attitude to their own health, according to the author, is consciously and emotionally positive, at the cognitive level; health is associated with physical well-being, while teachers strive to actively influence their environment in relation to health.

According to V.V. Boyko, emotional burnout is a personal psychological defense mechanism in the form of complete or partial emotion elimination in response to traumatic effects. Emotional burnout is a stereotype of emotional, most often professional conduct.

The results of teachers' of different age groups emotional burnout testing are summarized in Table 3.

Interpreting table's data, it should be noted that the emotional burnout symptoms among teachers of the older age group are different compared with the teachers of the middle age first period, which is reflected in significantly lower average indicators of emotional burnout symptoms and phases.

Table 3
Teachers' of different age groups
emotional burnout indicators, (M±m)

Phase / Symptoms of emotional burnout	Group I (n=23)	Group II (n=35)	p-level
Tension	62,2±3,2	74,6±5,6	0,004
- Experiencing psycho-traumatic circumstances	11,8±0,8	16,2±0,7	<0,001
- Dissatisfaction with oneself	16,8±0,8	19,2±0,7	0,03
- "Trapped in a cage"	17,8±0,7	21,2±0,8	0,002
- Anxiety and depression	15,8±0,8	18,2±0,6	0,03
Resistance	61,2±3,2	79,6±5,6	<0,001

- Inadequate selective emotional response	13,8±0,9	19,2±0,9	<0,001
- Emotional and moral disorientation	16,8±0,8	18,2±0,8	-
- Expansion of emotion saving	17,8±0,6	20,2±0,7	0,03
- Reduction of professional duties	12,8±0,8	22,2±0,6	<0,001
Exhaustion	50,2±3,3	78,6±5,7	<0,001
- Emotional deficiency	11,8±0,8	20,2±0,7	<0,001
- Emotional detachment	10,8±0,7	21,2±0,8	<0,001
- Personal detachment (depersonalization)	14,8±0,8	19,2±0,6	<0,001
- Psychosomatic and psycho-vegetative disorders	12,8±0,9	18,2±0,8	<0,001

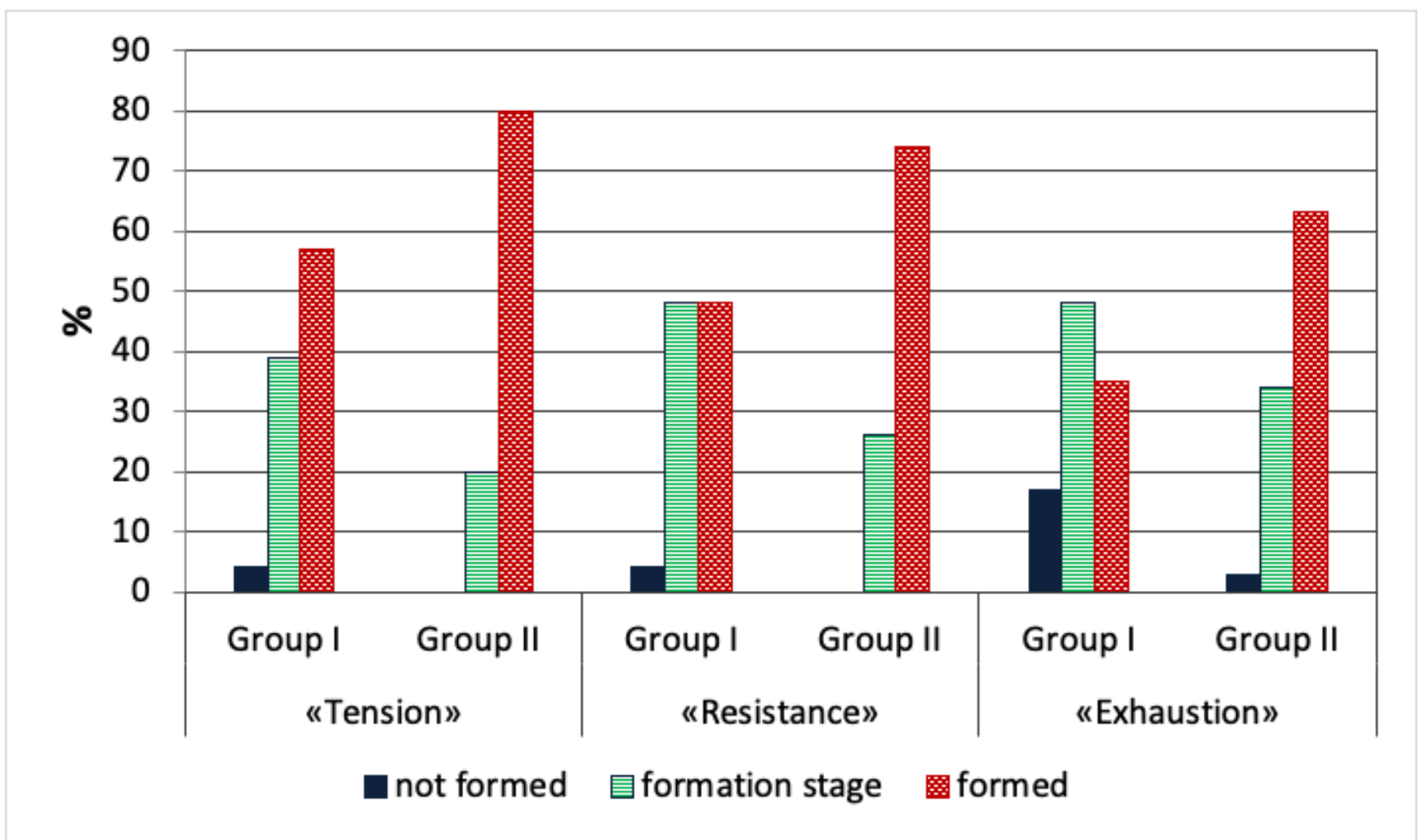
Note: p-level - significant differences in the average indicators between the studied groups (with $p \leq 0.05$).

According to the table, the main emotional burnout symptoms of the respondents of the first group are attributed to the phases of tension and emotional burnout resistance, at the same time most of the symptoms in terms of the group average correspond to the formation stage (within the range of 10-15 points). The leading symptoms of "burnout" are "Trapped in a cage" and "Expansion of emotion saving", but at the same time do not exceed the barrier of 20 points - a pronounced property. Stopping on the emotional burnout phases severity of the people of the first group, it should be noted that the phases correspond to the boundary values of formation, the average indicators of the depletion phase correspond to the formation stage. The examined of the second age group, all diagnosed symptoms and emotional burnout phases correspond to the established level. Leading symptoms that exceed the threshold of 20 points are "Trapped in a cage", "Expansion of emotion saving", "Reduction of professional duties", "Emotional deficiency" and "Emotional detachment".

The percentage distribution of the teachers of different age groups according to emotional burnout phases formation level is presented in fig. 1.

Figure 1

Distribution of the teachers' of different age groups according to emotional burnout different phases formation, %.



The table's data also reflects differences in reactions to external and internal factors, methods of psychological protection, while ensuring the psychological phenomenon of the emotional burnout of teachers' of different age groups personality.

Tension and resistance phases are formed on average in half of the surveyed teachers of the first age group; other teachers of this group are characterized by the formation stage of emotional burnout phases. For the second surveyed group of teachers, the formation of the studied emotional burnout phases is inherent, which is peculiar to 60-80% of teachers.

The statistical analysis revealed significant differences in the frequency expression of the surveyed groups of teachers in the phases of resistance and exhaustion ($\chi^2 = 7.12$; $p = 0.03$ and $\chi^2 = 14.12$; $p < 0.001$, respectively).

Comparison of the obtained results is generally consistent with the literature data [8], indicating the prevalence of the number of teachers with emotional burnout signs with an increase of the work experience in school. Moreover, as noted by the authors [2; 7] by the age of 40, most teachers (up to 100%) experience emotional burnout.

According to scientific research (Moroz, 2007) an integral indicator of the CNS functional state is the time of the sensorimotor reaction.

The summarized results of the CNS functional state study of teachers of different age groups are presented in Table 4.

Indicators of sensorimotor reaction reflect, first of all, the excitation propagation speed and the excitability level of the central elements of the corresponding reflex arcs (Moroz, 2007). The average characteristics of the teachers' SVMR indicators (SFL, RS, FCL) were compared with the recommended standard values.

Table 4
The CNS functional state of teachers of different age groups indicators, ($M \pm m$)

Indicator	Group I (n=23)	Group II (n=35)	p-level
SFL, standard units	2,7±0,2	2,6±0,2	-

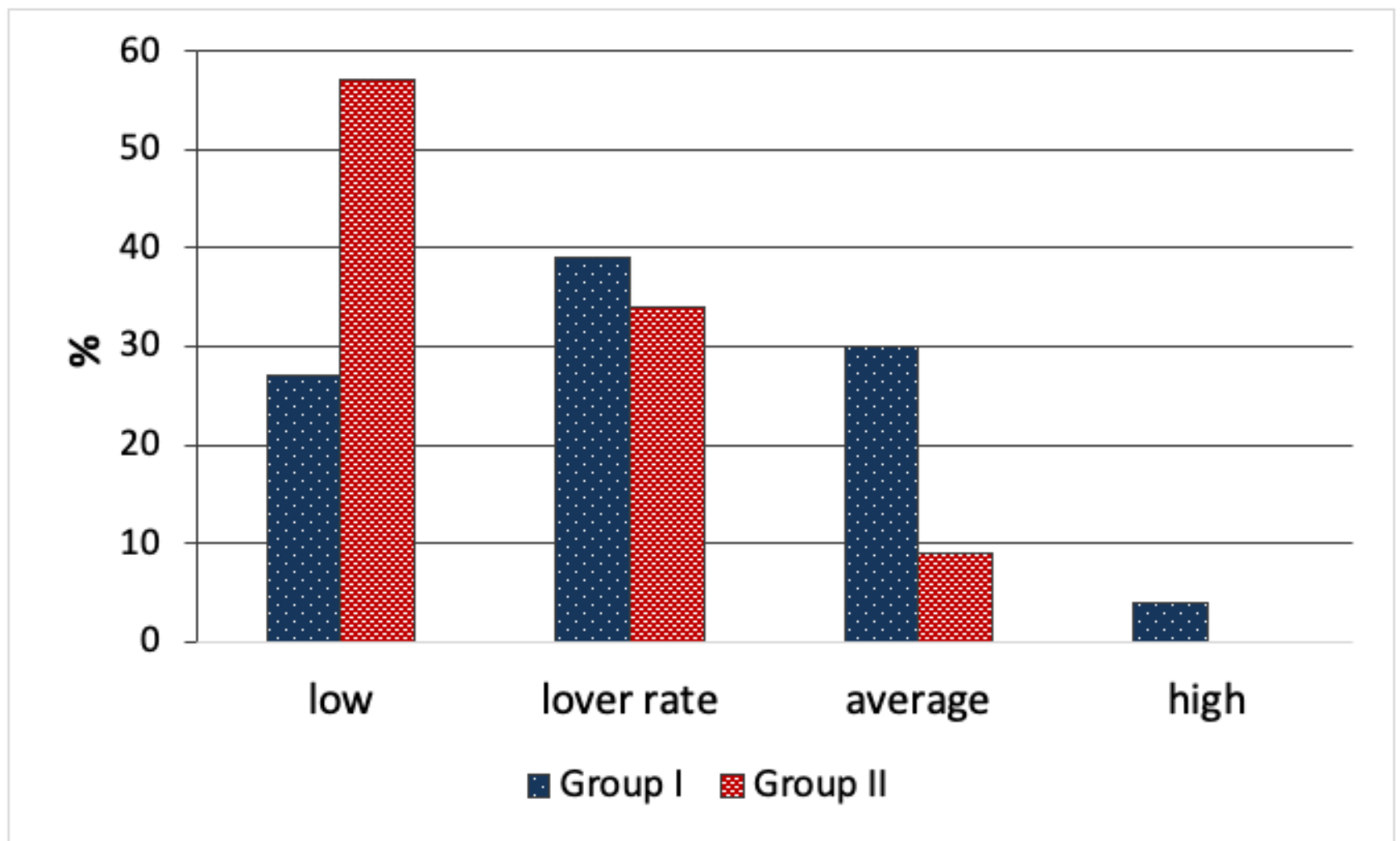
RS, standard units	1,4±0,1	0,9±0,1*	0,02
FCL, standard units	2,6±0,2	2,2±0,2	-

Note: p-level - significant differences in the average indicators between the studied groups (with $p \leq 0.05$).

The averages of the studied CNS functional state indicators are lower than the standard values. Comparison of the calculated criteria average values for assessing the CNS functional state with the capacity levels allowed to establish that the CNS functional state of teachers of the first group was at the slightly reduced capacity level of in terms of RS and FCL (lower limit of normal human performance), and in terms of SFL was in the range of reduced capacity. The average indicators of teachers of the second group in terms of SFL and RS corresponded to the values of reduced capacity, the FCL indicator was within the range of slightly reduced capacity.

Next, we analyzed the capacity level according to the assessment of the CNS functional state (see Fig. 2).

Figure 2
The distribution of surveyed teachers groups according to the CNS capacity level, %



The frequency distribution of the CNS performance individual indicators revealed significant differences in the teachers' populations of the first and second groups ($\chi^2 = 8.45$; $p = 0.04$). Analysis of the teachers' capacity level results showed that for the majority of surveyed teachers of the first group (about 70%), the optimal capacity level is typical. At the same time, 40% of the surveyed teachers of the first group showed a slightly reduced capacity, which occurs in the initial stages of fatigue and is characterized by a weakening of perceptual processes, psychomotor activity support, an increased number of mistakes and the task execution time. When performing work in this functional state, an insignificant tension of the examined body's regulatory mechanisms takes place. Unsatisfactory capacity indicators are inherent to 30% of the surveyed teachers of the first group. The lowest capacity level, indicating the CNS deep inhibition predominance, was recorded in isolated cases of the first group examined total mass.

Indicators of normal capacity level peculiar to less than 10% of teachers of the second

group. The lowest capacity level, arising from fatigue or the initial stages of the disease and characterized by predominance of inhibitory processes in the CNS, was found in the prevailing (more than 55% of the examined) number of teachers of this age group. One third of the examined patients showed a slightly reduced level of capacity.

4. Conclusions

1. The results obtained during the study indicate low index of psychological component of secondary school teachers' health, which is reflected in the prevailing number of those examined with signs of neuropsychic exhaustion state - emotional burnout, reduced CNS functional state.
 2. Analysis of the obtained data allowed to conclude that with the increase of teachers' pedagogical experience, there is an increase in disadaptation processes and pathological states in the teachers' health state. Significant differences in the motivational and value-based attitude to health, emotional burnout phases and symptoms severity, psychophysiological indicators, were revealed, reflecting the age-related decline in satisfying health indicators.
 3. On the basis of the obtained data, it is appropriate to use health-saving technologies of psychological and pedagogical assistance of professional secondary school teachers' activity, aimed at developing health competence, preserving and strengthening the teachers' psychological and functional health.
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