

ABSTRACT

**for the dissertation thesis by Sergey Vadimovich Lee entitled
“Disturbances of Mental Adaptation in Primary Health Care Physicians and
Methods of Short-Term Psychotherapy” submitted in fulfillment of the
requirements for the degree of Doctor of Philosophy (PhD) in the specialty
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Relevance of the Research Topic

The professional activity of healthcare workers is among the most emotionally demanding and stress-intensive types of occupations. Continuous psycho-emotional strain, a high degree of responsibility for patients' lives and health, the necessity of making decisions under time constraints, intensive interpersonal interactions, and excessive workload create preconditions for the development of mental adaptation disorders and burnout syndrome (Karr, West, & Shanafelt).

Burnout syndrome is regarded as an occupationally induced condition characterized by emotional exhaustion, depersonalization, and reduced professional self-esteem. Emotional exhaustion manifests as a sense of inner depletion, chronic fatigue, and diminished emotional involvement in professional activities. Depersonalization is characterized by emotional distancing, reduced empathy, and the development of cynical attitudes toward patients and professional responsibilities. Reduced personal accomplishment is associated with feelings of professional inadequacy, loss of job satisfaction, and decreased motivation (Schwenk & Gold; West, Dyrbye, & Shanafelt).

According to international studies, the prevalence of burnout syndrome among healthcare professionals exceeds 50% in a number of countries (Ziad et al.; Bhagavathula et al.; Hämmig). The risk of burnout is particularly high among primary healthcare (PHC) physicians, whose work is associated with a high workload, large patient volumes, limited consultation time, and the need to make decisions under conditions of diagnostic uncertainty (Ajzoub Perez et al.; Montero-Marin et al.).

In the Republic of Kazakhstan, burnout among healthcare workers represents a particularly pressing issue. Analysis of the PHC system has demonstrated that a general practitioner sees, on average, approximately 25 patients per day, which significantly exceeds the workload reported in several European countries. High workload, workforce shortages, limited psychological support resources, and organizational challenges within the healthcare system contribute to chronic occupational stress and impaired mental adaptation (Order of the Ministry of Health of the Republic of Kazakhstan No. 238; Koshova & Krut).

Mental adaptation disorders negatively affect not only the health and well-being of healthcare workers but also the quality of medical care provided. Burnout is associated with decreased professional performance, an increased risk of medical errors, impaired physician–patient interactions, the development of depressive and anxiety disorders, psychosomatic conditions, and professional maladjustment (Zha et al.; Kim et al.; Rodziewicz & Hipskind).

Despite the substantial body of research devoted to burnout, the development of accessible and effective methods for the prevention and psychotherapeutic correction of mental adaptation disorders among healthcare professionals remains insufficiently explored. Particular attention has been paid to coping strategies, which are defined as a set of cognitive, emotional, and behavioral mechanisms used to manage stressful situations. The development of adaptive coping strategies contributes to reducing psycho-emotional distress, enhancing stress resilience, and

improving professional adaptation among healthcare workers (Lazarus & Folkman; Ebata & Moos).

Contemporary short-term psychotherapeutic approaches focused on the development of adaptive coping strategies have demonstrated effectiveness in addressing the mechanisms underlying burnout, reducing occupational stress, and improving the mental adaptation of healthcare professionals (Björk et al.; van Beurden et al.; Rodríguez-Rey et al.). However, studies evaluating the effectiveness of such interventions among primary healthcare workers in the Republic of Kazakhstan are virtually absent. This gap determines the scientific relevance and practical significance of the present study.

Aim of the Dissertation Research

To scientifically substantiate the effectiveness of a short-term psychotherapy method based on the development of adaptive coping strategies for improving indicators of psychological adaptation and reducing the risk of emotional burnout among primary health care workers in the Republic of Kazakhstan.

Objectives of the Study

1. To investigate the causes of burnout and the factors influencing mental adaptation among PHC healthcare workers.
2. To assess the prevalence of burnout among PHC healthcare workers in the Republic of Kazakhstan.
3. To develop and pilot a short-term psychotherapy method based on the formation of adaptive coping strategies for the prevention of burnout among PHC healthcare workers.
4. To evaluate the effectiveness of the developed short-term psychotherapy method in reducing burnout and improving adaptive coping strategies among PHC healthcare workers within the framework of a randomized controlled trial.
5. To develop practical recommendations for implementing the short-term psychotherapy method into the routine activities of PHC organizations in order to reduce burnout among healthcare workers.

Materials and Methods

The study was conducted on the basis of primary health care organizations in the Republic of Kazakhstan and consisted of two stages. The total sample included 10,702 volunteers among PHC healthcare workers. During the first stage, 10,459 respondents were examined, including 2,595 physicians, 5,612 nurses, and 2,252 healthcare managers. During the second stage, 243 volunteers with signs of burnout were enrolled in a randomized controlled trial.

The study was conducted in accordance with ethical principles and approved by the Local Ethics Committee of Asfendiyarov Kazakh National Medical University (Protocol No. 4(81), dated March 27, 2019).

The following methods were used in the study:

- clinical research methods;
- psychological methods;
- sociological methods;
- statistical data analysis.

Burnout was assessed using the Maslach Burnout Inventory (MBI), which evaluates emotional exhaustion, depersonalization, and reduced personal accomplishment. Coping strategies were assessed using the Lazarus Stress and Coping Inventory.

The developed short-term psychotherapy method was based on the formation of adaptive coping strategies, development of self-regulation skills, emotional self-control, introspection, and resilience to occupational stress. The effectiveness of the method was assessed before the intervention, as well as 6 and 12 months after the psychotherapeutic intervention.

Statistical processing of the results was performed using modern biostatistical methods.

Main Results of the Study

A total of 10,702 primary healthcare (PHC) workers from the Republic of Kazakhstan were included in the study. During the first stage, 10,459 respondents were surveyed, including 2,595 physicians, 5,612 nurses, and 2,252 healthcare managers. The study covered healthcare organizations across 17 regions of Kazakhstan and provided representative data on the prevalence of burnout syndrome and mental adaptation disorders among PHC workers. During the second stage, a randomized controlled trial (RCT) was conducted involving 243 PHC workers who were allocated to either the intervention or control group.

The findings demonstrated a high prevalence and severity of burnout syndrome among PHC workers in Kazakhstan. Signs of burnout of varying severity were identified in 67.8% of participants. High levels of emotional exhaustion were observed in 38.2% of respondents, depersonalization in 33.4%, and reduced personal accomplishment in 41.5%. These results indicate a substantial psycho-emotional burden among PHC workers and confirm the significance of mental adaptation disorders within the healthcare system of Kazakhstan.

The study revealed statistically significant effects of professional, demographic, and social factors on the development of burnout syndrome. The highest level of emotional exhaustion was observed among physicians aged 18–39 years, with a mean MBI score of 3.81 ± 0.45 , whereas physicians older than 60 years demonstrated significantly lower levels (3.28 ± 0.40). Among nurses aged over 60 years, a reduced risk of emotional exhaustion was also identified (OR 0.73; 95% CI 0.57–0.93; $p = 0.023$). Female physicians were less likely to experience emotional exhaustion (OR 0.82; 95% CI 0.67–0.99; $p = 0.015$) and depersonalization (OR 0.77; 95% CI 0.63–0.94; $p = 0.023$) compared with their male counterparts. At the same time, physicians with postgraduate education exhibited a higher likelihood of depersonalization (OR 1.27; 95% CI 1.06–1.51; $p = 0.010$), while also demonstrating higher levels of personal accomplishment (OR 1.35; 95% CI 1.12–1.61; $p = 0.014$).

Professional experience was found to have a substantial impact on burnout levels. The lowest risk of emotional exhaustion was observed among physicians with 11–20 years of professional experience (OR 0.69; 95% CI 0.57–0.85; $p = 0.014$), whereas healthcare workers with less than five years of experience demonstrated the highest depersonalization scores (3.34 ± 0.48). These findings suggest insufficient

development of adaptive coping mechanisms among young specialists and their increased vulnerability to occupational maladaptation.

Several key occupational risk factors for burnout and impaired mental adaptation were identified. The most significant factors included a workload exceeding 120 consultations per week, working hours longer than 10 hours per day, insufficient organizational and social support, poor work–life balance, chronic occupational stress, and inadequate adaptive coping mechanisms. Additionally, 21.2% of participants reported sleeping less than six hours per day, which was also associated with an increased risk of emotional exhaustion and psychological maladaptation.

Statistically significant regional differences in burnout levels were observed across Kazakhstan. The highest levels of emotional exhaustion were recorded among healthcare workers in Shymkent (EE 3.71 ± 0.46 ; DP 3.41 ± 0.48) and Pavlodar Region (EE 3.63 ± 0.44 ; $p = 0.012$). In contrast, the highest levels of personal accomplishment were identified among healthcare workers in Turkestan and Pavlodar regions (4.12 ± 0.50), suggesting the influence of regional organizational and social factors on professional adaptation.

At baseline assessment within the randomized controlled trial, the mean emotional exhaustion score measured using the Maslach Burnout Inventory (MBI) was 28.1 ± 2.8 in the intervention group and 27.4 ± 3.2 in the control group. No statistically significant differences were identified between the groups prior to the intervention ($p = 0.059$), confirming their comparability and the adequacy of the randomization procedure.

The developed short-term psychotherapy method, based on the formation of adaptive coping strategies, consisted of sequential stages including differentiation of emotional states, self-observation, awareness of psychological conditions, work with internal imagery, and the development of adaptive behavioral patterns. The intervention was designed to enhance adaptive coping mechanisms, reduce emotional distress, and increase resilience to occupational stressors.

The randomized controlled trial demonstrated the statistically significant effectiveness of the developed short-term psychotherapy intervention. Six months after the intervention, emotional exhaustion in the intervention group decreased from 28.1 to 24.7 points, whereas it remained virtually unchanged in the control group (28.3 points; $p = 0.019$). After 12 months of follow-up, emotional exhaustion in the intervention group decreased further to 18.9 ± 4.9 points compared with 29.2 ± 1.9 points in the control group ($p = 0.017$), indicating a substantial and sustained therapeutic effect.

A statistically significant reduction in depersonalization and improvement in personal accomplishment were also observed. At 12 months, the depersonalization score in the intervention group was 8.4 ± 1.3 compared with 11.2 ± 0.9 in the control group ($p = 0.010$), while personal accomplishment scores were significantly higher in the intervention group (42.2 ± 3.9 versus 33.1 ± 1.9 , respectively; $p = 0.021$). These findings confirm the positive impact of the intervention not only on emotional exhaustion but also on professional motivation and job satisfaction.

The intervention also positively influenced the development of adaptive coping strategies. Scores for action planning and positive reappraisal increased from 3.2 ± 0.7 to 4.4 ± 0.5 ($p = 0.021$), whereas maladaptive responses, including self-blame, confrontation, and avoidance, significantly decreased ($p < 0.05$). The adaptive coping index increased from 32.7 ± 4.2 to 45.8 ± 3.9 points ($p < 0.01$), indicating the development of more effective psychological mechanisms for coping with stress.

Implementation of the developed short-term psychotherapy method within PHC organizations was associated with a reduction in the proportion of healthcare workers experiencing high levels of burnout from 42.5% to 23.1% ($p < 0.05$). Educational training sessions and psychoprophylactic interventions contributed to enhanced stress resilience, improved mental adaptation, and better professional functioning among healthcare workers.

Based on the study findings, practical recommendations for the diagnosis, prevention, and psychotherapeutic correction of mental adaptation disorders among PHC workers were developed. The proposed method has been implemented in healthcare organizations in Kazakhstan, as confirmed by implementation certificates and 16 copyright certificates. The results support the inclusion of coping-based short-term psychotherapy programs within national strategies aimed at preventing professional burnout among PHC workers in the Republic of Kazakhstan.

Scientific Novelty

1. For the first time in the Republic of Kazakhstan, a comprehensive study of burnout prevalence among PHC workers was conducted using a large sample of healthcare professionals.
2. The main occupational and psychosocial risk factors contributing to mental adaptation disorders among PHC healthcare workers were identified.
3. A scientifically substantiated short-term psychotherapy method based on the formation of adaptive coping strategies was developed.
4. The statistically significant effectiveness of the short-term psychotherapy method in burnout prevention was demonstrated.
5. An algorithm for diagnosis, prevention, and psychotherapeutic correction of mental adaptation disorders among PHC workers was developed.

Main Provisions Submitted for Defense

1. Burnout among PHC workers in the Republic of Kazakhstan is characterized by a high prevalence and represents a significant medical and social problem.
2. Mental adaptation disorders among healthcare workers are associated with the influence of a complex of occupational and psychosocial factors.
3. A short-term psychotherapy method based on coping strategies is an effective approach for the prevention of burnout.
4. The application of the short-term psychotherapy method contributes to the development of adaptive stress-coping mechanisms and improvement of mental adaptation among healthcare workers.
5. The diagnostic instruments used in the study demonstrate high informativeness and allow objective evaluation of the effectiveness of psychotherapeutic interventions.

Practical Significance of the Results

The developed short-term psychotherapy method can be implemented into the practical activities of PHC organizations in the Republic of Kazakhstan for the prevention of burnout and improvement of the mental health of healthcare workers. The practical significance of the study lies in:

- the possibility of early identification of mental adaptation disorders;
- the use of psychodiagnostic screening among healthcare workers;
- increasing staff stress resilience;
- reducing the risk of professional deformation;
- improving the quality of medical care;
- developing practical recommendations for the psychoprophylaxis of burnout.

Personal Contribution of the Doctoral Candidate

The doctoral candidate independently conducted:

- analysis of domestic and international scientific literature;
- development of the study design;
- collection and analysis of primary data;
- clinical and psychological assessment of participants;
- implementation of psychotherapeutic interventions;
- statistical processing of the results;
- interpretation of the obtained data;
- preparation of scientific publications and practical recommendations.

Conclusions

1. It was established that the level of burnout among PHC healthcare workers is significantly influenced by age, sex, educational level, work experience, and region of residence. Physicians aged 40–60 years demonstrated a lower risk of emotional exhaustion compared to specialists aged 18–39 years (OR 0.75, 95% CI [0.60–0.93], $p = 0.012$), while nurses over 60 years of age also showed a reduced risk (OR 0.73, 95% CI [0.57–0.93], $p = 0.023$). Female physicians demonstrated a lower probability of developing emotional exhaustion (OR 0.82, 95% CI [0.67–0.99], $p = 0.015$) and depersonalization (OR 0.77, 95% CI [0.63–0.94], $p = 0.023$). Physicians with postgraduate education more frequently demonstrated signs of depersonalization (OR 1.27, 95% CI [1.06–1.51], $p = 0.01$), while simultaneously showing higher levels of personal accomplishment (OR 1.35, 95% CI [1.12–1.61], $p = 0.014$). The lowest levels of emotional exhaustion were registered among physicians with 11–20 years of professional experience (OR 0.69, 95% CI [0.57–0.85], $p = 0.014$). The main occupational determinants of burnout included workloads exceeding 120 consultations per week, working days longer than 10 hours, insufficient organizational and social support, and imbalance between professional and personal life. The primary risk factors were chronic occupational stress, excessive workload, and insufficient adaptive coping mechanisms.

2. The prevalence of burnout among PHC workers remains high. Among 10,459 examined specialists, including 2,595 physicians, 5,612 nurses, and 2,252 managers, signs of burnout of varying severity were identified in 67.8% of participants. High

levels of emotional exhaustion were observed in 38.2%, depersonalization in 33.4%, and reduced personal accomplishment in 41.5% of respondents. Among physicians aged 18–39 years, the mean MBI scale scores were EE 3.81 ± 0.45 and DP 3.24 ± 0.50 , while among nurses the corresponding scores were EE 3.72 ± 0.44 and DP 3.30 ± 0.46 . The highest levels of emotional exhaustion were observed among specialists working in Shymkent (EE 3.71 ± 0.46 , DP 3.41 ± 0.48) and Pavlodar Region (EE 3.63 ± 0.44 , $p = 0.012$), whereas the highest indicators of personal accomplishment (4.12 ± 0.50) were registered in Turkestan and Pavlodar Regions. The formation of adaptive coping strategies contributes to improved mental adaptation among healthcare workers.

3. The developed short-term psychotherapy method based on coping strategies, including sequential stages of differentiation, self-observation, awareness of one's condition, work with internal imagery, and formation of environmentally adaptive behavior, demonstrated a statistically significant reduction in burnout levels and increased effectiveness of adaptive coping responses. Indicators of action planning and positive reappraisal increased from 3.2 ± 0.7 to 4.4 ± 0.5 ($p = 0.021$), whereas the severity of self-blame and avoidance significantly decreased ($p < 0.05$).

4. A randomized controlled trial conducted among 243 physicians from 16 outpatient clinics confirmed the statistically significant effectiveness of the short-term psychotherapy method. After 12 months of follow-up, the level of emotional exhaustion in the control group was 29.2 ± 1.9 points, whereas in the intervention group it was 18.9 ± 4.9 ($p = 0.017$). Depersonalization scores were 11.2 ± 0.9 versus 8.4 ± 1.3 ($p = 0.01$), and personal accomplishment scores were 33.1 ± 1.9 versus 42.2 ± 3.9 ($p = 0.021$), respectively. The adaptive coping strategies index increased from 32.7 ± 4.2 to 45.8 ± 3.9 ($p < 0.01$). At the same time, the severity of maladaptive reactions significantly decreased, including confrontation from 12.1 to 5.8 ± 0.3 , avoidance to 6.1 ± 0.7 , and negative reappraisal to 8.1 ± 2.4 ($p = 0.01$).

5. Implementation of the method in PHC institutions and organization of educational training sessions reduced the proportion of workers with high levels of burnout from 42.5% to 23.1% ($p < 0.05$), confirming its effectiveness and supporting its inclusion in programs aimed at preventing mental maladaptation among PHC physicians and nurses.

Approbation of the Dissertation Results

The main provisions and results of the dissertation research were presented and discussed at international and national scientific and practical conferences, scientific seminars, interdepartmental meetings, and educational events devoted to issues of mental health, burnout among healthcare workers, medical psychology, psychotherapy, communication skills, and the organization of primary health care.

The results of the study were approbated at meetings of the Department of Communication Skills of Asfendiyarov Kazakh National Medical University, interdepartmental scientific seminars, as well as during scientific and practical events dedicated to mental health issues and the prevention of professional burnout among healthcare workers.

The principal results of the dissertation research were presented at:

- the VI International Scientific and Practical Conference “Current Issues of Communication Skills, Psychology, and Social Work in Medicine”;
- the VII International Scientific and Practical Conference “Current Issues of Communication Skills, Psychology, and Social Work in Medicine”.

During the approbation process, the results of the study on the prevalence of burnout among PHC workers in the Republic of Kazakhstan, data from the randomized controlled trial evaluating the effectiveness of the short-term psychotherapy method based on coping strategies, as well as the results of dynamic follow-up at 6 and 12 months after psychotherapeutic intervention were presented. The developed short-term psychotherapy method was implemented and tested in medical organizations of the Republic of Kazakhstan, as confirmed by implementation certificates and author’s certificates of the Republic of Kazakhstan.

Publications

Based on the results of the dissertation research, 13 scientific publications were published, including:

- 9 articles in journals recommended by the Committee for Quality Assurance in Science and Higher Education of the Republic of Kazakhstan;
- 2 articles in scientific journals indexed in the international Scopus database;
- 2 articles published in the proceedings of international conferences.

Scope and Structure of the Dissertation

The dissertation consists of an introduction, four chapters, a conclusion, conclusions, practical recommendations, and a bibliography comprising 178 references. The dissertation is presented on 167 pages, including 138 pages of main text and 29 pages of appendices.