Journal of Health Development
e2663-1776

Review

Managing Risks of Faculty in Medical Education: A Comparative Analysis of Global Practices

Farida Amirseitova [1*], Aiman Mussina [2], Roza Suleimenova [3], Bakhtiyar Serik [4], Nursultan Zhunisali [5], Shynar Kulbayeva [6]

Received: December 06, 2025
Revised: December 18, 2025
Accepted: December 20, 2025
Published: December 24, 2025

Citation: Farida Amirseitova, Aiman Mussina, Roza Suleimenova, Bakhtiyar Serik, Nursultan Zhunisali, Shynar Kulbayeva. Managing Risks of Faculty in Medical Education: A Comparative Analysis of Global Practices. J Health Dev. 2025, 60 (7), jhd048.
https://doi.org/10.32921/2663-1776-2025-60-7-jhd048

This work is licensed under a Creative Commons Attribution 4.0 International License

[1] PhD student, Senior Lecturer, and Head of the Academic Department, Department of Epidemiology and Biostatistics, Astana Medical University, Astana, Kazakhstan
[2] Head of the Department of Epidemiology and Biostatistics, Astana Medical University, Astana, Kazakhstan
[3] Associate Professor at the Department of Epidemiology and Biostatistics, Astana Medical University, Astana, Kazakhstan
[4] Director of the Faculty of Medicine, North Kazakhstan University named after Manash Kozybayev, Petropavlovsk, Kazakhstan
[5] Specialist of the Master's and Doctoral Studies Department, Astana Medical University, Astana, Kazakhstan
[6] Assistant Professor at the Department of Clinical Disciplines, Sh. Ualikhanov Kokshetau University, Kokshetau, Kazakhstan

* **Correspondong author**: sembieva.f@amu.kz

Abstract

The problem of occupational risks among the teaching staff (faculty) in medical universities is becoming increasingly relevant due to the growing psychosocial workload, the combination of teaching, research, and clinical activities, as well as the insufficient systematic management of these risks. International experience demonstrates a variety of approaches to ensuring safety, preventing emotional burnout, and fostering a culture of health among academic personnel. A systematic review of publications from 2013 to 2025 was conducted using the databases Scopus, Web of Science, PubMed, eLibrary, and other open sources. The analysis included 36 studies addressing organizational, psychosocial, and ergonomic aspects of risk management among faculty members of medical universities. The PRISMA method was applied for publication selection, and data were classified according to thematic areas (emotional burnout, organizational interventions, occupational safety, and mental health support). International studies show that the key factors contributing to occupational risks among faculty members include high workload, insufficient support from administration, ineffective time allocation between teaching and administrative duties, and a weak culture of mental health care. In Kazakhstan and other Commonwealth of Independent States countries, similar trends have been identified, along with insufficient institutional support, limited resources, and a lack of systematic preventive programs. International experience in managing occupational risks among faculty in medical education highlights the need for an integrated approach that combines individual, organizational, and policy-level measures. For Kazakhstan and other Commonwealth of Independent States countries, it is particularly relevant to develop a regulatory and standardized risk management system for faculty members, focused on preventing burnout, protecting mental and physical health, and improving the quality of the academic environment.

Keywords: occupational risks, faculty, medical education, emotional burnout, occupational safety.

1. Introduction

The health risks faced by educators are determined by several conditions: high psycho-emotional tension; the need for constant switching between different types of tasks; heavy cognitive load involving memory and attention; intensive verbal activity; physical inactivity (hypodynamia); prolonged standing (orthostatic load), and others. The consequences include vision disorders (68%), cardiovascular diseases (48%), and musculoskeletal system disorders (44%), among others [1].

The health status of university teachers is largely influenced by a combination of negative factors such as harmful habits, low motivation for maintaining health, high workload, lack of physical activity, and significant levels of stress. Managing these factors is possible through a rational combination of internal personal resources and external organizational-administrative support [2]. Against this background, university teachers often develop emotional burnout syndrome. Its development is promoted by the combination of intensive pedagogical activities, which involve constant interaction with a large number of people and cause neuropsychological strain, along with the performance of research tasks and participation in other university activities—especially in medical institutions. At the same time, teachers usually do not apply health-preserving and health-strengthening technologies [3-5].

Today, knowledge in medical education is essential but not sufficient. There are numerous real and serious challenges to the successful implementation of medical education. Ten common problems can be characterized as complex issues that seem to have no clear solutions. However, they can be managed and controlled through research, pattern recognition, and adaptive action. By viewing these problems as complex challenges and continuing research, identifying patterns, and applying adaptive strategies, it is possible to find viable and practical ways forward [6,7].

According to Australian researchers, teachers face various demands in their work, and psychosocial aspects play a fundamental role due to the specific nature of the profession [8,9]. Although teaching is associated with different psychosocial health risks, little is known about how to identify and eliminate them [10-12]. This demonstrates how diverse education systems are across countries and how many different factors influence them.

In this regard, the aim of our study is to analyze existing approaches to managing risks associated with faculty members in medical universities worldwide.

2. Methodology

This study was conducted in the format of a systematic literature review aimed at identifying and summarizing international approaches to managing occupational and psychosocial risks among the faculty of medical universities.

Search Strategy

The search for scientific publications was carried out in the international databases Scopus, PubMed, Web of Science, and Google Scholar for the period 2013–2025, using combinations of English-language keywords: “risk management,” “occupational risk,” “faculty,” “medical education,” “academic staff,” “psychosocial risks,” “workplace well-being,” and “occupational health in universities” (Table 1).

Inclusion criteria

- Studies addressing risks associated with the professional activities of medical university faculty;
- Articles describing strategies, programs, or models for managing these risks;
- Peer-reviewed publications available in English or Russian;
- Types of publications: original research papers, reviews, analytical reports, and international guidelines.

Exclusion criteria

- Articles not related to medical education;
- Publications describing risks among students rather than faculty;
- Materials without full-text access or from non–peer-reviewed sources.

Selection process

At the first stage, 512 publications were identified. After removing duplicates and analyzing abstracts, 78 studies were included in the review. At the second stage, an in-depth content analysis was conducted to identify key themes related to risk management among academic staff.

The data synthesis was performed using thematic and content analysis, focusing on identifying common trends, strategies, and tools for risk management in the academic environment. Special attention was given to the comparative analysis of approaches implemented in Europe, North America, and Asia.

https://doi.org/10.32921/2663-1776-2025-60-7-jhd048

Table 1 – Stages of Publication Selection within the Systematic Review (PRISMA Flow)

Stage	Description of Process	Number of Publications
Identification	Search conducted in databases Scopus, PubMed, Web of Science, and Google Scholar for the period 2013–2025 using predefined keywords	512
Screening	Removal of duplicate records and preliminary review of titles and abstracts	314
Eligibility	Full-text assessment of potentially relevant publications according to inclusion and exclusion criteria	112
Inclusion	Studies meeting all inclusion criteria and included in the final review	78

3. Results

The review analyzed studies addressing risks associated with the faculty of medical universities and approaches to their management. The main findings are summarized by thematic areas [13-16]:

1. Risk of Emotional Burnout and Psychosocial Factors

The review "Risk Factors Associated with Burnout among Medical Faculty" revealed that significant predictors of burnout among medical faculty include age, gender, professional status, high workload, administrative responsibilities, insufficient support from leadership and colleagues, and a low sense of autonomy.

2. Interventions Aimed at Supporting Mental Health

The study "Mental Health Interventions Affecting University Faculty" (2024) evaluated mental health support programs for teaching staff. It was found that interventions involving support groups, counseling, and stress management workshops led to significant improvements in indicators of depression, anxiety, and stress among participants.

3. Regional and Resource-Based Differences in Approaches

A general observation indicates that in countries with well-developed occupational health services and greater funding (e.g., the United States and Europe), comprehensive strategies are implemented — including university policies, legislation, and support programs. In contrast, in resource-limited countries, less structured measures such as short-term training and preventive seminars are more common.

4. Physical and Ergonomic Risks

The study "Safety Risk Assessment in Medical and Paramedical Education Laboratories" (Iran) applied risk assessment methods such as FMEA to identify safety, ergonomic, and chemical/biological protection factors in laboratories. Reported issues included inadequate equipment, poor lighting, insufficient ventilation, and suboptimal workspace organization.

5. Organizational and Institutional Measures

The study "Interventions to Reduce Burnout Among University Lecturers" (2025) analyzed organizational measures such as the development of a wellness culture, improved communication, balanced workload distribution, and flexible scheduling. These interventions proved effective in reducing stress and burnout levels among academic staff. Smagulov et al. examined the impact of professional activity among university faculty on the development of burnout syndrome. The study involved lecturers from Karaganda Medical University and other universities in Kazakhstan. It was found that the most pronounced phases of burnout were "resistance" and "exhaustion" [17].

A similar study describing the health status of university faculty revealed significant complaints related to workload, irregular work schedules, and insufficient ergonomic and sanitary conditions [19].

Research conducted among medical universities in Kazakhstan showed that low job satisfaction and high psychological distress were correlated with age, administrative workload, expectations, and the level of institutional support [18].

According to a study by Russian researchers, the health of academic staff was assessed in terms of physical indicators, presence of chronic diseases, and their relationship with workload and working conditions [20].

4. Discussion

The obtained results are consistent with the understanding that psychosocial risks are a key factor influencing the quality of life and productivity of university faculty. For example, reference highlights the role of administrative workload and lack of autonomy as major contributors to burnout — findings that align with broader reviews in the field of academic work. The supportive measures identified in and are comparable to practices used in European and North American universities, where wellness programs, mentoring, counseling, and task redistribution are integral parts of institutional policy [13-16].

A crucial observation is that universities in resource-limited settings face significant challenges in implementing comprehensive support programs. For instance, laboratory safety assessments and ergonomic improvements require

investments in infrastructure and training, which can be difficult for institutions with limited funding [15].

Universities and government bodies should therefore develop integrated programs that include not only individual-level interventions (such as training sessions and psychological support) but also institutional changes: clear delineation of responsibilities, balanced distribution of teaching, administrative, and research workloads, and greater flexibility in working conditions.

It is essential to establish sustainable mental health support services, mentoring systems, feedback mechanisms, and opportunities for collaboration within academic teams. Investment in laboratory safety, equipment, ergonomics, and protection against biological and chemical hazards is particularly important in medical education, where faculty often have clinical and laboratory responsibilities.

There is also a need for more rigorous research, including randomized controlled trials (RCTs) and controlled interventions, to evaluate the effects of various programs in different contexts. Longitudinal (follow-up) studies should assess whether intervention effects persist over 1–2 years or more. Additionally, standardized measurement tools for burnout and occupational risk, as well as harmonized definitions and scales, are needed. Future research should focus on regions underrepresented in international literature — such as Eastern Europe, Central Asia, and developing countries.

5. Conclusion

A significant proportion of university faculty (over half) experience health impairments associated with professional stressors and an unfavorable psycho-emotional environment, both at work and at home. Contributing factors include low health indicators and limited engagement in health-promoting behaviors.

Corrective measures should involve the implementation of health-preserving technologies and the creation of favorable conditions for professional activity. Comprehensive risk management programs that include psychological support, improved working conditions, workload optimization, and the development of wellness initiatives have proven effective in reducing stress levels and increasing job satisfaction among academic staff.

Considering international experience, it is essential to develop national frameworks for risk assessment and implement measures aimed at improving the working conditions of faculty members in Kazakhstan and other CIS countries.

Conflict of interest. The authors declare no conflicts of interest.

Authors contributions: All authors equally participated in the study and writing of this article.

Declarations. Ethics approval and consent to participate Ethical approval was not necessary or relevant.

References

1. Polunina, N. V., Soltamakova, L. S., Buslaeva, G. N., & Polunin, V. S. (2021). Risk factors influencing the health of university teachers. Russian Medicine, 27(5), 423-432. https://doi.org/10.17816/0869-2106-2021-27-5-423-432

2. Artjuhov, I. P., Gorbach, N. A., & Lisnjak, M. A. (2015). Zdorov'e professorsko-prepodavatel'skogo sostava vuzov: problemy i vozmozhnosti upravlenija (jekspertnaja ocenka) (The health of professional and teaching staff of institutes of higher education: Problems and possibilities of management (an expertise evaluation)) [in Russian]. Zdravoohranenie Rossijskoj Federacii, 59(4), 44-48.

3. Freudenberger, H. J. (1974). Staff burn-out. Journal of Social Issues, 30(1), 159–165. https://doi.org/10.1111/j.1540-4560.1974.tb00706.x

4. Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. Annual Review of Psychology, 52, 397–422. https://doi.org/10.1146/annurev.psych.52.1.397

5. Bogdan, N. N., & Samsonova, E. A. (2020). Jemocional'noe vygoranie u prepodavatelej vuzov: sposoby vyjavlenija i preduprezhdenija (Emotional burnout among university lecturers: Methods of detection and prevention) [in Russian]. Mezhdunarodnyj nauchno-issledovatel'skij zhurnal, (6-2 (96)), 170-175. https://doi.org/10.17513/mjeo.12026

6. Ansari, A. A., Arekat, M. R., & Salem, A. H. (2018). Validating the modified System for Evaluation of Teaching Qualities: A teaching quality assessment instrument. Advances in Medical Education and Practice, 9, 881–886. https://doi.org/10.2147/AMEP.S181094

7. Frank, J. R., Snell, L. S., Cate, O. T., Holmboe, E. S., Carraccio, C., Swing, S. R., ... & Harris, K. A. (2010). Competency-based medical education: theory to practice. Medical teacher, 32(8), 638-645. https://doi.org/10.3109/0142159X.2010.501190

8. Potter, R., O'Keeffe, V., Leka, S., Webber, M., & Dollard, M. (2019). Analytical review of the Australian policy context for work-related psychological health and psychosocial risks. Safety Science, 111, 37–48. https://doi.org/10.1016/j.ssci.2018.09.012

9. Langenhan, M. K., Leka, S., & Jain, A. (2013). Psychosocial risks: Is risk management strategic enough in business and policy making? Safety and Health at Work, 4(2), 87–94. https://doi.org/10.1016/j.shaw.2013.04.003

10. Metzler, Y. A., Groeling-Müller, G. von, & Bellingrath, S. (2019). Better safe than sorry: Methods for risk assessment of psychosocial hazards. Safety Science, 114, 122–139. https://doi.org/10.1016/j.ssci.2019.01.003

11. Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. Journal of Managerial Psychology, 20(2), 178–187. https://doi.org/10.1108/02683940510579803

12. Petrova, N. G., & Murzenko, O. V. (2018). Emotional burnout syndrome among healthcare workers and university lecturers. Science and Innovation in Medicine, 3(2), 26–29. https://doi.org/10.35693/2500-1388-2018-0-2-26-29

13. Alvandi, M., & Davis, J. (2023). Risk factors associated with burnout among medical faculty: A systematic review. Nursing in the Twenty-First Century, 22(3), 208–213. https://doi.org/10.2478/pielxxiw-2023-0030

14. Hammoudi Halat, D., Sami, W., Soltani, A., & Malki, A. (2024). Mental health interventions affecting university faculty: a systematic review and meta-analysis. BMC public health, 24(1), 3040. https://doi.org/10.1186/s12889-024-20402-2

15. Soltanzadeh, A., Heidari, H., Javadi Hoseini, Z. S., Sorooshnia, M., & Rahimifard, H. (2021). Safety risk assessment in medical and paramedical education laboratories. Archives of Occupational Health, 5(2), 971-979. http://dx.doi.org/10.18502/aoh.v5i2.6192

16. Cao, B., Hassan, N. C., & Omar, M. K. (2025). Interventions to Reduce Burnout Among University Lecturers: A Systematic Literature Review. Behavioral sciences (Basel, Switzerland), 15(5), 649. https://doi.org/10.3390/bs15050649

17. Smagulov, N. K., Lyssakova, T. N., Adilbekova, A. A., Evnevich, A. M., Gitenis, N. V., & Dmitriyev, P. S. (2022). The role of university teachers' occupational activity in the burnout syndrome. Hygiene and Sanitation, 101(4), 398-405. https://doi.org/10.47470/0016-9900-2022-101-4-398-405

18. Uristemova, A., Myssayev, A., Meirmanov, S., & Migina, L. (2024). Predictors of Job Satisfaction and Association with Psychological Distress Among Academic Medicine Faculty in Kazakhstan. La Medicina del lavoro, 115(1), e2024002. https://doi.org/10.23749/mdl.v115i1.15010

19. Smagulov, N. K., Evnevich, A. M., Adilbekova, A. A., & Gitenis, N. V. (2020). Educational process and health of medical university teachers. Hygiene and Sanitation, 99(2), 163-168. https://doi.org/10.47470/0016-9900-2020-99-2-163-168

20. Magomedova, A. M., Vasiliev, M. D., Chumakov, A. S., Makarova, E. V., & Vasilieva, T. P. (2022). State of health among academicians of higher medical and postgraduate educational organizations. Medical and Social Expert Evaluation and Rehabilitation, 25(2), 125–134. https://doi.org/10.17816/MSER109732

Медициналық ЖОО-лардың оқытушылар құрамының қызметімен байланысты тәуекелдерді басқару тәсілдері: Халықаралық шолу

Амирсеитова Ф.Т. [1], Мусина А.А. [2], Сулейменова Р.К. [3], Серик Б.С. [4], Жунисали Н.К. [5], Кульбаева Ш.К. [6]

[1] PhD докторант, аға оқытушы және оқу бөлімінің меңгерушісі, эпидемиология және биостатистика кафедрасы, Астана медициналық университеті, Астана, Қазақстан

[2] Эпидемиология және биостатистика кафедрасының меңгерушісі, Астана медициналық университеті, Астана, Қазақстан

[3] Эпидемиология және биостатистика кафедрасының доценті, Астана медициналық университеті, Астана, Қазақстан

[4] Медицина факультетінің директоры, Манаш Қозыбаев атындағы Солтүстік Қазақстан университеті, Петропавл, Қазақстан

[5] Магистратура және докторантура кафедрасының маманы, Астана медициналық университеті, Астана, Қазақстан

[6] Клиникалық пәндер кафедрасының доценті, Ш.Уәлиханов атындағы Көкшетау университеті, Көкшетау, Қазақстан

https://doi.org/10.32921/2663-1776-2025-60-7-jhd048

Түйіндеме

Медицина университеттеріндегі оқытушылар құрамының (профессор-оқытушылар құрамының) кәсіби тәуекелдері мәселесі психоәлеуметтік жүктеменің артуына, оқыту, ғылыми-зерттеу және клиникалық қызметті қатар атқаруға, сондай-ақ осы тәуекелдерді жүйелі басқарудың жеткіліксіздігіне байланысты барған сайын өзекті бола түсуде. Халықаралық тәжірибе академиялық персоналдың қауіпсіздігін қамтамасыз ету, эмоциялық қажуды (күйіп кетуді) алдын алу және денсаулық мәдениетін қалыптастыру бойынша әртүрлі тәсілдердің бар екенін көрсетеді. 2013–2025 жылдар аралығындағы жарияланымдарға жүйелі шолу Scopus, Web of Science, PubMed, eLibrary дерекқорлары мен басқа да ашық дереккөздер негізінде жүргізілді. Талдауға медицина университеттерінің оқытушылар құрамындағы тәуекелдерді басқарудың ұйымдастырушылық, психоәлеуметтік және эргономикалық аспектілерін қарастыратын 36 зерттеу енгізілді. Жарияланымдарды іріктеу үшін PRISMA әдісі қолданылды, ал деректер тақырыптық бағыттар бойынша (эмоциялық қажу, ұйымдастырушылық араласулар, еңбекті қорғау және психикалық денсаулықты қолдау) жіктелді. Халықаралық зерттеулер оқытушылар құрамындағы кәсіби тәуекелдердің негізгі факторлары ретінде жұмыс жүктемесінің жоғары болуын, әкімшілік тарапынан қолдаудың жеткіліксіздігін, оқытушылық және әкімшілік міндеттер арасындағы уақытты тиімсіз бөлуді, сондай-ақ психикалық денсаулыққа қамқорлық мәдениетінің әлсіздігін айқындайды. Қазақстанда және Тәуелсіз Мемлекеттер Достастығының басқа елдерінде де ұқсас үрдістер байқалады, олар институционалдық қолдаудың жеткіліксіздігімен, ресурстардың шектеулілігімен және жүйелі алдын алу бағдарламаларының болмауымен қатар жүреді. Медициналық білім беру саласындағы оқытушылар құрамының кәсіби тәуекелдерін басқарудағы халықаралық тәжірибе жеке, ұйымдастырушылық және саясат деңгейіндегі шараларды біріктіретін кешенді тәсілдің қажеттігін көрсетеді. Қазақстан және Тәуелсіз Мемлекеттер Достастығының басқа елдері үшін оқытушылар құрамына арналған кәсіби тәуекелдерді басқарудың нормативтік және стандартталған жүйесін дамыту, эмоциялық қажудың алдын алуға, психикалық және физикалық денсаулықты қорғауға, сондай-ақ академиялық ортаның сапасын арттыруға бағыттау аса өзекті болып табылады.

Түйін сөздер: кәсіби тәуекелдер, оқытушылар құрамы, медициналық білім беру, эмоциялық қажу, еңбекті қорғау.

Подходы к управлению рисками, связанными с деятельностью профессорско-преподавательского состава в медицинских ВУЗах: Международный обзор

Амирсеитова Ф.Т. [1], Мусина А.А. [2], Сулейменова Р.К. [3], Серик Б.С. [4], Жунисали Н.К. [5], Кульбаева Ш.К. [6]

[1] PhD-докторант, старший преподаватель и заведующая учебной частью, кафедра эпидемиологии и биостатистики, Медицинский университет Астана, Астана, Казахстан

[2] Заведующая кафедрой эпидемиологии и биостатистики, Медицинский университет Астана, Астана, Казахстан

[3] Доцент кафедры эпидемиологии и биостатистики, Медицинский университет Астана, Астана, Казахстан

[4] Директор медицинского факультета, Северо-Казахстанский университет имени Манаша Козыбаева, Петропавловск, Казахстан

[5] Специалист отдела магистратуры и докторантуры, Медицинский университет Астана, Астана, Казахстан

[6] Ассистент профессора, кафедра клинических дисциплин, Кокшетауский университет имени Ш.Уалиханова, Кокшетау, Казахстан

Резюме

Проблема профессиональных рисков среди профессорско-преподавательского состава медицинских университетов становится всё более актуальной в связи с ростом психосоциальной нагрузки, совмещением преподавательской, научной и клинической деятельности, а также недостаточной системностью управления этими рисками. Международный опыт демонстрирует разнообразие подходов к обеспечению безопасности, профилактике эмоционального выгорания и формированию культуры здоровья среди академического персонала. Систематический обзор публикаций за период 2013–2025 гг. был проведён с использованием баз

https://doi.org/10.32921/2663-1776-2025-60-7-jhd048

данных Scopus, Web of Science, PubMed, eLibrary и других открытых источников. В анализ включены 36 исследований, посвящённых организационным, психосоциальным и эргономическим аспектам управления рисками среди профессорско-преподавательского состава медицинских университетов. Для отбора публикаций применялся метод PRISMA, а данные классифицировались по тематическим направлениям (эмоциональное выгорание, организационные вмешательства, охрана труда и поддержка психического здоровья). Международные исследования показывают, что ключевыми факторами, способствующими формированию профессиональных рисков у преподавателей, являются высокая рабочая нагрузка, недостаточная поддержка со стороны администрации, неэффективное распределение времени между преподавательскими и административными обязанностями, а также слабая культура заботы о психическом здоровье. В Казахстане и других странах Содружества Независимых Государств выявлены сходные тенденции, сопровождающиеся недостаточной институциональной поддержкой, ограниченными ресурсами и отсутствием системных профилактических программ. Международный опыт управления профессиональными рисками среди профессорско-преподавательского состава в медицинском образовании подчёркивает необходимость комплексного подхода, сочетающего меры на индивидуальном, организационном и политико-нормативном уровнях. Для Казахстана и других стран Содружества Независимых Государств особенно актуальна разработка нормативной и стандартизированной системы управления рисками для преподавателей, ориентированной на профилактику выгорания, защиту психического и физического здоровья, а также повышение качества академической среды.

Ключевые слова: профессиональные риски, профессорско-преподавательский состав, медицинское образование, эмоциональное выгорание, охрана труда.

https://doi.org/10.32921/2663-1776-2025-60-7-jhd048