

Prevention of Professional Burnout of Teachers

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Abstract—A comprehensive study of the risk factors of occupational burnout of teachers of primary general education, secondary general education and further education was conducted. Reliable associations between working conditions (including psychosocial work factors), health, and occupational burnout among teachers were established. The development of prevention strategies for occupational burnout of teachers is based on an integrated approach to the assessment of working conditions and the health of teachers, taking into account the organizational practice of the administration of educational institutions

Keywords—*working conditions of teachers, psychosocial work factors, occupational burnout, occupational burnout prevention strategies*

I. INTRODUCTION

Currently, the Russian education system undergoes reformation based on its changes in accordance with international acts and agreements: the development and implementation of federal state educational standards, the introduction of new wage systems, the modernization of the advanced training system, the development of a professional teacher standard, approbation of public and state school management mechanisms, etc. At the same time, the education reform places high demands to the personal qualities of teachers, as well as to occupational.

The nature of working conditions of a modern teacher is characterized by the increasing role of psychosocial work factors predisposing the development of psycho-emotional overload, occupational stress and burnout [1, 2, 3].

Neuroemotional stress in teachers is associated with the risk of somatic and mental disorders [4, 5, 6]. At the same time, psychosocial work factors, especially those associated with work organization, have a greater effect on mental health than on physical health [7, 8].

Presence of emotional stress, the intensity of work contributes to the depletion of adaptive mechanisms and professional maladjustment of teachers [9, 10]. For the prevention of health disorders of teachers, it is important to ensure the realization of health-saving activities [11], strengthening of psychological health in the workplace [12], introduction of prediction models that increase the effectiveness of preventive measures [13].

At the same time, the issues of comprehensive assessment of psychosocial production factors and working conditions of teachers, their contribution to the development of occupational burnout and other health problems remain poorly studied. To date, the special assessment of working conditions (SAWC) does not include measurements of the intensity of the labor process (intellectual, emotional and sensory loads). The development of prevention system for occupational burnout based on an integrated approach to preserve teachers' health is an important problem.

II. OBJECTIVE

Comprehensive assessment of working conditions (including psychosocial work factors) and the health status of teachers, to develop measures to prevent occupational burnout.

III. METHODOLOGY

The principles of system analysis of the workers' health risks under the influence of work factors are used as the base methodology.

We used a set of modern methods and research methods: analytical (analysis of maps of special assessment of working conditions, periodic medical examinations of teachers, teacher questionnaires, time cards, teachers' profессиograms), hygienic (time of working and non-working time of a teacher), psychological (assessment of psychosocial work factors, assessment of distress, depression, anxiety and somatization, assessment of neuropsychic maladjustment, assessment of occupational and emotional burnout), methods of studying the quality of life, modern methods of mathematical statistics. This allowed establishing the association between working conditions, including psychosocial work factors, and indicators of the health status of teachers, to develop a prognostic model and algorithm for the prevention of occupational burnout.

IV. MATERIALS AND METHODS

Female teachers of primary general (n = 91), secondary general (n = 195) and additional education (n = 105) were selected as the subjects of this study. All teachers (n = 391) gave voluntary informed consent to participate in the study.

In the study "Teacher's Questionnaire" and "Time card of the teacher's working and non-working time" developed by the authors were used, taking into account the scale of the short version of the Copenhagen psychosocial questionnaire COPSOQ II, sociological questionnaires for the mass survey "Chronometric and sociological analysis" [14], a special questionnaire by Y. G. Ilchenko [15], and Work Ability Index (WAI) [16]. The "Teacher's questionnaire" contains sections on social status and working conditions as well as on psychosocial work factors in the workplace and teachers' work ability.

The analysis of the goals, objectives, means, working conditions, and the subject of teachers' work was carried out while compiling profессиograms. The recommendations by E.A. Klimov [17] and V.V. Pchelina [18] were used. In addition, professional standards of teachers were taken into account, to address goals, work functions, work actions, necessary skills and knowledge.

For an in-depth study of the health status of teachers, special questionnaires were applied.

Neuropsychiatric Disadaptation Questionnaire (NDQ) [19] is designed to diagnose the states of disadaptation, and self-assessment of nervous and somatic well-being. To separate the clinical manifestations of distress and somatization, depression and anxiety, the Four-Dimensional Symptom Questionnaire (4DSQ) [4] was used. For the subjective assessment of the physical and mental components of health, the translated version of the Short Form Medical Outcomes Study (SF-36) [21, 22] was used, adapted by the Multinational Center for Quality of Life Research (St. Petersburg, 1998).

The adaptive potential of the circulatory system was analyzed to determine the functional change index (FCI) [23]. To assess life expectancy and the risk of death from cardiovascular diseases, the Score (Systemic coronary risk

evaluation) scale was used [24]. To clarify the clinical and behavioral criteria for health, we used the Ideal Cardiovascular Health Score (ICHS) developed by the American Heart Association (AHA), 2014 [25]. Individual occupational risk (IOR) for teachers of various levels of education was determined in accordance with the "Methodology for calculating individual occupational risk depending on the working conditions and health status of the employee" [26].

The psychosocial characteristics of the examined teachers were studied according to the criteria determined by the Maslach Burnout Inventory (MBI C. Maslach and S.E. Jackson (1982)), adapted for teachers and professors of the higher education by N.V. Vodopyanova, E.S. Starchenkova (2005) [27], as well as the "Burnout Syndrome" questionnaire (BSQ) by V.V. Boyko (1999) [28]. The MBI questionnaire is used to evaluate the following indicators of professional burnout: emotional exhaustion, depersonalization, reduction of professional accomplishments. The emotional component of professional burnout associated with phases of stress (tension, resistance and exhaustion) was evaluated using the BSQ. To determine the effort – reward imbalance (Siegrist J., 2004) [29], the Effort – Reward Imbalance (ERI) questionnaire was used.

V. RESULTS AND DISCUSSION

The analysis of the SAWC cards showed that working conditions of teachers complied with the 2nd (permissible) class; however, research on intellectual and emotional stress has not been conducted.

For the specification of factors of working environment and the work process of teachers, additional methods were used. According to the time cards, teachers' work is characterized by considerably long working hours (regular and irregular working time) 13.65 ± 1.34 hours per day on average, which allows us to classify work mode as 3.2 based on the intensity of the work process. The total standing time was on average 56% (3.1 class of working conditions based on the severity of the work process). The total voice load for teachers was more than 25 hours per week, which corresponds to class 3.2 of working conditions according to the severity of the work process.

The survey of teachers confirmed the presence of strain in the work process according to the mode of work (actual working hours), which corresponds to class 3.2 of working conditions.

The analysis of profессиograms showed that the working conditions of teachers in terms of the intensity of the work process (emotional load) can be attributed to class 3.2, and according to intellectual load - to class 3.1.

According to the questionnaire, the following most significant psychosocial work factors were identified: dissatisfaction with work schedule (43.8%), wages (41.6%), workflow organization (27.9%), work optimization (14.8%). 19.2% to 49.1% of subjects claimed doing work not covered by the norms of pedagogical activity; discontinuation of the period of leave (early return to work from leave) on average was present in 26.9% of teachers. About 15% of teachers noted complaints from students (or their parents) in their address. The desire to change job was expressed by 21.3% of teachers, desire to change profession - by 15%. The

considerable working time (55%) and insignificant time (9% each) for household chores and hobbies indicates an imbalance between work and personal life of teachers.

Assessment of teachers' health according to the results of routine medical examinations (RME) revealed that cardiovascular diseases (CVD) were the most frequent ones (63%), 28% of these cases were hypertensive. A significant ($p < 0.05$) decrease in quality of life was found in the physical (21.7%) and psychological (20.7%) components of health. According to the FCI, unsatisfactory adaptation and adaptation failure are found in 21.2% and 16.6%, respectively. The total coronary risk (according to the SCORE scale) among teachers was more often defined as medium (91%). High level of CVD contribution to comorbidity status is confirmed by the total cardiovascular risk and comorbidity index ($r = +0.59$, $p < 0.0001$). "Ideal cardiovascular health" was found in a small number of individual cases.

When analyzing the association between working conditions (including psychosocial work factors) and health status of teachers with occupational burnout (OB), the following data were obtained.

Of the total number of teachers studied ($n = 391$), OB was detected in 39.1%, mostly among secondary education teachers (44%). Teachers with OB were significantly ($p < 0.005$) older (49.2 ± 8.1 years) and had a longer pedagogical experience (25.2 ± 8.4) than teachers without burnout. Teachers with OB were characterized by high levels of emotional exhaustion (27%), depersonalization (20%), decrease of personal achievements (25%). Significant correlation relationship ($r = 0.215$, $p \leq 0.05$) has been established in primary education teachers between work experience and the development of depersonalization. In secondary education teachers, significant correlations between work on weekends (holidays) and the development of emotional exhaustion ($r = 0.149$, $p \leq 0.05$) and depersonalization ($r = 0.235$, $p \leq 0.01$) were determined. Cases of teachers of additional education revealed a significant correlation relationship ($r = 0.196$, $p \leq 0.05$) between the time spent on preparing students for exams and the development of emotional exhaustion.

Burnout in teachers with OB was characterized by the development of the phases of strain, resistance and exhaustion (14%, 29% and 16%, respectively). In primary education teachers, the most significant correlations were found between the time spent preparing students for exams and the development of exhaustion ($r = 0.339$, $p \leq 0.01$) and emotional deficiency ($r = 0.29$, $p \leq 0.01$). Work on weekends (holidays) was reliably associated with the development of personal detachment ($r = 0.282$, $p \leq 0.01$). In secondary education teachers, work on weekends (holidays) was most often associated with various manifestations of burnout: resistance ($r = 0.25$, $p \leq 0.01$), inadequate selective emotional response ($r = 0.203$, $p \leq 0.01$), reduction of professional duties ($r = 0.213$, $p \leq 0.01$), personal detachment ($r = 0.2$, $p \leq 0.01$). Teachers of additional education revealed a significant association between experience and development of exhaustion ($r = 0.219$, $p \leq 0.05$) and emotional deficiency ($r = 0.226$, $p \leq 0.05$); between indicator of work on weekends (holidays) and the experience of stressful circumstances ($r = 0.201$, $p \leq 0.05$); between time spent preparing students for

exams and the expansion of the sphere of economy of emotions ($r = 0.235$, $p \leq 0.05$).

According to the results of the questionnaire, teachers with OB more frequently worked above the norm than teachers without OB (92% versus 81%) as well as worked on weekends (holidays) (39% versus 29%). Significant difference was found in teachers with OB compared with teachers without OB for the following psychosocial factors: dissatisfaction with the organization of the work process, work schedule, wages, presence of complaints from students (and their parents) to the teacher (16%, 47%, 58%, 12% versus 8%, 34%, 38%, 3%); an insufficient number of teaching aids and modern teaching materials in the workplace (21% against 13%). Imbalance of efforts - rewards (according to the ERI questionnaire) was the additional characteristic of the psychosocial working environment of teachers. An imbalance with a shift towards efforts was found in 85.6% of teachers with OB.

In teachers with OB, circulatory illnesses prevailed (55%), as well as their high comorbidity with diseases of endocrine system (29%), musculoskeletal system diseases (20%) and respiratory disease (18%). A correlation was established between the Score and Charlson Comorbidity indices ($r = +0.59$; $p < 0.0001$). A significant decrease in the 10-year survival rate (in%) was found in teachers with OB (87.2 ± 14.3 vs. 89.9 ± 12.0 , $p < 0.043$). Teachers with OB showed significant increase in the IOR above average ($p = 0.006$). Work Ability Index (WAI) showed that teachers with OB significantly more often reported "poor" performance than teachers without OB.

The most significant factors associated with the development of OB in teachers are identified. One-year increase in work experience leads to increase in the odds of OB development by 2% (OR = 1.03, 95% CI: 1.01-1.05, $p = 0.004$). Work on weekends (holidays) increases these odds by 61% (OR = 1.85, 95% CI: 1.16-2.96, $p = 0.01$). One-hour increase in time spent on preparing students for exams is accompanied by an increase in the odds of OB by 72.6% (OR = 7.61, 95% CI: 1.14-50.72, $p = 0.03$). The increase in dissatisfaction with the mode of operation is associated with increased chances of PV by 42% (OR = 0.55, 95% CI: 0.35-0.87, $p = 0.01$). An increase in the number of complaints from students (and their parents) to teachers leads to an increase in the odds of OB by 41.3% (OR = 4.03, 95% CI: 1.47-11.05, $p = 0.006$). The desire to change place of work is associated with an increase in the odds of OB by 24.9% (OR = 3.86, 95% CI: 1.77-8.45, $p = 0.0007$). The lack of teaching aids is associated with an increase in OB odds by 40.7% (OR = 0.55, 95% CI: 0.3-0.99, $p = 0.04$). One-hour increase in the time spent by the teacher on work conversations leads to increase in the OB odds by 1.4% (OR = 0.31, 95% CI: 0.11-0.92, $p = 0.03$). The above-mentioned factors were included in the risk prediction model for the development of occupational burnout, making it possible to single out groups with high and low risk of burnout during routine medical examinations of teachers.

On the basis of the research, a "Portrait of a female teacher with occupational burnout" was developed, which is characterized by a complex of parameters: age 49.2 ± 8.1 years; work experience on average 25.2 ± 8.4 years; long working hours and irregular working hours; dissatisfaction

with the organization of the workflow, work hours, wages, general state of health, general psycho-emotional state; necessity of the prevention of OB in professional psychological and (or) psychiatric care; desire to change jobs; complaints of students (and their parents) to the teacher; work and personal life imbalance, effort-reward imbalance.

Thus, a comprehensive study of the risk factors of occupational burnout of teachers of primary, secondary and additional education has established reliable associations between occupational burnout, psychosocial work factors, working conditions and health status. The prediction model for the risk of developing occupational burnout allowed us to single out a high-risk group to inform workers about the likelihood of health damage in the work process, as well as to justify the employer's priority measures aimed at reducing occupational risk. The use of an integrated approach to assess teachers' working conditions, psychosocial work factors, state of health as well as organizational practice of the employer facilitates the development of an algorithm to prevent occupational burnout of teachers, which includes assessment (of teachers' working conditions, psychosocial work factors, health status, risk of burnout using a prediction model) and development of a complex of measures (organizational, interpersonal and individual) for the prevention of OB.

VI. CONCLUSION

Scientific substantiation of the prevention system of occupational burnout of teachers takes into account a comprehensive assessment of working conditions, including psychosocial work factors, and the state of health of teachers. Risk assessment of occupational burnout is based on prediction model. The determined risk level helps to develop and determine the scope and content of a set of measures (organizational, interpersonal and individual) for the prevention of occupational burnout.

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