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L. M. Aktayeva^{1*}

QUALITY OF WORKING LIFE OF NURSING PERSONNEL IN THE REPUBLIC OF KAZAKHSTAN: ANALYSIS AND ASSESSMENT

¹Republican research institute for occupational safety and health of the Ministry of labour and social protection of the Republic of Kazakhstan (010000, Republic of Kazakhstan, Astana c., Kravtsova str., 18; e-mail: rniiot@rniiot.kz)

***Lyazzat Meirashyevna Aktaeva** – Republican research institute for occupational safety and health of the Ministry of labour and social protection of the Republic of Kazakhstan; 010000, Republic of Kazakhstan, Astana c., Kravtsova str., 18; e-mail: rniiot@rniiot.kz

Aim. To analyse working conditions, labour relations, and the system of professional development of nursing personnel in Kazakhstan in the context of the requirements of International Labour Organization (ILO) Convention No. 149 and ILO Recommendation No. 157. The study examines international approaches, the regulatory and legal framework, and the results of a sociological survey of nurses, which make it possible to identify key challenges and directions for their resolution.

Materials and methods. The study employed a mixed-methods approach, combining quantitative, qualitative, and comparative-analytical methods to assess working conditions, labour relations, and the system of professional development of nursing personnel in the Republic of Kazakhstan.

Results and discussion. International practice demonstrates that effective management of healthcare systems is not possible without taking into account the condition of human resources and the working conditions of healthcare workers. In EU and OECD countries, monitoring systems are used to assess workforce availability, workload, and the impact of working conditions on the quality of healthcare services. Similar approaches are applied by the WHO and ILO in assessing the sustainability of healthcare systems.

Conclusion. The study results demonstrate that ensuring the sustainability of the healthcare system in the Republic of Kazakhstan requires a transition from a purely quantitative approach to workforce management to a comprehensive model that takes into account working conditions, occupational risks, and human resource development. The implementation of the proposed measures will reduce the workload on healthcare workers, improve their quality of working life, and ensure the effective functioning of the healthcare system in the long term.

Key words: occupational safety and health; health of healthcare workers; nursing personnel; working conditions; occupational risks; quality of working life; healthcare system; sustainability

INTRODUCTION

Working conditions of nursing personnel in Kazakhstan are characterized by high workload and limited opportunities for professional development, which negatively affect the quality of working life and the sustainability of the healthcare workforce. Institutional constraints have been identified, including inconsistencies in regulatory frameworks and the insufficient implementation of advanced nursing practice. The need to improve the regulatory framework and organizational mechanisms for the management of nursing activities is substantiated [1, 2, 3, 4].

The modern healthcare system operates under conditions of increasing workload on healthcare personnel, where issues of workers' health, safety, and well-being are becoming a priority [5, 6, 7, 8]. Nursing personnel play a key role in ensuring the accessibility and quality of healthcare services, with their number in the Republic of Kazakhstan exceeding 190 thousand. At the same time, the transformation of the

healthcare system is accompanied by the expansion of nurses' functions and increasing requirements for their professional performance.

A key challenge remains the mismatch between working conditions and labour relations and the contemporary requirements for the development of nursing practice. High workload, professional burnout, insufficient implementation of advanced nursing practice, and inconsistencies in regulatory legal acts limit the effective utilization of nurses' potential and reduce the overall efficiency of the healthcare system. The absence of a systemic approach to regulating these issues hinders the provision of decent working conditions and the sustainability of the healthcare workforce [9, 10].

In international practice, ensuring decent working conditions for healthcare workers is considered one of the key factors for the sustainability of healthcare systems [11, 12, 13]. International Labour Organization (ILO) Convention No. 149 and ILO Rec-

Table 1 – Number of nursing personnel in the republic of kazakhstan by region for 2020 – 2024 (persons) [18]

Region	2020	2021	2022	2023	2024
Republic of Kazakhstan	185 757	188 800	191 302	190 644	191 728
Abai*	–		6 916	6 789	6 644
Akmola	6 497	6 557	6 438	6 344	6 244
Aktobe	8 150	8 108	9 523	9 513	9 597
Almaty region	16 276	17 290	10 692	10 624	11 025
Atyrau	6 117	6 248	6 283	6 344	6 303
West Kazakhstan	7 094	7 207	7 198	7 138	7 142
Zhambyl	11 535	12 105	12 470	12 373	12 445
Zhetysu*	–	–	6 616	6 716	6 604
Karaganda	14 034	14 033	11 695	11 323	11 133
Kostanay	7 141	6 998	6 816	6 800	6 567
Kyzylorda	10 601	10 721	10 854	11 238	11 346
Mangystau	7 412	7 518	7 629	7 430	7 904
Pavlodar	7 174	7 107	7 078	7 074	6 913
North Kazakhstan	5 839	5 713	5 544	5 429	5 230
Turkestan*	20 036	20 292	21 048	21 163	21 650
Ulytau	–	–	2 153	2 322	2 399
East Kazakhstan	15 707	15 297	8 240	7 821	7 713
Astana city	12 557	13 078	13 564	13 794	13 688
Almaty city	19 477	19 987	19 659	19 353	19 920
Shymkent city	10 110	10 541	10 886	11 056	11 261

ommendation No. 157 establish requirements for employment conditions, working time, social protection, and professional development of nursing personnel, emphasizing the need to create a safe and supportive working environment. However, in Kazakhstan, a number of institutional and organizational constraints remain, hindering the full implementation of these approaches, which necessitates further research and the development of practical recommendations.

The aim of the study was to analyse working conditions, labour relations, and the system of professional development of nursing personnel in Kazakhstan in the context of the requirements of ILO Convention No. 149 [1] and ILO Recommendation No. 157 [2]. The study examines international approaches, the regulatory and legal framework, and the results of a sociological survey of nurses, which make it possible to identify key challenges and directions for their resolution.

MATERIALS AND METHODS

The study employed a mixed-methods approach, combining quantitative, qualitative, and comparative-analytical methods to assess working conditions, labour relations, and the system of professional development of nursing personnel in the Republic of Kazakhstan.

The quantitative analysis was based on data from a sociological survey of nurses (n=3,320), as well as official statistics reflecting the number of healthcare personnel, workforce availability, and performance indicators of the healthcare system. Descriptive statistical methods, including the calculation of proportional indicators and comparative analysis, were used for data processing. This made it possible to identify key characteristics of working conditions, including workload, working time arrangements, and occupational risk factors.

The qualitative component of the study included expert interviews with representatives of the healthcare system, including healthcare workers, managers of healthcare organizations, and nursing specialists. These interviews made it possible to identify institutional barriers related to regulatory frameworks, the distribution of functions, and the implementation of advanced nursing practice.

The study also incorporated elements of case study analysis based on the practices of healthcare organizations, enabling the assessment of the organization of nursing work, the distribution of functional responsibilities, and the level of nurses' involvement in the delivery of healthcare services. The names of the organizations are not disclosed due to confidentiality considerations.

Table 2 – Dynamics of population coverage by nursing personnel by region in the Republic of Kazakhstan per 10,000 Population for 2020 – 2024 (compiled by the author based on sources [18, 19])

Region	2020	2021	2022	2023	2024
Republic of Kazakhstan	100	100	98	96	96
Abai*	–	–	113	111	109
Akmola	88	89	82	81	79
Aktobe	92	91	104	102	102
Almaty region	117	122	72	71	72
Atyrau	95	95	92	92	90
West Kazakhstan	108	109	105	104	103
Zhambyl	102	106	103	102	102
Zhetysu*	–	–	95	96	95
Karaganda	122	122	103	100	98
Kostanay	82	81	82	82	79
Kyzylorda	132	132	132	135	135
Mangystau	106	104	102	97	100
Pavlodar	95	95	94	94	92
North Kazakhstan	107	105	103	102	99
Turkestan*	99	99	101	100	101
Ulytau	–	–	97	105	108
East Kazakhstan	216	211	112	107	106
Astana city	110	110	105	102	96
Almaty city	101	101	94	90	89
Shymkent city	97	98	94	93	92

Comparative analysis was applied to compare the actual working conditions of nurses with international requirements established by ILO Convention No. 149 and ILO Recommendation No. 157. This made it possible to identify key gaps between national practices and international standards.

The regulatory analysis included a review of the legislation of the Republic of Kazakhstan governing the healthcare sector and labour relations, as well as strategic documents defining sectoral development.

The integrated application of statistical analysis, expert assessment, and comparative approaches made it possible to develop a comprehensive methodological framework for the study aimed at identifying factors affecting the health of healthcare workers and the sustainability of the healthcare system.

RESULTS AND DISCUSSION

International practice demonstrates that effective management of healthcare systems is not possible without taking into account the condition of human resources and the working conditions of healthcare workers [14, 15]. In EU and OECD countries, monitoring systems are used to assess workforce availability, workload, and the impact of working conditions on

the quality of healthcare services. Similar approaches are applied by the World Health Organization and the International Labour Organization in assessing the sustainability of healthcare systems [16, 17].

In the Republic of Kazakhstan, nursing personnel represent the largest category of healthcare workers, which determines their key role in ensuring access to healthcare services. In 2024, the number of nursing personnel amounted to 191,728 individuals. The dynamics of personnel numbers for the period 2020–2024 are presented in Table 1.

According to the data presented in Table 1, the total number of nursing personnel in the country demonstrates a slight increase, rising from 185,757 in 2020 to 191,728 in 2024. At the same time, the regional analysis reveals an uneven distribution of the workforce. The highest numbers are observed in Turkestan region (21,650), Almaty city (19,920), and Astana city (13,688), which can be explained by higher population density and the concentration of healthcare infrastructure.

At the same time, a decline in personnel numbers is observed in several regions. For instance, in Karaganda region the number decreased from 14,034 to 11,133, while in East Kazakhstan region it declined from 15,707 to 7,713. These changes are

Table 3 – Distribution of wages by location of healthcare organization

Salary level (thousands of tenge)	Total		Rural		District center		Urban (regional)		Regional center		Cities of national significance	
	abs.	%	abs.	%	abs.	%	abs.	%	abs.	%	abs.	%
99	5	0,2	4	1,7	0	0	0	0	1	0,1	4	0,4
100 – 149	22	0,7	10	4,3	2	0,6	4	0,4	8	1,0	4	0,4
150 – 199	451	14,4	92	39,8	22	6,9	169	18,5	76	9,8	174	19,3
200 – 249	1243	39,6	81	35,1	118	37,1	428	46,8	347	44,7	258	28,6
250 – 299	852	27,1	30	13,0	102	32,1	205	22,4	231	29,7	233	25,8
300 – 349	366	11,6	11	4,8	53	16,7	74	8,1	75	9,7	134	14,9
350 – 399	144	4,6	1	0,4	16	5,0	28	3,1	26	3,3	63	7,0
400 – 449	34	1,1	2	0,9	2	0,6	2	0,2	7	0,9	22	2,4
450 – 499	14	0,4	0	0	2	0,6	2	0,2	4	0,5	4	0,4
500,000 and above	11	0,4	0	0	1	0,3	2	0,2	2	0,3	6	0,7
Total	3142	100,0	231	100,0	318	100,0	914	100,0	777	100,0	902	100,0

Table 4 – Distribution of wages by type of healthcare organization

Salary level (thousands of tenge)	Total		Primary healthcare		Dispensary		Hospital (inpatient care)		Other healthcare organizations	
	abs.	%	abs.	%	abs.	%	abs.	%	abs.	%
99	5	0,2	2	0,2	0	0	3	0,2	0	0
100 – 149	22	0,7	11	0,9	2	1,2	8	0,5	1	1,2
150 – 199	451	14,4	308	24,9	17	10,5	117	7,0	9	10,8
200 – 249	1243	39,6	563	45,6	77	47,5	572	34,4	31	37,3
250 – 299	852	27,1	216	17,5	43	26,5	568	34,2	25	30,1
300 – 349	366	11,6	90	7,3	17	10,5	247	14,9	12	14,5
350 -399	144	4,6	31	2,5	5	3,1	105	6,3	3	3,6
400 – 449	34	1,1	9	0,7	1	0,6	23	1,4	1	1,2
450 – 499	14	0,4	4	0,3	0	0	10	0,6	0	0
500,000 and above	11	0,4	2	0,2	0	0	8	0,5	1	1,2
Total	3142	100,0	1236	100,0	162	100,0	1661	100,0	83	100,0

largely associated with administrative-territorial reforms and the establishment of new regions (Abai, Zhetysu, Ulytau), which led to the redistribution of human resources.

Despite the relative stability of the absolute number of personnel, the data presented in Table 2 indicate a decline in the level of population coverage by nursing personnel. Overall, the national indicator decreased from 100 to 96 workers per 10,000 population over the period 2020 – 2024. This suggests that population growth has outpaced the expansion of the healthcare workforce.

The most significant decline in population coverage is observed in Akmola region (from 88 to 79),

Karaganda region (from 122 to 98), and Astana city (from 110 to 96). A substantial decrease is also recorded in Almaty region (from 117 to 72), which can be explained by both demographic factors and administrative-territorial redistribution.

At the same time, a high level of coverage is maintained in certain regions, particularly in Kyzylorda region (135 per 10,000 population in 2024), as well as relatively high levels in West Kazakhstan and Turkestan regions.

The decline in population coverage, despite the relative stability in personnel numbers, reflects an increasing workload on healthcare workers. In 2024, on average, one nursing professional accounts for

approximately 96 individuals. This trend indicates an intensification of labour and the emergence of additional occupational risks, including physical and psychosocial strain.

Thus, the results of the analysis of Tables 1 and 2 demonstrate the presence of an imbalance between the number of nursing personnel and the needs of the population. The current situation requires the improvement of workforce planning mechanisms, as well as the consideration of factors related to the working conditions of healthcare workers, in order to ensure the sustainability of the healthcare system.

The results of the sociological survey complement the statistical analysis and allow for the assessment of qualitative characteristics of the working conditions of nursing personnel. A total of 3,142 respondents participated in the study, with an average age of 43.27 years and an average length of service exceeding 20 years.

Despite a high level of job satisfaction (82,8%), the majority of respondents (67,6%) report dissatisfaction with wage levels. The average salary amounts to approximately 198,000 tenge, with higher levels observed among those satisfied with their working conditions.

The analysis of Table 3 shows that the most common wage level falls within the range of 200,000–249,000 tenge. In rural areas, there is a higher proportion of workers with below-average incomes (150,000 – 199,000 tenge), whereas in cities of national significance, a higher share of workers receive higher incomes. At the same time, despite higher wage levels in urban areas, the level of job satisfaction remains low, indicating the influence of additional factors, including high labour intensity and the cost of living.

The data presented in Table 4 indicate that wage levels are higher in hospital (inpatient) settings compared to primary healthcare; however, it is in hospital settings that higher workload and labour intensity are observed. In primary healthcare, despite lower wage levels, a significant proportion of workers continue to receive low incomes, which reduces the attractiveness of this sector.

In addition, 57.1% of respondents reported staff shortages in healthcare organizations, while 44.1% indicated that they finance their continuing professional development at their own expense, reflecting insufficient institutional support for professional development.

The analysis of survey results revealed a number of systemic challenges, including low wage levels, high workload, staff shortages, inadequate material and technical resources, and a high level of psychosocial stress. Respondents also reported a high prevalence of occupational diseases, including musculoskeletal disorders, respiratory and infectious diseases, as well as emotional burnout.

The identified staff shortages, declining workforce availability, and high workload among health-

care workers necessitate a revision of the organizational model of nursing services. In particular, a transition to a model of interprofessional collaboration is justified, in which nurses and physicians function as equal participants in the diagnostic and treatment process, with shared responsibility for outcomes.

An additional direction involves improving the economic mechanisms underlying the functioning of nursing services. The findings on dissatisfaction with wage levels and the mismatch between remuneration and actual workload support the feasibility of introducing differentiated pay systems, as well as considering the direct tariffing of nursing services as an independent category of healthcare services.

The analysis of survey results also highlights the need to strengthen the institutional role of nursing personnel. In this regard, the introduction of coordinating positions in nursing at the healthcare system level is justified, along with expanding the participation of nurses in management and decision-making processes.

The development of the system of professional education and qualifications is of critical importance. Given the identified challenges related to access to training and career development, there is a need to harmonize the sectoral qualifications framework with international standards, including the formalization of competency levels, the development of advanced nursing practice education programs, and the expansion of access to educational opportunities through public funding.

The study findings also confirm the need to improve working conditions. In particular, respondents emphasize the importance of equipping workplaces with modern equipment, personal protective equipment (PPE), and improving occupational safety and health (OSH) conditions, including lighting, ventilation, and thermal comfort. In addition, significant attention should be given to reducing administrative workload through the digitalization of processes and the optimization of documentation flows.

Another important direction is the development of human resources capacity through the implementation of mechanisms for retaining specialists within the healthcare system, including mandatory service requirements for graduates, the provision of social benefits (such as housing and incentives), as well as the development of motivation and professional growth programs.

An important aspect is also the advancement of evidence-based nursing practice and the implementation of international standards, including classifications of nursing diagnoses and interventions, which will contribute to improving the quality of healthcare services and standardizing nursing activities.

In addition, there is a need to improve the regulatory and legal framework, including the updating of professional standards, the revision of qualification

requirements, and the development of mechanisms for the participation of professional associations and trade unions in the regulation of labour relations.

Thus, the results obtained demonstrate that the identified challenges are complex in nature and require the implementation of integrated measures aimed at improving organizational, economic, and institutional mechanisms of nursing service functioning. The proposed directions are based on empirical research findings and are aligned with international approaches to healthcare workforce development.

CONCLUSION

The conducted study confirmed that the current system of nursing personnel management in the Republic of Kazakhstan is characterized by structural imbalances between workforce numbers, population coverage, and working conditions. Despite the relative stability in the number of nursing personnel (191,728 in 2024), the coverage indicator decreased from 100 to 96 per 10,000 population, indicating that the growth in demand for healthcare services is outpacing the development of workforce capacity. Significant regional disparities were identified, along with a high workload on personnel (an average of 96 individuals per worker), contributing to an increase in occupational risks and a decline in the sustainability of the healthcare system.

Theoretical significance. The study expands the scientific understanding of healthcare system sustainability by integrating quantitative indicators of workforce provision with a qualitative assessment of working conditions and occupational risks. It is demonstrated that the effectiveness of healthcare system performance is determined not only by the number of personnel but also by the balance between workload, working conditions, and institutional support. The findings contribute to the development of a comprehensive approach to the analysis of nursing personnel management, taking into account the requirements of ILO Convention No. 149 and ILO Recommendation No. 157.

Practical significance. The findings of the study indicate that improving working conditions and enhancing workforce management mechanisms can significantly improve the quality of healthcare services and the sustainability of the healthcare system. It is established that reducing workload, increasing wage levels, and developing professional capacity directly contribute to staff retention, a reduction in professional burnout, and improved performance of healthcare organizations.

Practical recommendations for the healthcare system and healthcare organizations:

- implement evidence-based workforce planning mechanisms, taking into account regional specifics, demographic pressures, and the actual volume of healthcare services;

- develop and introduce workload standards for nursing personnel, including the optimization of the nurse-to-patient ratio and the redistribution of functions through the development of junior medical staff;

- improve remuneration systems by introducing differentiated mechanisms that account for labour intensity, working conditions, and the level of occupational risks, including additional payments for hazardous and psychosocial factors;

- ensure access to continuing professional education through state and employer support, including the development of advanced nursing practice programs and the harmonization of qualification requirements with international standards;

- improve working conditions by strengthening occupational safety and health (OSH) systems, ensuring the provision of personal protective equipment (PPE), modern equipment, and ergonomic workplaces;

- reduce administrative workload through the digitalization of processes and the optimization of documentation flows in healthcare organizations;

- expand the participation of nursing personnel in management and decision-making processes at both the organizational and system levels;

- improve the regulatory and legal framework, including the development of professional standards, support for professional associations, and the adoption of international models of nursing practice.

Overall, the study results demonstrate that ensuring the sustainability of the healthcare system in the Republic of Kazakhstan requires a transition from a purely quantitative approach to workforce management to a comprehensive model that takes into account working conditions, occupational risks, and human resource development. The implementation of the proposed measures will reduce the workload on healthcare workers, improve their quality of working life, and ensure the effective functioning of the healthcare system in the long term.

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Sole authorship.

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Л. М. Актаева^{1*}

КАЧЕСТВО ТРУДОВОЙ ЖИЗНИ СЕСТРИНСКОГО ПЕРСОНАЛА В РЕСПУБЛИКЕ КАЗАХСТАН: АНАЛИЗ И ОЦЕНКА

¹Республиканский научно-исследовательский институт по охране труда Министерства труда и социальной защиты населения Республики Казахстан (010000, Республика Казахстан, г. Астана, ул. Кравцова, 18; e-mail: rniiot@rniiot.kz)

***Лязат Мейрашевна Актаева** – Республиканский научно-исследовательский институт по охране труда Министерства труда и социальной защиты населения Республики Казахстан; 010000, Республика Казахстан, г. Астана, ул. Кравцова, 18; e-mail: rniiot@rniiot.kz

Цель. Анализ условий труда, трудовых отношений и системы профессионального развития сестринского персонала в Казахстане в контексте требований Конвенции МОТ №149 и Рекомендации МОТ №157. В работе были рассмотрены международные подходы, нормативно-правовая база, а также результаты социологического опроса медицинских сестер, что позволяет выявить ключевые проблемы и определить направления их решения.

Материалы и методы. В исследовании был использован комплексный (смешанный) подход, объединяющий количественные, качественные и сравнительно-аналитические методы для оценки условий труда, трудовых отношений и системы профессионального развития сестринского персонала в Республике Казахстан.

Результаты и обсуждение. Международная практика показывает, что эффективное управление системами здравоохранения невозможно без учета состояния человеческих ресурсов и условий труда медицинских работников. В странах ЕС и ОЭСР используются системы мониторинга для оценки обеспеченности кадрами, уровня нагрузки и влияния условий труда на качество медицинских услуг. Аналогичные подходы применяются Всемирной организацией здравоохранения и Международной организацией труда при оценке устойчивости систем здравоохранения.

Заключение. Результаты исследования свидетельствуют о том, что обеспечение устойчивости системы здравоохранения Республики Казахстан требует перехода от преимущественно количественного подхода к управлению кадровыми ресурсами к комплексной модели, учитывающей условия труда, профессиональные риски и развитие человеческих ресурсов. Реализация предложенных мер позволит снизить нагрузку на медицинских работников, повысить качество их трудовой жизни и обеспечить эффективное функционирование системы здравоохранения в долгосрочной перспективе.

Ключевые слова: охрана труда и техника безопасности; здоровье медицинских работников; сестринский персонал; условия труда; профессиональные риски; качество трудовой жизни; система здравоохранения; устойчивость

Л. М. Актаева^{1*}

ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ МЕЙІРГЕРЛІК ПЕРСОНАЛДЫҢ ЕҢБЕК ӨМІРІ САПАСЫ: ТАЛДАУ ЖӘНЕ БАҒАЛАУ

¹Қазақстан Республикасы Еңбек және халықты әлеуметтік қорғау министрлігінің Еңбекті қорғау жөніндегі республикалық ғылыми-зерттеу институты (010000, Қазақстан Республикасы, Астана қ., Кравцов к-сі, 18; e-mail: rniiot@rniiot.kz)

***Актаева Лязат Мейрашевна** – Қазақстан Республикасы Еңбек және халықты әлеуметтік қорғау министрлігінің Еңбекті қорғау жөніндегі республикалық ғылыми-зерттеу институты; 010000, Қазақстан Республикасы, Астана қ., Кравцов к-сі, 18; e-mail: rniiot@rniiot.kz

Зерттеудің мақсаты. Қазақстандағы мейіргерлік персоналдың еңбек жағдайларын, еңбек қатынастарын және кәсіби даму жүйесін Халықаралық еңбек ұйымының №149 Конвенциясы және №157 Ұсынымы талаптары тұрғысынан талдау болып табылады. Зерттеу барысында халықаралық тәсілдер, нормативтік-құқықтық база, сондай-ақ мейіргерлер арасында жүргізілген социологиялық сауалнама нәтижелері қарастырылып, негізгі мәселелер мен оларды шешу бағыттары айқындалады.

Материалдар және әдістер. Зерттеуде сандық, сапалық және салыстырмалы-талдамалық әдістерді біріктіретін кешенді (аралас) тәсіл қолданылды, бұл Қазақстан Республикасындағы мейіргерлік персоналдың еңбек жағдайларын, еңбек қатынастарын және кәсіби даму жүйесін бағалауға мүмкіндік береді.

Нәтижелер және талқылау. Халықаралық тәжірибе денсаулық сақтау жүйелерін тиімді басқару адам ресурстарының жай-күйі мен медицина қызметкерлерінің еңбек жағдайларын ескермей мүмкін еместігін көрсетеді. ЕО және ЭЫДҰ елдерінде кадрлармен қамтамасыз етілуін, еңбек жүктемесін және еңбек жағдайларының медициналық қызмет сапасына әсерін бағалау үшін мониторинг жүйелері қолданылады. Ұқсас тәсілдер Дүниежүзілік денсаулық сақтау ұйымы және Халықаралық еңбек ұйымы тарапынан денсаулық сақтау жүйелерінің тұрақтылығын бағалау кезінде де пайдаланылады.

Қорытындылар. Зерттеу нәтижелері Қазақстан Республикасының денсаулық сақтау жүйесінің тұрақтылығын қамтамасыз ету үшін кадрларды басқарудың тек сандық тәсілінен еңбек жағдайларын, кәсіби тәуекелдерді және адам ресурстарын дамытуды ескеретін кешенді модельге көшу қажеттігін көрсетеді. Ұсынылған шараларды іске асыру медицина қызметкерлерінің жүктемесін азайтуға, олардың еңбек өмірінің сапасын арттыруға және денсаулық сақтау жүйесінің ұзақ мерзімді тиімді жұмыс істеуін қамтамасыз етуге мүмкіндік береді.

Кілт сөздер: еңбекті қорғау; медицина қызметкерлерінің денсаулығы; мейіргерлік персонал; еңбек жағдайлары; кәсіби тәуекелдер; еңбек өмірінің сапасы; денсаулық сақтау жүйесі; тұрақтылық