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MEDICO-SOCIAL SUBSTANTIATION OF A MODEL FOR EARLY DETECTION AND PREVENTION OF BURNOUT SYNDROME IN HEALTHCARE WORKERS

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Background. Emotional Burnout Syndrome (EBS) among healthcare workers is a pressing public health issue that affects professional performance, patient safety, and healthcare system sustainability. Despite growing recognition, standardized early detection and prevention models remain underdeveloped in Ukraine.

Aim. To conduct medical and social research and develop a model for early detection and prevention of burnout syndrome among healthcare workers.

Materials & Methods. The study employed structural-functional modeling, synthesized from a literature review and empirical research conducted in 2021–2023. The study population comprised 483 healthcare professionals (study group, $n=294$; control group, $n=189$). An index-based approach was applied using integral indicators: Emotional Burnout Index (EBI), Stress Load Index (SLI), Support Index (SI), Access to Help Index (AHI), Learning Readiness Index (LRI), and Work Ability Index (WAI). Risk prediction was performed using Wald's Sequential Probability Ratio Test. The model was validated via expert elicitation (12 experts) on a 10-point scale.

Research Ethics. The study was conducted in accordance with the World Medical Association Declaration of Helsinki (1964–2024). Ethical approval was obtained from the Ethics Committee of Kharkiv National Medical University. All participants provided written informed consent.

Results. Structural changes in burnout prevalence were observed: the proportion of individuals with $EBI < 40\%$ decreased from 354.7‰ to 314.7‰, while those with $EBI > 70\%$ increased from 191.9‰ to 231.9‰. Thirty risk factors were identified, with organizational-managerial determinants showing the strongest effect. Work ability among healthcare workers with burnout symptoms was low (mean WAI, $[42.23 \pm 0.91]\%$). Access to help was limited (mean AHI, 59.18%), with the presence of specialized services significantly increasing the odds of high access (odds ratio, $OR=43.56$; $p < 0.001$). A functional-structural model integrating screening, risk stratification, forecasting, and routing to assistance was developed and validated (mean overall score, $[8.7 \pm 0.6]$ points).

Conclusions. The proposed model ensures standardized index-based screening, risk stratification, forecasting, formalized access to psychotherapeutic assistance, and monitoring of effectiveness, including work ability assessment. Implementation of the model corresponds to contemporary international approaches to mental health governance in the workplace.

Keywords: *social medicine, emotional burnout syndrome, prevention, work ability.*

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Медико-соціальне обґрунтування моделі раннього виявлення та профілактики синдрому вигорання у медичних працівників. Експериментальна і клінічна медицина. 2025;94(4):11с. In press. <https://doi.org/10.35339/ekm.2025.94.4.ivo>

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Abbreviations

- AHI – Access to Help Index
 EBI – Emotional Burnout Index
 EBS – Emotional Burnout Syndrome
 HR – Human Resources
 LRI – Learning Readiness Index
 PC – Prognostic Coefficients
 SI – Support Index
 SLI – Stress Load Index
 SPRT – Sequential Probability Ratio Test
 WAI – Work Ability Index
 WHO – World Health Organization

Introduction

Emotional burnout syndrome among healthcare workers represents a critical challenge for modern health systems, emerging as a direct consequence of chronic occupational stress that has not been effectively mitigated. According to the WHO, burnout is conceptualized strictly as an occupational phenomenon characterized by a triad of symptoms: energy depletion or exhaustion, increased mental distance or negativism toward one's career, and a persistent decline in professional efficacy [1; 2].

The detrimental impact of burnout extends far beyond the individual clinician's well-being; it correlates with increased risks of professional errors, ethical and communication conflicts, diminished productivity, and high staff turnover. These factors collectively undermine the organizational resilience of healthcare institutions. Evidence suggests that fragmented, one-off initiatives are insufficient. Instead, effective mitigation requires a shift toward integrated systems that combine individual psychological interventions with structural organizational solutions aimed at optimizing workloads and enhancing managerial support [3–6].

Under current conditions, the transition from episodic support to reproducible management models is essential. Such models must prioritize standardized screening, objective risk stratification, predictive modeling, and formalized routing to psychotherapeutic (psychological) assistance. This systematic approach aligns with contemporary international recommendations for mental health in the workplace [3; 7] and responds to the evolving regulatory landscape in Ukraine, which increasingly emphasizes psychosocial care and institutional mental health governance [9–11].

Aim of study was to conduct medical and social research and develop a model for early detection and prevention of burnout syndrome among healthcare workers.

Materials and Methods

The study employed a structural-functional modeling method, synthesized from an extensive review of domestic and international burnout prevention strategies and the authors' empirical research conducted between 2021 and 2023. This foundational research encompassed a comprehensive situational analysis, including the assessment of burnout prevalence, identification of key determinants and their impact magnitude, risk forecasting, work ability evaluation, and an audit of existing psychotherapeutic support and organizational training gaps.

The study population comprised 483 healthcare professionals, stratified into a study group (n=294) and a control group (n=189). For quantitative monitoring, an index-based approach was applied using integral indicators: EBI, SLI, SI, AHI, LRI, and the functional indicator – WAI.

Risk prediction was operationalized through SPRT. This method enabled the construction

of a prognostic matrix and the establishment of diagnostic thresholds based on the cumulative sum of prognostic coefficients [8].

The prognostic matrix was constructed using all thirty identified risk factors to preserve the full complexity of the risk structure during the initial model development phase. The diagnostic thresholds ($\sum PC \leq -13, -12$ to $+12, \geq +13$) were derived from the distribution of prognostic coefficients in the study sample, with the ± 13 threshold corresponding to the 95th percentile of the coefficient sum distribution, consistent with Wald's original methodology. Factors with lower informativeness were retained because their cumulative contribution in combination with other factors achieved the predefined diagnostic thresholds; removing them would alter the cumulative sum trajectory and potentially reduce predictive accuracy. Future iterations of the model may explore simplification based on implementation experience.

Finally, the projected efficacy of the developed model was validated via expert elicitation, with evaluators scoring the framework on a standardized 10-point scale.

Research Ethics

The study was conducted in accordance with the principles of the World Medical Association Declaration of Helsinki (1964–2024). Ethical approval was obtained from the Ethics Committee of Kharkiv National Medical University (Protocol No.6 of October 02, 2019). All participants provided written informed consent prior to enrollment. The anonymity and confidentiality of the respondents were ensured throughout the study. The research did not involve any invasive procedures or interventions that could pose a risk to the participants' health.

Results

The study established that during the observation period, structural changes occurred in the prevalence of burnout syndrome across EBI thresholds: in 2023 compared with 2021, the share of individuals with EBI $<40\%$ decreased (from 354.7‰ to 314.7‰), while the share of individuals with EBI $>70\%$ increased (from 191.9‰ to 231.9‰), with stability of the "middle corridor" [40–70]%

(453.4‰ in both 2021 and 2023). Professional and age-related heterogeneity of EBI was also detected: the highest levels were characteristic of psychiatry (581.4‰) and oncology (533.1‰); intermediate levels – anesthesiology/intensive care (505.3‰) and therapy/family medicine (496.5‰); lower levels – surgery (427.1‰) and pediatrics (381.4‰). In the age dimension, the highest EBI values were observed in the groups ≤ 25 years (579.8‰) and ≥ 56 years (550.0‰), and the lowest – in the 26–35 years group (440.3‰), which substantiates the need for targeted prevention prioritizing high-risk groups.

To delineate factors associated with the driving the development of EBS, a comparative analysis was conducted between the study and control groups. This identified thirty distinct risk factors, which were categorized into four primary domains: socio-demographic and professional, organizational-managerial, patient-related, and individual-resource (endogenous). By ranking these factors according to their effect size (η) and statistical informativeness, the core risk determinants ($\eta \geq 6.00\%$) were identified: conflicts with patients ($\eta = 23.88\%$), physical symptoms of exhaustion ($\eta = 21.33\%$), frequent sleep disturbances ($\eta = 19.69\%$), emotional/psychological pressure from patients ($\eta = 19.11\%$), presence of chronic diseases ($\eta = 18.04\%$), exacerbation of chronic diseases due to workload ($\eta = 17.91\%$), pressure due to high patient expectations ($\eta = 17.53\%$), frequent anxiety/depression ($\eta = 14.05\%$), excessive workload ($\eta = 13.73\%$), administrative ignoring of staff grievances ($\eta = 13.45\%$), overtime shifts/work on weekends ($\eta = 12.04\%$), lack of support from family/friends ($\eta = 9.28\%$), unpaid overtime work ($\eta = 8.31\%$), irregular physician visits regarding chronic diseases ($\eta = 7.68\%$), and legal threats/complaints from patients ($\eta = 6.51\%$).

All thirty factors, including those with η below 10%, were retained in the prognostic matrix because their cumulative contribution in the Wald sequential algorithm proved necessary to achieve the diagnostic thresholds. Factors with smaller effect sizes were found to contribute at specific stages of the sequential summation, particularly in cases where the

cumulative score fell near the diagnostic boundary. Excluding these factors would result in a higher proportion of indeterminate cases requiring additional diagnostic procedures, thereby reducing the practical utility of the prognostic algorithm.

The results demonstrate that while the risk structure is inherently multivariate and multi-level, it contains a clearly defined contour of modifiable organizational and managerial determinants. This evidence-base provides a strategic roadmap for institutional-level preventive interventions, allowing healthcare administrators to transition from generalized support to targeted, high-impact systemic changes.

For the practical implementation of a risk-oriented management strategy, a prognostic algorithm was developed to predict the onset of EBS. This model is based on Wald's SPRT and utilizes a structured prognostic matrix comprising 30 factors, ranked by their decreasing informativeness. The diagnostic process involves the sequential summation of Prognostic Coefficients (PC). The assessment continues until the cumulative score reaches predefined interpretation thresholds, which facilitate objective clinical decision-making: $\sum PC \leq -13$ – no risk; $\sum PC$ from -12 to $+12$ – probable risk; $\sum PC \geq +13$ – high risk (with 95% probability) [8]. This formalized approach enables the systematic identification of high-risk cohorts within healthcare institutions. Furthermore, it provides a rigorous evidentiary basis for the initiation of tiered preventive interventions, ensuring that the intensity of psychological and organizational support is precisely calibrated to the individual's risk profile.

Particular significance was attributed to the assessment of WAI as the primary functional consequence of professional burnout. Among healthcare workers with signs of EBS, the mean WAI was $[42.23 \pm 0.91]\%$ (range: $[11.11–88.89]\%$). A critical finding was the distribution of functional capacity: the vast majority of respondents (81.6%) demonstrated a low level of work ability, while medium and high levels were equally infrequent (9.2% each). A dominant influence of the stress load index (X1) on WAI was established ($R_{x1y} = -0.451$), and the regression model of work ability had the form:

$$Y = 54.926 - 0.482 \times X1 + 0.209 \times X2 - 0.059 \times X3 + 0.105 \times X4 \quad (1),$$

where Y – Work Ability Index (%);

X1 – Stress Load Index;

X2 – Support Index;

X3 – Access to Help Index;

X4 – Learning Readiness Index;

adjusted $R^2 = 0.213$.

The adjusted R^2 of 0.213 indicates that the selected indices explain 21.3% of the variance in work ability, reflecting the multifactorial nature of work ability beyond burnout-related determinants. While this limited explanatory power suggests that work ability is influenced by additional factors not captured in the model, the significant contribution of stress load (SLI) as the dominant predictor ($R_{x1y} = -0.451$) supports the rationale for including work ability as a key functional outcome in prevention strategies. Prevention efforts should therefore target stress reduction as a modifiable determinant of work ability, while acknowledging that comprehensive preservation of work ability requires broader organizational and individual interventions beyond the scope of burnout prevention alone.

The obtained data confirmed that prevention should be oriented not only toward reducing burnout manifestations, but also toward preserving work ability as a practically meaningful outcome.

At the same time, analysis of the organization of psychotherapeutic (psychological) care showed that the key problem is not only staff awareness, but real accessibility of support and reproducibility of preventive procedures. The mean AHI was 59.18% (95% CI: 57.39–60.97), and LRI was 51.72% (95% CI: 50.30–53.15); a positive association between AHI and LRI was established ($r = 0.379$; $p < 0.001$). It was shown that the presence of specialized services within an institution significantly increases the odds of a high level of access to help ($AHI \geq 70\%$) ($OR = 43.56$; $p < 0.001$), and active managerial support is associated with high learning readiness ($LRI \geq 70\%$) ($OR = 6.76$; $p < 0.001$). These findings demonstrate that the institutionalization of support – encompassing dedicated services, formalized routing, protected time allocation, and proactive

managerial leadership – is a critical prerequisite for effective prevention. Such a systemic approach aligns with contemporary international standards for psychosocial care and mental health governance in the workplace [3; 9; 10].

Based on the above, a functional-structural model for early detection and prevention of burnout syndrome in healthcare workers was developed, grounded in a multi-level approach and providing for integration of screening, risk stratification, forecasting, routing access to help, and monitoring effectiveness via harmonized indices (EBI, SLI, SI, AHI, LRI) and the functional indicator of work ability (WAI). The model is designed for implementation at national, regional, group, and individual levels, and the preventive contour is structured according to primary, secondary, and tertiary prevention, involving administration, department leaders, HR and educational-methodological services, as well as psychological/psychotherapeutic support (as needed) [3; 7].

The functional-structural model for early detection and prevention of burnout syndrome in healthcare workers, incorporating the multi-level approach and integrating screening,

risk stratification, forecasting, routing to assistance, and monitoring of effectiveness, is presented in Fig. 1.

The developed model was validated through expert elicitation involving 12 independent experts in the fields of occupational health, medical psychology, and healthcare management. Each expert evaluated the framework on a 10-point scale across five criteria (all scores in points): structural integrity, feasibility of implementation, alignment with international standards, clarity of the risk stratification algorithm, and potential for sustainability. The mean overall score was [8.7±0.6] (range: [7.8–9.5]). The highest scores were assigned to the risk stratification algorithm [9.1±0.4] and alignment with international standards [8.9±0.5]; the lowest scores were assigned to feasibility of implementation [8.2±0.7], which was attributed to variability in institutional resources. A threshold of [≥8.0] was predefined as acceptable validity; all criteria met this threshold. The validation results confirm the model's conceptual soundness while highlighting the need for context-specific adaptation during implementation.

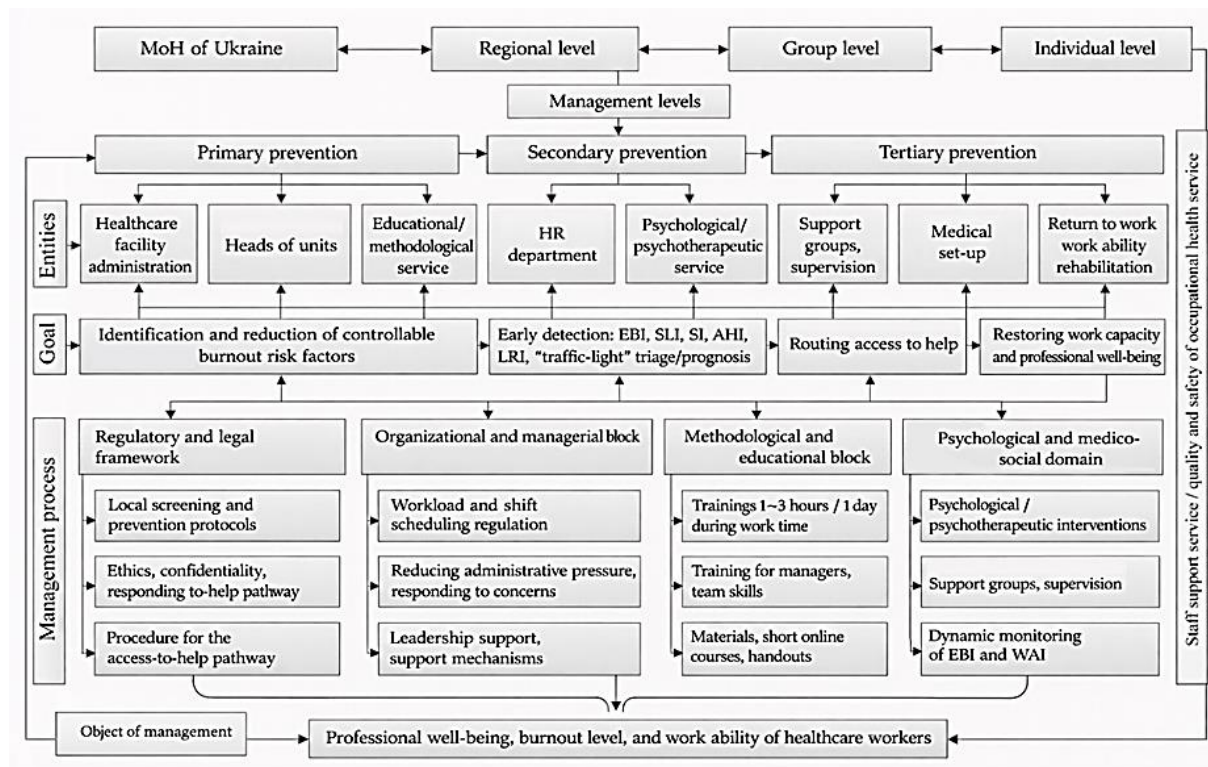


Fig. 1. Functional-structural model for early detection and prevention of burnout syndrome in healthcare workers.

The primary goal of the proposed model is to mitigate the incidence and progression of Emotional Burnout Syndrome (EBS) among healthcare professionals. This is achieved through the systematic identification of high-risk cohorts, the implementation of evidence-based, targeted interventions, and the provision of streamlined access to psychotherapeutic and psychological support, underpinned by a continuous, dynamic evaluation of effectiveness.

To ensure the structural integrity and operational success of the model, the following foundational principles were formulated:

- proactivity and timeliness: prioritizing early-stage detection to intercept burnout before it reaches clinical severity;
- systemic multi-level integration: coordinating actions across individual, departmental, and institutional tiers;
- risk-oriented targeting: tailoring interventions based on objective risk stratification and specific professional vulnerabilities;
- multidisciplinary collaboration: Integrating expertise from clinical medicine, organizational psychology, and healthcare management;
- accessibility and ethical integrity: guaranteeing low-barrier access to support while maintaining strict professional confidentiality;
- bimodal intervention strategy: harmonizing individual psychological resilience-building with organizational structural optimizations;
- metric-driven governance: utilizing index-based monitoring to provide an objective evidence base for performance assessment and model refinement.

The proposed model is designed to facilitate the following strategic tasks: standardization of screening and regular index monitoring; risk stratification of personnel based on index thresholds and a prognostic algorithm; formalization of the route for accessing psychotherapeutic (psychological) assistance; implementation of preventive intervention packages of varying intensity (primary, secondary, tertiary prevention) considering dominant risk determinants; reduction of the impact of manageable organizational factors (workload, overtime/on-call shifts, managerial pressure, response to complaints, support deficit, conflict intensity

of interactions); provision of training modules and enhancement of staff learning readiness in practice-oriented formats; assessment of prevention effectiveness by changes in indices and work ability with the possibility of operational adjustment of managerial decisions.

The functional-organizational components of the model include the subjects of management, the object of management, and the regulatory block that ensures reproducibility of the preventive contour (Fig. 2). The subjects of management are health governance bodies at relevant levels, healthcare facility administration, heads of structural units, HR/personnel and educational-methodological services, psychological/psychotherapeutic services (if available), as well as professional and public organizations (when available/feasible). The object of management is the professional well-being of healthcare workers and related outcomes: the level of burnout manifestations (EBI), work ability (WAI), and manageable risk determinants (SLI, SI, AHI, LRI).

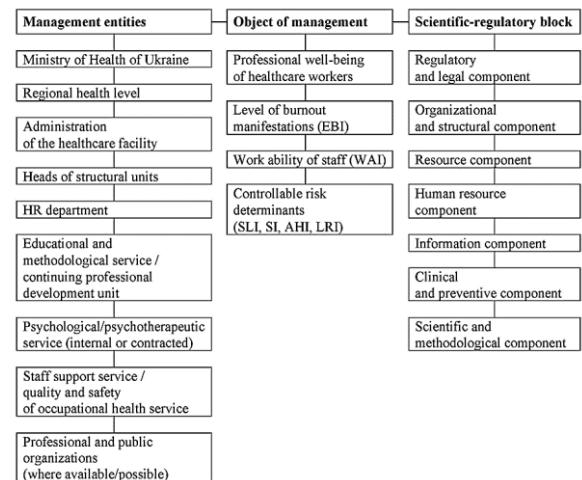


Fig. 2. Functional-organizational structure for implementing the model for early detection and prevention of burnout syndrome in healthcare workers.

The regulatory block of the model (Fig. 3) includes interconnected components: legal and regulatory (local documents, confidentiality and non-punitive access to support, protocols/routing for psychological assistance and the mandatory requirements for monitoring key performance indicators) [9; 10]; organizational-structural (integration of screening and index-based monitoring into existing human

resource management processes, designation of a coordinator/support service, formalization of the "entry window", regularity of activities and interdepartmental interaction); resource (protected time for consultations and trainings, material and technical conditions, minimum necessary resources for interventions of varying intensity); staffing (training specialists and

educating department heads in managing psychosocial risks); informational (psychoeducation, algorithms/memos, feedback channels); clinical-preventive (intervention packages according to risk level, routing to assistance); scientific-methodological (effectiveness indicators, analysis of index dynamics, and improvement of prevention programs) [3–6].



Fig. 3. Scientific-regulation block.

The main idea of the proposed model is embedding burnout prevention into routine work to improve the quality of healthcare services and strengthen the mental component of healthcare workers' well-being. Professional well-being of staff is, in effect, an "invisible infrastructure" of safe medical care: when exhaustion accumulates, the frequency of communication failures, deontological conflicts, and errors under time pressure and attention-resource deficits increases – and the consequences inevitably become systemic. This is why burnout prevention matters at all levels of care delivery: it supports continuity of processes, reduces organizational vulnerability during peak workload periods, strengthens trust within the team and patients' trust in the institution. In a broader perspective, it is also a mechanism for reducing indirect losses associated with staff turnover, maladaptation, and gradual decline in effectiveness that often remains outside formal control. Thus, implementation of the model is considered a practical pathway to transform burnout prevention into a manageable, accountable, and reproducible element of the healthcare system, aimed at strengthening institutional resilience and the quality of medical care.

Discussion

The findings of this study regarding the prevalence of burnout and its professional and age-related heterogeneity are consistent with international data showing that psychiatric and intensive care specialties are at highest risk, while the U-shaped age distribution reflects the dual vulnerability of early-career professionals facing high demands without sufficient coping resources and senior practitioners experiencing cumulative long-term stress exposure [3; 5; 6]. The identification of modifiable organizational determinants – particularly excessive workload, overtime, managerial pressure, and inadequate response to staff grievances – as core risk factors aligns with the systems approach to burnout prevention advocated by the National Academy of Medicine and the WHO, which emphasize that sustainable solutions require organizational-level interventions rather than individual-focused strategies alone [3; 4; 7].

The critical deficit in regulatory awareness among healthcare workers, identified in previous research by the authors, further supports the need for systemic changes. In a separate study involving 221 medical professionals, only 23.6% demonstrated a high level of knowledge regarding existing normative documents on burnout prevention, while 72.6% had a low level of awareness; the majority of respondents (78.3%) relied on informal sources such as the Internet, whereas only 10.4% used official documents from the Ministry of Health [12]. These findings highlight a systemic gap between the formal existence of regulatory frameworks and their practical application in healthcare settings. The low level of regulatory awareness, coupled with the fragmented institutionalization of support services identified in the present study, underscores the need for targeted educational interventions and the integration of burnout prevention into routine professional training.

The relationship between physical workability and health indicators, as discussed by Heera et al., provides additional context for understanding the functional consequences of burnout. Their theoretical analysis emphasizes that physical performance is closely linked to cardiorespiratory capacity, stress resistance, and the ability to maintain homeostasis – parameters that can be significantly compromised in states of chronic stress and exhaustion [13]. In our study, the dominant influence of stress load on work ability ($R_{xy} = -0.451$) and the low overall work ability index ($[42.23 \pm 0.91]\%$) among healthcare workers with burnout symptoms align with this conceptual framework. The integration of physical health indicators into workplace health assessments may therefore enhance the early detection of burnout risk and support more comprehensive preventive strategies.

A potential limitation of the proposed model is that the same administration responsible for creating organizational risk factors (e.g., workload, overtime, response to grievances) is tasked with implementing mitigation strategies. To address this tension, the model explicitly separates the identification of risk factors (conducted through standardized

monitoring) from the implementation of preventive interventions (overseen by a multidisciplinary committee that includes staff representatives and external experts where feasible). The regulatory block of the model further mandates transparency in monitoring results and establishes accountability mechanisms, including regular reporting to staff and the involvement of professional organizations in oversight. This structural design aims to mitigate the inherent conflict of interest by distributing responsibility and ensuring that intervention decisions are based on objective index-based data rather than administrative discretion.

Conclusions

The study results indicate the need for further implementation in the healthcare system of an improved model for early detection and prevention of burnout syndrome in healthcare workers as an organizationally manageable process. The proposed model ensures standardized index-based screening, risk stratification and forecasting, a formalized route for access to psychotherapeutic (psychological) assistance, as well as monitoring of effectiveness, including assessment of work ability as a key functional outcome. It has been demonstrated that implementing the improved model for early detection and prevention of burnout syndrome in healthcare workers corresponds to contemporary international approaches to mental health governance in the workplace and prevention of professional exhaustion,

and its medical and social effectiveness has been confirmed. Consequently, the proposed model is highly recommended for adoption within healthcare facilities across the regions of Ukraine. Successful implementation should be calibrated to local organizational resources and staffing capacities, ensuring the model's sustainability and long-term impact on the quality of medical care.

Prospects for Further Research

Further research will involve implementation of the proposed model in healthcare facilities to evaluate its social, medical, and economic effectiveness.

Declarations

Conflict of interest is absent.

All authors have given their consent to the publication of the article on the terms of the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 International License and a public agreement with the publisher, to the processing and publication of their personal data.

The authors of the manuscript state that in the process of conducting research, preparing, and editing this manuscript, they did not use any generative AI tools or services to perform any of the tasks listed in the Generative AI Delegation Taxonomy (GAIDeT, 2025). All stages of work (from the development of the research concept to the final editing) were carried out without the involvement of generative artificial intelligence, exclusively by the authors.

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Authors' Contributions

Contribution	A	B	C	D	E	F
Authors						
Ivashchenko R.O.	+	+	+	+	+	+
Ohniev V.A.					+	+

Notes: A – concept;

B – design;

C – data collection;

D – statistical processing and interpretation of data;

E – writing or critical editing of the article; F – approval of the final version for publication and agreement to be responsible for all aspects of the work.

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МЕДИКО-СОЦІАЛЬНЕ ОБҐРУНТУВАННЯ МОДЕЛІ РАНЬОГО ВИЯВЛЕННЯ ТА ПРОФІЛАКТИКИ СИНДРОМУ ВИГОРАННЯ У МЕДИЧНИХ ПРАЦІВНИКІВ

Актуальність. Синдром емоційного вигорання (EBS, Emotional Burnout Syndrome) у медичних працівників є актуальною медико-соціальною проблемою, що впливає на професійну діяльність, безпеку пацієнтів та стійкість системи охорони здоров'я. Незважаючи на зростаюче визнання проблеми, стандартизовані моделі раннього виявлення та профілактики в Україні залишаються недостатньо розробленими.

Мета. Провести медико-соціальне дослідження та розробити модель раннього виявлення і профілактики синдрому емоційного вигорання у медичних працівників.

Матеріали та методи. У дослідженні застосовано метод структурно-функціонального моделювання, синтезований з аналізу літератури та емпіричного дослідження, проведеного у 2021–2023 рр. Об'єкт дослідження – 483 медичних працівники (основна група, $n=294$; контрольна група, $n=189$). Використано індексний підхід з інтегральними показниками: індекс емоційного вигорання (EBI, Emotional Burnout Index), індекс стресового навантаження (SLI, Stress Load Index), індекс підтримки (SI, Support Index), індекс доступу до допомоги (AHI, Access to Help Index), індекс навчальної готовності (LRI, Learning Readiness Index) та індекс працездатності (WAI, Work Ability Index). Прогнозування ризику здійснено за допомогою послідовного критерію Вальда. Модель валідовано методом експертних оцінок (12 експертів) за 10-бальною шкалою.

Етика дослідження. Дослідження проведено відповідно до принципів Гельсінської декларації Всесвітньої медичної асоціації (1964–2024). Схвалення отримано від комітету з етики Харківського національного медичного університету. Усі учасники надали письмову інформовану згоду.

Результати. Встановлено структурні зміни поширеності вигорання: частка осіб з EBI <40 % зменшилася з 354,7 % до 314,7 %, тоді як частка осіб з EBI >70 % зросла з 191,9 % до 231,9 %. Ідентифіковано 30 факторів ризику, серед яких найбільшу силу впливу мали організаційно-управлінські детермінанти. Працездатність медичних працівників з ознаками вигорання була низькою (середній WAI, $[42,23 \pm 0,91]$ %). Доступ до допомоги був обмеженим (середній AHI, 59,18 %), при цьому наявність спеціалізованих служб значно підвищувала шанси високого доступу (відношення шансів, $OR=43,56$; $p<0,001$). Розроблено та валідовано функціонально-структурну модель, що інтегрує скринінг, стратифікацію ризику, прогнозування та маршрутизацію до допомоги (середня загальна оцінка, $[8,7 \pm 0,6]$ бала).

Висновки. Запропонована модель забезпечує стандартизований індексний скринінг, стратифікацію ризику, прогнозування, формалізований маршрут доступу до психотерапевтичної допомоги та моніторинг ефективності, включаючи оцінку працездатності. Впровадження моделі відповідає сучасним міжнародним підходам до управління психічним здоров'ям на робочому місці.

Ключові слова: соціальна медицина, синдром емоційного вигорання, профілактика, працездатність.

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