



DOI 10.58423/2786-6742/2026-14-199-212
UDC 658.3:614.2:159.9

Yurii PETRASHYK

PhD, Associate Professor,
Associate Professor of the Department of Public Health and Healthcare Management
Ivan Horbachevsky Ternopil National Medical University of the Ministry of Health of Ukraine
Ternopil, Ukraine

ORCID ID: [0000-0003-1286-110X](https://orcid.org/0000-0003-1286-110X)

Scopus Author ID: [57204442598](https://orcid.org/57204442598)

e-mail: yurii.m.petrashyk@tdmu.edu.ua

**HUMAN RESOURCES MANAGEMENT: MANAGING MENTAL HEALTH
OF HEALTHCARE WORKERS**

Abstract. This study synthesizes the current evidence on mental health management of healthcare workers (HCWs), comparing individual and organizational intervention approaches, and contextualizes findings within the Ukrainian healthcare setting. The subject of the study encompasses evidence-based strategies targeting burnout, anxiety, depression, compassion fatigue, secondary traumatic stress, and insomnia in HCW populations across diverse clinical contexts. A structured narrative review was conducted using a systematic search strategy informed by systematic review principles: peer-reviewed systematic reviews, meta-analyses, and primary studies published between 2016 and 2025 were identified through PubMed, MEDLINE, Scopus, and Google Scholar, and studies meeting inclusion criteria were synthesized. The evidence confirms that organizational interventions — including workload reduction, flexible scheduling, leadership support, and PPE availability — show a more consistent pattern of improvement than single-modality individual coping programs, with more than two thirds of controlled studies of organizational interventions reporting improvements in at least one primary outcome, most consistently burnout; mindfulness-based programs show the most reliable individual-level signal. Among Ukrainian HCWs, burnout prevalence ranges from 20% to 75% depending on specialty and setting, and satisfaction with working conditions is the strongest predictor of mental health outcomes, while COVID-19 pandemic conditions, military conflict, staffing shortages, fear of infection, and low social support are associated with elevated anxiety, depression, insomnia, and trauma-related symptoms; a hybrid online/offline monitoring and counseling model demonstrated particular effectiveness in the Ukrainian context. The findings directly inform healthcare managers, institutional administrators, public health policymakers, and human resource practitioners, with particular relevance for healthcare systems operating under high occupational stress and resource constraints, including military conflict settings. Overall, mental health management of HCWs requires a multi-level approach combining structural organizational reforms with targeted psychological support; for Ukraine, the priority is systemic improvement in working conditions, staffing, and leadership culture.

Keywords: burnout, compassion fatigue, evidence-based interventions, healthcare workers, mental health management, organizational interventions, Ukraine.

JEL Classification: I18, I12, J28, J24, M12



This is an Open Access article distributed under the terms of the [Creative Commons CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/)

Анотація. Систематизовано наявні докази щодо ефективних стратегій управління психічним здоров'ям медичних працівників, порівняно індивідуально- та організаційно-орієнтовані інтервенції й контекстуалізовано висновки в умовах охорони здоров'я України. Предметом дослідження є доказова база стратегій управління психічним здоров'ям медичних працівників — включаючи вигоряння, тривогу, депресію, втому від співчуття, вторинний травматичний стрес та безсоння. Проведено структурований наративний огляд із застосуванням систематизованої стратегії пошуку: систематичні огляди, мета-аналізи та первинні дослідження, опубліковані між 2016 і 2025 роками, було виявлено через PubMed, MEDLINE, Scopus та Google Scholar, і для синтезу відібрано рецензовані праці, що відповідають критеріям включення. Синтез доказів підтверджує, що організаційні інтервенції, зокрема скорочення робочого навантаження, гнучкий графік, підтримка керівництва та забезпечення ЗІЗ, демонструють більш послідовну позитивну динаміку порівняно з одномодалними індивідуальними програмами подолання стресу. Більше двох третин контрольованих досліджень організаційних інтервенцій фіксують покращення принаймні одного первинного результату, найбільш послідовно — щодо вигорання; серед програм індивідуального рівня найбільш надійний сигнал демонструє практика усвідомленості (майндфулнес). Серед українських медичних працівників поширеність вигорання коливається від 20% до 75% залежно від спеціальності та умов праці, а задоволеність умовами праці є найпотужнішим предиктором психічного здоров'я; пандемія COVID-19, воєнний конфлікт, кадровий дефіцит, страх інфікування і низька соціальна підтримка пов'язані з підвищеним рівнем тривоги, депресії, безсоння та симптомів ПТСР; гібридна модель онлайн- та офлайн-моніторингу й консультування виявилася особливо ефективною в українському контексті. Результати адресовані керівникам охорони здоров'я, адміністраторам закладів, фахівцям публічного здоров'я та менеджерам з персоналу, передусім у системах охорони здоров'я з ресурсними обмеженнями та в умовах військових конфліктів. Управління психічним здоров'ям медичних працівників потребує багаторівневого підходу, що поєднує структурні організаційні реформи з цільовою психологічною підтримкою; для України пріоритетом є системне покращення умов праці, укомплектованості кадрами та культури керівництва.

Ключові слова: вигорання, втома від співчуття, доказові інтервенції, медичні працівники, управління психічним здоров'ям, організаційні інтервенції, Україна.

Absztrakt. A tanulmány rendszerezi az egészségügyi dolgozók mentális egészségének menedzselésére irányuló hatékony stratégiákra vonatkozó rendelkezésre álló tudományos bizonyítékokat, összehasonlítja az egyéni és szervezeti szintű beavatkozásokat, valamint az eredményeket az ukrán egészségügyi rendszer sajátosságainak figyelembevételével értelmezi. A kutatás tárgyát az egészségügyi dolgozók mentális egészségének menedzselését szolgáló stratégiák tudományos bizonyítékai képezik, beleértve a kiégést, a szorongást, a depressziót, az együttérzés-fáradtságot, a másodlagos traumás stresszt és az álmatlanságot. A kutatás strukturált narratív áttekintésre épül, szisztematikus keresési stratégia alkalmazásával: a 2016 és 2025 között megjelent szisztematikus áttekintéseket, metaanalíziseket és primer kutatásokat a PubMed, a MEDLINE, a Scopus és a Google Scholar adatbázisaiban azonosították, majd a beválasztási kritériumoknak megfelelő, lektorált tanulmányokat vonták be a szintézisbe. A bizonyítékok szintézise megerősíti, hogy a szervezeti szintű beavatkozások – különösen a munkaterhelés csökkentése, a rugalmas munkarend, a vezetői támogatás és az egyéni védőeszközök biztosítása – következetesebb pozitív hatást mutatnak, mint az egyetlen beavatkozási formára épülő, egyéni szintű stresszkezelő programok: a szervezeti beavatkozásokat vizsgáló kontrollált kutatások több mint kétharmada legalább egy elsődleges kimenetel javulását mutatta ki, legkövetkezetesebben a kiégés tekintetében; az egyéni szintű programok közül a mindfulness-gyakorlat mutatta a legmegbízhatóbb kedvező hatást. Az ukrán egészségügyi dolgozók körében a kiégés prevalenciája a szakterülettől és a munkakörülményektől



függően 20% és 75% között változik, miközben a munkakörülményekkel való elégedettség bizonyult a mentális egészség legerősebb prediktorának; a COVID-19-világjárvány, a fegyveres konfliktus, a munkaerőhiány, a fertőzéstől való félelem és az alacsony szintű társas támogatás a szorongás, a depresszió, az álmatlanság és a poszttraumásstressz-zavar tüneteinek magasabb szintjével áll összefüggésben; az online és offline nyomon követést, valamint tanácsadást ötvöző hibrid modell különösen hatékonynak bizonyult az ukrán kontextusban. Az eredmények elsősorban az egészségügyi vezetők, az intézményi adminisztrátorok, a népegészségügyi szakemberek és a humánerőforrás-menedzserek számára relevánsak, különösen az erőforráshiánnyal küzdő egészségügyi rendszerekben és fegyveres konfliktusok körülményei között. Az egészségügyi dolgozók mentális egészségének menedzselése többszintű megközelítést igényel, amely a strukturális szervezeti reformokat célzott pszichológiai támogatással ötvözi; Ukrajna számára prioritást jelent a munkakörülmények, a megfelelő személyzeti ellátottság és a vezetési kultúra rendszerszintű javítása.

Kulcsszavak: *kiegés, együttérzés-fáradtság, bizonyítékalapú beavatkozások, egészségügyi dolgozók, mentális egészség menedzselése, szervezeti beavatkozások, Ukrajna.*

Problem description. Healthcare workers (HCWs) constitute one of the occupational groups most systematically exposed to chronic workplace stress [1]. The demands of clinical work — prolonged working hours, continuous exposure to human suffering, high-stakes decision-making under uncertainty, risk of occupational infection, and interpersonal conflict — generate persistent psychological burdens that, when inadequately managed, evolve into clinically significant mental health disorders. Burnout, occupational depression, anxiety, compassion fatigue (CF), secondary traumatic stress (STS), and insomnia represent the principal mental health sequelae documented across HCW populations globally [1, 2, 3].

The economic consequences of unmanaged HCW mental ill-health are substantial and multi-dimensional. Elevated absenteeism, presenteeism (impaired productivity while present at work), workforce attrition, and increased medical errors translate into direct system-level costs for healthcare institutions and indirect costs through degraded quality of patient care [3, 4]. Mental illness globally accounts for approximately 32% of all years lived with disability [5], and healthcare workers bear a disproportionate occupational share. The World Health Organization classifies burnout as an “occupational phenomenon” arising from inadequately managed chronic workplace stress — a classification that frames the problem explicitly as a management responsibility [4].

The COVID-19 pandemic acted as a powerful stress amplifier, sharply elevating rates of anxiety, depression, PTSD, and burnout in HCW populations worldwide [1, 6]. In Ukraine, the pandemic compounded pre-existing structural deficiencies in the healthcare system — underfunding, chronic understaffing, and physical infrastructure deficits — before the full-scale military invasion of February 2022 added displacement, direct threat to personal safety, and the psychosocial burden of wartime. Ukrainian healthcare workers thus face a compounded adversity environment that combines pandemic-related occupational trauma, wartime conditions, and chronic structural deficiencies — a combination exceptional in scope within the contemporary healthcare management literature [7, 8, 9, 18].

Despite the scale of the problem and the growing evidence base for intervention, healthcare managers frequently lack access to synthesized, actionable guidance. A persistent translation gap separates the research literature from practical management decisions, particularly in resource-limited and post-conflict settings such as Ukraine. This article addresses that gap through a systematic evidence synthesis oriented toward implementable management recommendations.

Literature review. The systematic review literature on HCW mental health has expanded substantially over the past decade. Cohen et al. (2023), reviewing 33 studies in BMJ Open, found that 29 (88%) reported positive outcomes from workplace interventions; however, 30 of the 33 studies targeted individual-level coping rather than organizational conditions — a design bias that the authors explicitly flagged as limiting the field’s practical utility for managers [1]. A 2024 review in the American Journal of Public Health similarly screened over 5,000 publications and identified 118 distinct interventions offered to healthcare workers, the majority focused on individual-level rather than organizational-level prevention, confirming the structural imbalance in the literature [20].

Meta-analytic evidence on internet-based and psychosocial interventions is instructive but cautionary. Ladino et al. (2023) pooled four RCTs on Internet Interventions. They found no statistically significant pooled effect for burnout reduction, attributing the null finding to heterogeneity across study designs, durations (2–12 weeks), and populations [2]. This finding stresses the risk of generalizing from single small trials and highlights the need for multi-component approaches.

Organizational interventions demonstrate a markedly more consistent signal. Aust et al. (2024), in a MENTUPP consortium review of 22 controlled studies in healthcare small and medium enterprises, found that 68% reported improvements in at least one primary outcome, most consistently burnout (11 of 13 studies), with the strongest evidence for job and task modifications and moderate evidence for flexible scheduling and changes in the physical work environment [4]. Belita et al. (2025), analyzing pandemic and epidemic-context studies specifically, identified leadership support and PPE availability as the organizational factors most robustly associated with lower burnout, anxiety, stress, and depression [6]. Gray et al. (2019), in a realist review of 60 studies, traced organizational intervention effects through five principal mechanisms: skills development, leadership development, communication and team-building, stress management, and workload/time management [5].

At the individual level, mindfulness-based interventions (MBIs) have the most consistent evidence base. Conversano et al. (2020) synthesized 57 studies (including 23 with pre-post designs) and found MBIs associated with reductions in burnout, depression, anxiety, and stress, as well as increases in self-compassion, among HCPs — though effects on compassion fatigue per se were less reliable [12]. The 2024 review by Kowalska and Domagała found that interdisciplinary managerial approaches combining clinical, administrative, and psychological expertise showed promise but required more rigorous evaluation [3].



Compassion fatigue and STS — particularly prevalent among nursing staff — represent a growing research focus. Rushforth et al. (2023) reviewed 6 studies of self-compassion interventions for STS and found preliminary but methodologically limited support (4 of 6 studies positive, mostly without control groups) [13]. Manzanedo-Moreno et al. (2025) conducted a more robust meta-analysis of 11 controlled studies (N = 763) and found statistically significant improvements in compassion satisfaction and reductions in fatigue and burnout [16]. Patole et al. (2024), however, concluded that RCT evidence on compassion fatigue interventions remained inadequate due to small samples and high risk of bias [14].

Stigma and help-seeking merit separate attention. Hanisch et al. (2016) found that anti-stigma workplace interventions improved employee knowledge and supportive behavior toward those with mental health problems [10]. In a meta-analysis of 19 controlled studies, Xu et al. (2018) demonstrated short-term improvements in formal help-seeking and mental health literacy following destigmatization programs [11]. For HCWs — known to be reluctant to disclose mental health difficulties due to professional identity concerns — stigma reduction is a prerequisite for other interventions to reach those in greatest need.

Ukraine-specific evidence is growing. Pinchuk et al. (2022) studied 1,000+ Ukrainian HCWs during COVID-19 and identified negative risk perception, continuous news consumption, and staff shortages as the strongest predictors of anxiety and fear [8]. In a related survey of 500 Ukrainian HCWs, Pishel et al. (2022) found that those directly treating COVID-19 patients (n = 441) reported significantly higher depression, anxiety, and insomnia than those without direct COVID-19 patient contact (n = 40), along with greater trauma-related symptoms (avoidance, intrusion, and hyperarousal), underscoring direct patient contact as an independent risk factor [18]. Martsenkovskyi et al. (2022) found significant associations between low perceived social support and higher depression, anxiety, stress, and post-traumatic symptoms in Ukrainian medical professionals [9]. Borovets and Lyubinets (2024) demonstrated that satisfaction with working conditions was the single most influential predictor of mental health self-assessment — exceeding individual coping and temperament variables — in a cross-sectional sample of Ukrainian HCWs [7].

Goals of the article. The purpose of this article is to synthesize the evidence from 2016 to 2025 on effective mental health management strategies for healthcare workers, compare organizational and individual intervention approaches, and contextualize findings within the specific realities of the Ukrainian healthcare system.

The specific research objectives are:

1. to identify the dominant intervention categories and their evidence quality in the current systematic review literature;
2. to compare the effectiveness of organizational versus individual mental health interventions, identifying mechanisms of effect;
3. to describe the mental health burden and specific determinants for Ukrainian HCWs in the 2021–2025 period;

4. to develop an evidence-informed, multi-level intervention framework applicable to healthcare management practice.

Methods and methodology. This article presents a structured narrative review of peer-reviewed literature. We conducted a comprehensive search in PubMed, MEDLINE, Scopus, and Google Scholar databases. The search strategy used the following keyword combinations: (“healthcare workers” OR “health care workers” OR “nurses” OR “physicians”) AND (“mental health” OR “burnout” OR “well-being”) AND (“intervention” OR “management” OR “program”); “compassion fatigue” AND “healthcare” AND “intervention”; “Ukraine” AND “healthcare workers” AND (“mental health” OR “burnout” OR “anxiety”). We searched reference lists of included articles for additional relevant sources.

Inclusion criteria were: (a) systematic reviews, meta-analyses, or primary empirical studies; (b) published between January 2016 and June 2025; (c) examining mental health outcomes (burnout, anxiety, depression, compassion fatigue, STS, insomnia, PTSD) in healthcare workers; (d) available in English; (e) published in peer-reviewed journals indexed in PubMed, Scopus, or Web of Science; (f) accessible with a DOI. Exclusion criteria were: (a) studies with non-HCW populations as the primary sample; (b) conference abstracts published in non-peer-reviewed venues or without a verifiable DOI; (c) grey literature without a DOI. One source [19] - a conference abstract published in the peer-reviewed European Psychiatry (DOI: 10.1192/j.eurpsy.2021.843) - was retained as preliminary supporting evidence for the Ukrainian hybrid monitoring model given its peer-review status and verifiable DOI; it is cited as supplementary rather than primary evidence.

The synthesis followed a thematic narrative approach, organizing findings by intervention type (organizational, individual, stigma-related, compassion fatigue-targeted) and by population context (global vs. Ukrainian-specific). We assessed evidence quality narratively with reference to study design (RCT, controlled study, systematic review, meta-analysis), sample size, and risk of bias as reported in the included reviews. As a structured narrative review rather than a formal systematic review, this study does not include a PRISMA flow diagram, formal inter-rater reliability assessment, or a standardised risk-of-bias scoring instrument - limitations that should be considered when interpreting the strength of the conclusions.

Main research results. The included studies represent diverse research designs and geographic contexts (Table 1). The majority are peer-reviewed review-type studies - systematic reviews, meta-analyses, a narrative review, a realist review, and a scoping review (n = 13), ensuring a high level of evidence synthesis. Geographically, the global literature is dominated by European, North American, and Australian samples; five sources provide Ukraine-specific evidence (three primary studies included in Table 1 [7, 8, 9] and two additional Ukraine-specific sources [17, 18] analyzed in Table 3). The most commonly targeted outcomes are burnout (14/16 studies), anxiety (10/16), and depression (10/16); compassion fatigue and STS appear in 5/16 studies, reflecting the growing but still underrepresented focus on these outcomes.



Table 1
Summary of key studies on healthcare worker mental health interventions
(2016–2025)

No.	Authors, Year	Study Type	N Studies	Primary Outcomes Targeted
1	Cohen et al. (2023)	Systematic Review	33	Burnout, well-being, resilience
2	Ladino et al. (2023)	Systematic Review and Meta-analysis	4 RCTs	Burnout
3	Kowalska & Domagała (2024)	Narrative Review	—	Burnout, anxiety, depression
4	Aust et al. (2024)	Systematic Review	22 (23 art.)	Burnout, anxiety, depression, stress
5	Gray et al. (2019)	Realist Review	60	Burnout, stress, happiness
6	Belita et al. (2025)	Systematic Review	27	Burnout, anxiety, depression, stress
7	Conversano et al. (2020)	Systematic Review	23	Burnout, depression, anxiety, self-compassion
8	Rushforth et al. (2023)	Systematic Review	6	Secondary traumatic stress
9	Manzanedo-Moreno et al. (2025)	Systematic Review and Meta-analysis	11 RCTs/CCTs	Compassion fatigue, burnout
10	Patole et al. (2024)	Systematic Review of RCTs	15 RCTs	Compassion fatigue
11	Mahanjana et al. (2025)	Scoping Review	—	Multiple mental health outcomes
12	Hanisch et al. (2016)	Systematic Review	16	Stigma, help-seeking
13	Xu et al. (2018)	Systematic Review and Meta-analysis	19	Help-seeking behavior
14	Pinchuk et al. (2022)	Primary Study (Ukraine)	N = 1,087	Anxiety, fear, predictors
15	Martsenkovskyi et al. (2022)	Primary Study (Ukraine)	N = 330	Anxiety, depression, stress, PTSD
16	Borovets & Lyubinets (2024)	Primary Study (Ukraine)	N = survey	Mental health, working conditions

Note: RCT – randomized controlled trial; CCT – controlled clinical trial; art. – articles. Ukraine-specific sources [17, 18] (Pishel et al., 2022; Chorna et al., 2025) are synthesized in Table 3 but are not included in Table 1 as they fall outside the primary intervention synthesis scope.

** Source: compiled by the author based on the reviewed literature.*

Organizational interventions target working conditions directly, rather than building individual coping capacity [4]. The classification of organizational interventions in this review follows Aust et al. (2024), who distinguished six main types: (1) job and task modifications; (2) flexible scheduling; (3) changes in the physical work environment; (4) leadership and management interventions; (5) team and communication interventions; and (6) access to psychological care within the organizational structure [4].

Table 2 summarizes the evidence for each organizational intervention type. The strongest evidence is for job and task modifications, with multiple controlled studies demonstrating sustained reductions in burnout. Leadership interventions show growing support, particularly from pandemic-context studies where supportive leadership was associated with lower anxiety and stress [6]. Physical environment changes and flexible scheduling show moderate but promising evidence.

Table 2
Types of organizational mental health interventions: classification and evidence summary

Intervention Type	Description / Key Mechanisms	Evidence Level*	Representative Findings
Job/task modification	Workload reduction, role clarity, task redistribution, protected time for recovery	Strong	68% of reviewed studies reported improvement in at least one primary outcome, most consistently burnout (11 of 13 studies); Aust et al. (2024) [4]
Flexible scheduling	Shift adjustment, self-scheduling, rest intervals, duty hour limits	Moderate	Improved burnout and work-life balance; evidence from Aust et al. (2024) [4]
Physical work environment	Safe spaces, rest areas, noise reduction, PPE access	Moderate	PPE availability associated with lower burnout and anxiety during pandemics; Belita et al. (2025) [6]
Leadership support	Managerial training, supportive supervision, psychological safety culture	Moderate–Strong	Leadership support associated with lower burnout, anxiety, and stress; Belita et al. (2025) [6]; Gray et al. (2019) [5]
Team & communication	Team debriefings, peer support programs, psychological first aid	Moderate	Peer support and team cohesion mechanisms identified in Gray et al. (2019) [5]
Access to psychological care	On-site counseling, EAP, mental health screening programs, hybrid monitoring	Moderate	Hybrid model effective in Ukrainian context; Korostiy et al. (2021) [19]; reduces help-seeking barriers
Anti-stigma programs	Mental health literacy training, contact-based education at workplace	Moderate	Improved knowledge and supportive behavior; Hanisch et al. (2016) [10]; Xu et al. (2018) [11]

*Note: *Evidence levels: Strong = multiple controlled studies with consistent positive findings; Moderate = several studies with positive findings but heterogeneity or design limitations; Limited = preliminary evidence only. EAP – Employee Assistance Program; PPE – Personal Protective Equipment.*

** Source: compiled by the author based on the reviewed literature.*

Individual-level interventions aim to strengthen HCW coping capacities through skills-based or therapeutic approaches. Among the available modalities, mindfulness-



based programs are most consistently supported in systematic reviews. Conversano et al. (2020) found that MBIs reduced burnout, depression, anxiety, and stress, and increased self-compassion across 57 reviewed studies of HCPs [12]. The mechanisms involve increased present-moment awareness, emotional regulation, and capacity to respond to occupational stressors with equanimity rather than reactivity.

Compassion fatigue and STS interventions are receiving growing research attention, particularly for nursing staff. The Manzanedo-Moreno et al. (2025) meta-analysis found that 11 controlled studies (N = 763) yielded statistically significant improvements in compassion satisfaction and reductions in fatigue and burnout [16]. The interventions, averaging 6 weeks in duration over 9 sessions of 90 minutes each, most commonly combined resilience skill-building, emotional well-being training, and stress coping education. Self-compassion training for STS specifically showed preliminary benefit in 4 of 6 reviewed studies, but without control groups, the evidence remains preliminary [13].

The scoping review by Mahanjana et al. (2025) confirmed that the intervention toolkit has broadened to include psychoeducation, cognitive-behavioral therapy, physical activity programs, resilience training, well-being centers, and digital tools [15]. However, the review also noted that most intervention research targets nurses rather than physicians or allied health professionals, representing a gap in the evidence base for other cadres.

Five Ukraine-specific sources (four primary studies and one systematic review/meta-analysis) provide a coherent picture of HCW mental health in the 2021–2025 period (Table 3). The dominant pattern is one of elevated anxiety, depression, insomnia, and trauma-related symptoms, caused by a combination of occupational and structural stressors amplified by the pandemic and the wartime context.

The convergent finding across these Ukrainian studies is that organizational factors, particularly working conditions, staffing levels, and social support from colleagues and leadership, consistently outrank individual characteristics in predicting mental health outcomes. This directly corresponds to the broader international evidence: Borovets and Lyubinetz (2024) found that satisfaction with working conditions explained more variance in mental health self-assessment than any other variable tested, while Chorna et al. (2025) linked burnout rates of 20–75% directly to reduced professional motivation and workplace strain rather than to individual predispositions [7, 17].

Synthesizing the global intervention literature with Ukrainian-specific findings, an evidence-based multi-level framework emerges (Table 4). This framework functions across three levels of the healthcare organization: systemic/institutional, team/leadership, and individual. At each level, both structural conditions and active program components are specified.

Table 3
Mental health outcomes and key predictors among Ukrainian healthcare workers (2021–2025)

Study	Sample	Outcomes Measured	Prevalence / Key Findings	Principal Predictors Identified
Pinchuk et al. (2022) [8]	N = 1,087 Ukrainian HCWs, COVID-19 period	Anxiety, fear, COVID-related stress	High rates of anxiety and fear; 80%+ reported elevated COVID-19 concern	Negative risk perception; constant COVID-19 news consumption; staff shortages
Pishel et al. (2022) [18]	N = 500 Ukrainian HCWs, COVID-19 period	Depression (PHQ-9), anxiety (GAD-7), insomnia (ISI), trauma (IES-R)	Significantly higher depression, anxiety, insomnia, and trauma symptoms among HCWs with direct COVID-19 patient contact (n = 441) vs. without (n = 40)	Direct patient contact with COVID-19 cases
Martsenkovskiy et al. (2022) [9]	N = 330 Ukrainian medical professionals, COVID-19 period	Depression (PHQ-9), anxiety (GAD-7), stress (PSS), PTSD (PCL-5)	Significant levels of all four outcomes; inverse correlation with social support	Low perceived social support; severity positively correlated with occupational stress
Borovets & Lyubinetz (2024) [7]	Ukrainian HCWs, survey, 2023–2024	Mental health (self-assessment, multiple indicators)	Satisfaction with working conditions — strongest predictor of mental health self-assessment	Working conditions satisfaction > individual coping style variables in regression models
Chorna et al. (2025) [17]	Review/meta-analysis of Ukrainian studies	Burnout (emotional exhaustion, depersonalization)	Burnout prevalence 20–75% in reviewed Ukrainian samples	Professional motivation; workplace strain; inadequate organizational support

Note: PHQ-9 – Patient Health Questionnaire-9 (depression); GAD-7 – Generalized Anxiety Disorder-7; PSS – Perceived Stress Scale; PCL-5 – PTSD Checklist for DSM-5.

* Source: compiled by the author based on [7, 8, 9, 17, 18].



Table 4
Evidence-based multi-level framework for healthcare worker mental health management

Level	Structural Conditions to Modify	Active Program Components	Evidence Sources
Level 1: Systemic/Institutional	Adequate staffing ratios; PPE provision; physical safety; fair compensation; shift hour limits; workload equity; anti-stigma policy	Organizational health promotion strategy; mandatory mental health training for all staff; anonymous psychological screening; Employee Assistance Program (EAP)	[1, 4, 5, 6, 7, 10, 11]
Level 2: Team/Leadership	Psychologically safe team culture; supervisory support; transparent communication; conflict resolution structures	Leadership training in mental health recognition; structured peer support groups; debriefing protocols after critical incidents; team resilience programs	[3, 4, 5, 6, 10]
Level 3: Individual	Flexible scheduling accommodating individual needs; reasonable work-life balance; self-scheduling options	Mindfulness-based stress reduction; self-compassion training; cognitive-behavioral therapy; compassion fatigue interventions; digital wellness tools	[2, 13, 14, 15, 16, 19]

Note: EAP – Employee Assistance Program.

** Source: compiled by the author based on the quoted sources.*

A critical design principle of the framework is that individual-level programs complement organizational structural change, not substitute for it. While the reviewed evidence shows considerable heterogeneity across study designs and settings, the consistent direction of findings suggests that programs which build individual resilience in the absence of structural changes to working conditions risk placing the burden of coping with systemic failure on individual workers rather than addressing root causes [1, 4, 6].

Conclusions and prospects for further research. This review confirms that the dominant paradigm in HCW mental health management, individual resilience training and personal coping skill development, is necessary but fundamentally insufficient. The most consistent and durable improvements documented in the literature emerge from organizational interventions that modify working conditions: workload reduction, flexible scheduling, leadership support, PPE availability, and a psychologically safe work environment. Individual-level programs are valuable complements, not substitutes for structural change.

Three principal conclusions emerge from the synthesis:

1. Mental health management is a management responsibility, not solely a clinical one. The burden of mental health management belongs to healthcare institutions and their leaders, not only to individual workers' coping strategies. Structural conditions, staffing, workload, scheduling, physical environment, and organizational culture, are the primary modifiable drivers.

2. A two-pronged approach is essential. Structural organizational reforms (Level 1 and Level 2 of the proposed framework) must be combined with accessible, targeted psychological support programs (Level 3). These tiers are complementary: organizational change creates the conditions for individual-level interventions to succeed.

3. For Ukraine, the priority is systemic. The evidence from Ukrainian studies identifies satisfaction with working conditions as the single strongest predictor of HCW mental health [7]. Against the background of 20–75% burnout prevalence [17] and the compounded stressors of pandemic and wartime, the Ukrainian healthcare system requires prioritized investment in staffing normalization, adequate resource provision, and leadership development - before and alongside individual psychological support programs.

Prospects for further research include: longitudinal RCTs of multi-level interventions specifically in the Ukrainian healthcare context; economic analyses of the cost-effectiveness of organizational versus individual interventions in low- and middle-income settings; development and validation of Ukrainian-adapted standardized screening tools for HCW mental health; and research addressing the specific needs of physician, allied health, and emergency medicine subgroups, currently underrepresented in the intervention literature relative to nurses.

Funding. The author received no funding for this research.

Conflict of Interest. The author declares no conflict of interest.

AI Use Declaration. During the preparation of this paper, the author used Gemini and ChatGPT for brainstorming, language editing, and refining the clarity of the text. Following its use, the author carefully reviewed and edited all generated content and assume full responsibility for the final version of the publication.

References

1. Cohen, C., Pignata, S., Bezak, E., Tie, M., & Childs, J. (2023). Workplace interventions to improve well-being and reduce burnout for nurses, physicians and allied healthcare professionals: A systematic review. *BMJ Open*, 13(6), Article e071203. <https://doi.org/10.1136/bmjopen-2022-071203>
2. Maldonado Ladino, M. D., Bolaños, C., Calderón Ramírez, V. A., Silva Giraldo, E. J., Álzate, J. P., Cubides, A., & Botero Carvajal, A. (2023). Effects of internet-based, psychosocial, and early medical interventions on professional burnout in health care workers: Systematic literature review and meta-analysis. *Internet Interventions*, 34, Article 100682. <https://doi.org/10.1016/j.invent.2023.100682>
3. Kowalska, J., & Domagała, A. (2024). Interdisciplinary managerial interventions for healthcare workers' mental health: A review with COVID-19 emphasis. *Medycyna Pracy. Workers' Health and Safety*, 75(1), 57–67. <https://doi.org/10.13075/mp.5893.01448>
4. Aust, B., Leduc, C., Cresswell-Smith, J., O'Brien, C., Rugulies, R., Leduc, M., Ni Dhalaigh, D., Dushaj, A., Fanaj, N., Guinart, D., Maxwell, M., Reich, H., Ross, V., Sadath, A., Schnitzspahn, K., Tóth, M. D., van Audenhove, C., van Weeghel, J., Wahlbeck, K., ... Greiner, B. A. (2024). The effects of different types of organisational workplace mental health interventions on mental health and wellbeing in healthcare workers: A systematic review. *International Archives of Occupational and Environmental Health*, 97(5), 485–522. <https://doi.org/10.1007/s00420-024-02065-z>



5. Gray, P., Senabe, S., Naicker, N., Kgalamono, S., Yassi, A., & Spiegel, J. M. (2019). Workplace-based organizational interventions promoting mental health and happiness among healthcare workers: A realist review. *International Journal of Environmental Research and Public Health*, 16(22), Article 4396. <https://doi.org/10.3390/ijerph16224396>
6. Belita, E., Neil-Sztramko, S. E., Seale, C., Zhou, F., Ongolo Zogo, C., Boamah, S., Cabaj, J., Jack, S. M., Banfield, L., Neudorf, C., Watson-Creed, G., & Dobbins, M. (2025). Organizational interventions to support and promote the mental health of healthcare workers during pandemics and epidemics: A systematic review. *BMC Health Services Research*, 25, Article 731. <https://doi.org/10.1186/s12913-025-12888-2>
7. Borovets, V., & Lyubins, O. (2024). Satisfaction with working conditions and mental health of healthcare workers according to their self-assessment. *Acta Medica Leopoliensia*, 30(1–2), 120–132. <https://doi.org/10.25040/aml2024.1-2.120>
8. Pinchuk, I., Pishel, V., Polyvianaia, M., Chumak, S., Ilnytska, T., Stepanova, N., Filimonova, N., Kopchak, O., Yachnik, Y., Kolodezhny, O., & Solonskyi, A. (2022). Prognostic assessment of stress-related factors in healthcare workers during the COVID-19 pandemic. *Psychiatria Danubina*, 34(3), 572–577. <https://doi.org/10.24869/psyd.2022.572>
9. Martsenkovskyi, D., Babych, V., Martsenkovska, I., Napryeyenko, O., Napryeyenko, N., & Martsenkovsky, I. (2022). Depression, anxiety, stress and trauma-related symptoms and their association with perceived social support in medical professionals during the COVID-19 pandemic in Ukraine. *Advances in Psychiatry and Neurology*, 31(1), 6–14. <https://doi.org/10.5114/ppn.2022.114657>
10. Hanisch, S. E., Twomey, C. D., Szeto, A. C. H., Birner, U. W., Nowak, D., & Sabariego, C. (2016). The effectiveness of interventions targeting the stigma of mental illness at the workplace: A systematic review. *BMC Psychiatry*, 16, Article 1. <https://doi.org/10.1186/s12888-015-0706-4>
11. Xu, Z., Huang, F., Kösters, M., Staiger, T., Becker, T., Thornicroft, G., & Rüsch, N. (2018). Effectiveness of interventions to promote help-seeking for mental health problems: Systematic review and meta-analysis. *Psychological Medicine*, 48(16), 2658–2667. <https://doi.org/10.1017/S0033291718001265>
12. Conversano, C., Ciacchini, R., Orrù, G., Di Giuseppe, M., Gemignani, A., & Poli, A. (2020). Mindfulness, compassion, and self-compassion among health care professionals: What's new? A systematic review. *Frontiers in Psychology*, 11, Article 1683. <https://doi.org/10.3389/fpsyg.2020.01683>
13. Rushforth, A., Durk, M., Rothwell-Blake, G. A. A., Kirkman, A., Ng, F., & Kotera, Y. (2023). Self-compassion interventions to target secondary traumatic stress in healthcare workers: A systematic review. *International Journal of Environmental Research and Public Health*, 20(12), Article 6109. <https://doi.org/10.3390/ijerph20126109>
14. Patole, S., Pawale, D., & Rath, C. (2024). Interventions for compassion fatigue in healthcare providers: A systematic review of randomised controlled trials. *Healthcare*, 12(2), Article 171. <https://doi.org/10.3390/healthcare12020171>
15. Mahanjana, S. K., Pitso, L. A., & Ncube, M. V. (2025). Mapping intervention strategies and mental health support journeys in addressing mental health challenges among healthcare professionals: A scoping review. *BMC Psychology*, 13, Article 651. <https://doi.org/10.1186/s40359-025-02981-w>
16. Manzanedo-Moreno, M., Salcedo-Sampedro, C., Abajas-Bustillo, R., Martín-Melón, R., Fernández Peña, R., & Ortego-Maté, C. (2025). Interventions to reduce compassion fatigue in nursing: A systematic review and meta-analysis of controlled studies. *International Nursing Review*, 72(2), Article e70023. <https://doi.org/10.1111/inr.70023>
17. Chorna, V., Khliestova, S., Hudzevych, L., Kalashchenko, S., & Hryniovskyi, A. (2025). Predictors of professional motivation for the development of emotional burnout syndrome among



- medical workers worldwide and in Ukraine. *Ukraine. Nation's Health*, (4), 90–102. <https://doi.org/10.32782/2077-6594/2025.4/10> [in Ukrainian].
18. Pishel, V., Polyvianaia, M., Pinchuk, I., Myshakivska, O., Thornicroft, G., & Hanlon, C. (2022). Mental health of healthcare workers during COVID-19 pandemic in Ukraine. *Proceedings of the Shevchenko Scientific Society. Medical Sciences*, 66(1), 124–132. <https://doi.org/10.25040/ntsh2022.01.12>
19. Korostiy, V., Maltsev, A., Kozmina, E., & Platinuk, O. (2021). Experience of organization of mental health monitoring in university clinic of Kharkiv National Medical University. *European Psychiatry*, 64(S1), S314. <https://doi.org/10.1192/j.eurpsy.2021.843>
20. Anger, W. K., Dimoff, J. K., & Alley, L. (2024). Addressing health care workers' mental health: A systematic review of evidence-based interventions and current resources. *American Journal of Public Health*, 114(S2), S213–S226. <https://doi.org/10.2105/AJPH.2023.307556>

Отримано:	23.06.2026	Beérkezett:	2026.06.23	Received:	23.06.2026
Прийнято до друку:	28.08.2026	Elfogadva:	2026.08.28	Accepted:	28.08.2026
Опубліковано:	30.09.2026	Megjelent:	2026.09.30	Published:	30.09.2026