

PROBLEMATIC ISSUES OF TRAINING NURSES IN UKRAINE IN EMERGENCY MEDICINE FROM THE PERSPECTIVE OF LITERATURE

A.A. Gudyma,

*Ivan Horbachevsky Ternopil National Medical University of the
Ministry of Health of Ukraine*

O.O. Prokhorenko,

*Ivan Horbachevsky Ternopil National Medical University of the
Ministry of Health of Ukraine*

A.A. Tomkiv,

*Ivan Horbachevsky Ternopil National Medical University of the
Ministry of Health of Ukraine*

Irena Malašauskienė,

St. Ignatius of Loyola College

Rytis Malašauskas,

St. Ignatius of Loyola College

Abstract

The modern healthcare system is facing challenges related to the effective management of care in supercluster hospitals, especially in the context of crisis situations such as pandemics, military operations and technological change. The aim of the study was to conduct a literature review on the prediction and improvement of emergency nursing management of patients, identifying key trends and recommendations for process optimisation. The literature analysis identified four main areas: curricula and training (38%), resourcing (25%), innovative technologies (20%) and psychological support for staff (17%). Most of the studies were carried out in the United States (40%), in Europe (35%) and in Ukraine (15%). The American and European studies emphasise standardisation of care and the introduction of technology, while the Ukrainian studies adapt global practices to local specificities. The use of technologies such as telemedicine, real-time monitoring systems and early warning algorithms reduces mortality, optimises workload and improves the quality of services. Meanwhile, simulation training helps to improve nurses' decision-making skills and reduce the likelihood of errors. Psychological support is crucial to avoid burnout and ensure productivity. The results of the review show that effective nursing management in supercluster hospitals depends on the integration of international expertise, technological innovation, the development of educational programmes and the psychological well-being of staff.

Keywords: nursing management, supercluster hospitals, emergency care, educational programmes, innovative technologies.

Introduction

Relevance of the topic. The relevance of the study is due to the need to adapt nursing management to the conditions of supercluster hospitals operating in the context of growing challenges in the health care system. Supercluster hospitals must provide a quick and high-quality response to critical patient conditions, which places increased demands on the qualifications of nursing staff, their autonomy and ability to think clinically.

The COVID-19 pandemic, the war in Ukraine, and other global issues have demonstrated the vulnerability of traditional management approaches and emphasized the role of nurses in emergency care. The use of new technologies, electronic medical records,

telemedicine, and real-time monitoring systems, which require new skills and management solutions, draws special attention.

An analytical review of the literature will identify effective approaches to predicting and optimizing the nursing management of emergencies in supercluster hospitals. This will help to improve the quality of medical care and ensure the coordination of actions of medical staff in difficult clinical situations.

Research problem. The modern health care system is faced with the problem of ensuring effective nursing management in the context of the growing complexity of the organization of emergency care in supercluster hospitals. In particular, the need to predict the actions of nursing staff, optimize management processes and introduce modern technologies create new challenges for improving the quality of health care.

The subject of the study is literature sources that cover modern approaches to nursing management in the provision of emergency care in supercluster hospitals and recommendations for improving the efficiency of the organization of nursing staff.

The purpose of the study is to conduct an analytical and statistical review of the literature on predicting and improving the nursing management of patients' emergency conditions in supercluster hospitals in order to identify key trends and develop recommendations for optimizing management processes.

Research objectives:

1. To systematize and classify literature sources covering the issues of nursing management in multidisciplinary hospitals.
2. To conduct a statistical analysis of the frequency of use of different approaches to the organization of nursing management in emergency conditions and to identify key aspects that affect the effectiveness of nursing management based on a literature review.

Research methods: theoretical analysis, mathematical and statistical analysis, systematization and generalization.

1. Analysis of the studied information retrieval systems for scientific medical documents

1.1. Main directions of the studied sources

The main directions of the studied information retrieval systems of scientific medical documents include the organization of nursing management in crisis situations (pandemic, mass admission of patients to a multidisciplinary hospital, military conflicts, natural disasters), innovative technologies in nursing and the changing role of nurses in general.

For example, research in the professional journal *Critical Care Medicine* emphasizes the importance of multidisciplinary collaboration and the use of protocols in pandemics and other crisis situations [8]. The nurse plays the role of an assistant in the team, in particular when performing certain manipulations. However, if necessary, she can become the leader of the same team. The exchange of medical records, communication with the patient and his/her relatives are also among her functions.

Nursing care is especially relevant in the context of admission of patients with infections and in the triage of patients. Publications in the scientific journal *Essential*

Emergency and Critical Care are related to the previous ones. They mainly define universal minimum standards of care in critical conditions, focusing on their role during COVID-19 [7]. According to the analyzed information sources, we observe the progress of innovative technologies in nursing. The use of electronic monitoring systems and telemedicine is actively discussed in the Journal of Clinical Nursing and Computers, Informatics, Nursing as tools to optimize staff performance [1]. The empowerment and autonomy of nurses is discussed in Critical Care Nurse, in particular, their participation in decision-making in intensive care and anesthesiology departments [11]. The organization of nursing care as autonomous in case of emergencies in hospital patients is discussed in Emergency Care and Medicine, BMC Emergency Medicine [3]. The ethical aspects and the role of the nurse in communication with the patient and his/her relatives, as well as the managerial aspects of nursing are presented in the scientific literature of the Journal of Multidisciplinary Sciences and Arts [5].

The literature review showed that the scientific base for nursing management in supercluster hospitals is diverse and focused on several key areas: introduction of the latest technologies, interdisciplinary coordination, and organization of care in emergency situations.

1.2. Frequency of use of literature sources by country

To analyze the frequency of use of literary sources by origin, we reviewed the publications of articles in Ukrainian and foreign scientific journals.

The analysis of the frequency of use of literature sources in nursing management research showed that the bulk of publications come from the United States, Europe and Ukraine. Figure 1 shows the mathematical and statistical analysis of the use of scientific articles.

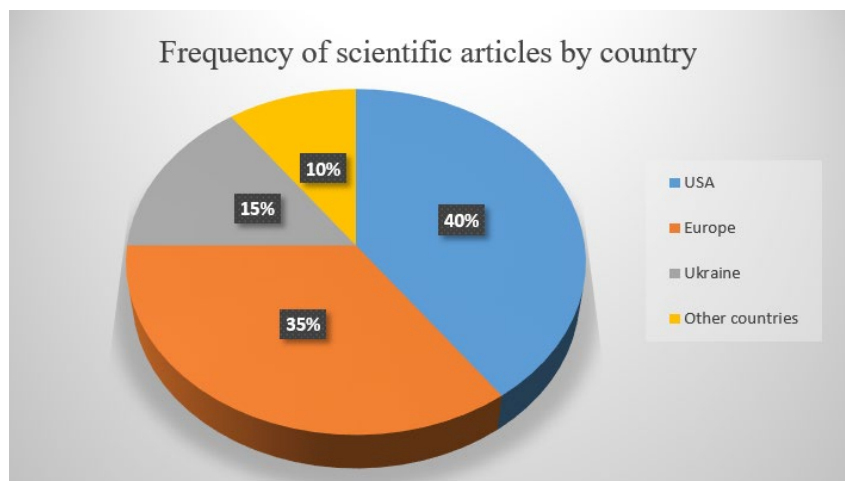


Fig.1. Frequency of scientific articles by country

The largest contribution to the scientific literature was made by American publications (40%), such as Critical Care Medicine and Annals of Emergency Medicine. For example, an article from Critical Care Nurse analyzes modern approaches to organizing care for critically ill patients, focusing on the introduction of interdisciplinary teams and new

technologies in intensive care units [2]. European journals, such as the European Resuscitation Council Guidelines for Resuscitation and Emergency Medicine Australasia, provide standards and protocols adapted to the European context. For example, the European Guidelines for Resuscitation emphasize the importance of a unified approach to emergency care at the global level [10]. Since nurses are active performers in a multidisciplinary team, algorithms for providing emergency care should be worked out first in simulation scenarios to maximize the effectiveness of patient care in emergency conditions. Ukrainian publications that account for 15% of this statistic, such as the Bukovinian Medical Bulletin and Nursing, are focused on the specifics of care in supercluster hospitals, particularly in the context of military operations and pandemics. These publications often contain local recommendations that help to adapt international experience to the national healthcare system. The smallest share, almost 10% of the studied scientific articles on the proposed topics, were published in other countries, in particular in Africa, Latin America, and India. Latin America, represented by the *Revista Latino-Americana de Enfermagem*, focuses on ethical and cultural influences on patient care. African sources mentioned in BMC Emergency Medicine articles provide data on limited resources and management of critical conditions in adverse settings [14].

The frequency of use of literature sources reflects the global interest in developing effective approaches to nursing management. Taking this data into account allows us to develop more universal and locally adapted recommendations.

1.3. Analysis of approaches to the organization of nursing management in emergency conditions of patients in a multidisciplinary hospital

Nursing management in emergencies is one of the key components of the health care system, which directly affects the quality of medical care and patient survival. In the period 2014-2024, a number of studies were conducted to examine the effectiveness of different approaches to organizing the work of nurses in crisis conditions. Key topics include educational programs, resource management, innovation, and psychological support for staff.

One of the most important approaches is the implementation of educational programs aimed at improving clinical skills and decision-making in stressful situations. Simulation training is a key element that allows nurses to respond more effectively to critical patient conditions, improving the use of early warning algorithms such as MEWS (Modified Early Warning Score) [9] and NEWS (National Early Warning Score) to assess patient deterioration during care [12]. It is also important to regularly update knowledge about infection control. For example, studies conducted during the COVID-19 pandemic emphasized the importance of training programs on the use of personal protective equipment (PPE) and isolation protocols to reduce the spread of infections [15]. Effective resource management involves optimizing work processes, providing PPE and modern equipment.

Studies have shown that understaffing and overloading in emergency departments are significant challenges. For example, an analysis of patient intake systems in emergency departments found that the introduction of technology to monitor workload significantly improves the efficiency and quality of care [6]. In addition, the use of IT solutions, such as electronic medical records, allows nurses to quickly obtain the necessary information about

the patient's condition, which reduces the risk of errors in data exchange among healthcare professionals [7]. Modern technologies, such as telemedicine solutions, clinical decision support algorithms, and analytical systems, help improve the quality of patient care. For example, the use of telemedicine consultations can reduce the number of visits to emergency departments, optimizing patient admissions [16]. The analysis also proves the effectiveness of critical condition monitoring programs using early warning systems, which helps reduce mortality in emergency departments [2].

Psychological support of nursing staff is one of the key and equally important components for providing care for emergency conditions of patients in multidisciplinary hospitals. Psychological burnout is a common problem among medical staff, especially in emergency departments.

Studies emphasize the need to implement psychological support programs, such as flexible work schedules and access to professional psychologists, which reduces stress and increases staff productivity [13].

To determine the frequency of use of different approaches to nursing management in emergencies, a review of 60 publications included in the analysis from the databases was conducted. The main topics were classified into four categories:

- educational programs and trainings: 38% of publications emphasized the importance of simulation training and educational activities.
- resource provision: 25% of the papers analyzed the provision of PPE and staffing.
- innovative technologies: 20% of articles were devoted to the introduction of early warning algorithms, telemedicine and IT solutions.
- psychological support: 17% of studies focused on the prevention of emotional burnout.

The analysis shows that successful nursing management in emergencies depends on a comprehensive approach that includes training, technological innovations, resource provision and psychological support. Implementing recommendations based on evidence-based practice will help improve the quality of care and patient satisfaction.

Conclusions

1. Foreign sources focus on standardization of care in crisis conditions and implementation of technological solutions. At the same time, Ukrainian publications provide localized recommendations adapted to the specifics of medical institutions. This approach allows us to create a multi-level system that combines global trends with local needs.
2. The study analyzed scientific sources from various information systems covering the period from 2014 to 2024. All sources are conditionally divided into national and international. According to the data obtained on the frequency of use of scientific medical articles related to the organization of the nursing approach, the following shares were identified: USA (40%), Europe (35%), Ukraine (15%), Latin America, India, Africa (10%).
3. The results of the review indicate the need to integrate international experience into Ukrainian medicine to improve the effectiveness of nursing management in supercluster hospitals. This analysis forms the basis for further study and development of recommendations for optimizing management processes in nursing.

4. Educational programs are the most effective tool for improving nurses' competence. The analysis shows that curricula and simulation training improve decision-making in critical situations, especially among new nurses. They also reduce the frequency of errors in emergency departments, confirming the importance of regular staff development.
5. Resource provision and technology are the basis of quality management: The availability of personal protective equipment, modern equipment and IT solutions significantly improves the work of nurses.
6. Psychological support reduces the level of emotional burnout: Providing a comfortable working environment and implementing emotional support programs have a positive impact on the productivity and motivation of nurses. This is especially important in emergency departments, where stress is a constant factor.

References

1. Batran, A., Al-Humran, S. M., Malak, M. Z., & Ayed, A. (2022). The Relationship between Nursing Informatics Competency and Clinical Decision-Making among Nurses in West Bank, Palestine. *CIN - Computers Informatics Nursing*, 40(8), 547–553. <https://doi.org/10.1097/CIN.0000000000000890>
2. Bourgault, A. M. (2022). The Nursing Shortage and Work Expectations Are in Critical Condition: Is Anyone Listening? *Critical Care Nurse*, 42(2), 8–11. <https://doi.org/10.4037/CCN2022909>
3. Chen, T. S., Hsieh, P. L., Tung, C. C., Wu, C. H., & Cheng, Y. C. (2023). Evaluation of registered nurses' interprofessional emergency care competence through the gamification of cardiopulmonary resuscitation training: a cross-sectional study. *BMC Medical Education*, 23(1), 1–9. <https://doi.org/10.1186/S12909-023-04332-Y/TABLES/4>
4. Colombo, C. J., Colombo, R. E., Maves, R. C., Branche, A. R., Cohen, S. H., Elie, M. C., George, S. L., Jang, H. J., Kalil, A. C., Lindholm, D. A., Mularski, R. A., Ortiz, J. R., Tapson, V., & Liang, C. J. (2021). Performance Analysis of the National Early Warning Score and Modified Early Warning Score in the Adaptive COVID-19 Treatment Trial Cohort. *Critical Care Explorations*, 3(7), E0474. <https://doi.org/10.1097/CCE.0000000000000474>
5. Fahad, M., Ibrar, M., Qayyum, M. U., & Husnain, A. (2024). Artificial Intelligence in Healthcare: Revealing Novel Approaches to Cancer Treatment, Fraud Investigation, and Petroleum Industry Perspectives. *International Journal of Multidisciplinary Sciences and Arts*, 3(4), 37–45. <https://doi.org/10.47709/IJMDSA.V3I4.4637>
6. Guan, G., Lee, C. M. Y., Begg, S., Crombie, A., & Mnatzaganian, G. (2022). The use of early warning system scores in prehospital and emergency department settings to predict clinical deterioration: A systematic review and meta-analysis. *PLOS ONE*, 17(3), e0265559. <https://doi.org/10.1371/JOURNAL.PONE.0265559>
7. Haleem, A., Javaid, M., Singh, R. P., & Suman, R. (2021). Telemedicine for healthcare: Capabilities, features, barriers, and applications. *Sensors International*, 2, 100117. <https://doi.org/10.1016/J.SINTL.2021.100117>
8. Kleinpell, R. M., Grabenkort, W. R., Kapu, A. N., Constantine, R., & Sicoutris, C. (2019). Nurse Practitioners and Physician Assistants in Acute and Critical Care: A Concise Review of the Literature and Data 2008-2018. *Critical Care Medicine*, 47(10), 1442–1449. <https://doi.org/10.1097/CCM.0000000000003925>

9. Kostakis, I., Smith, G. B., Prytherch, D., Meredith, P., Price, C., Chauhan, A., Mortlock, A., Schmidt, P., Spice, C., Fox, L., Fleming, D., Pilbeam, L., Rowley, M., Poole, H., Briggs, J., & Scott, P. (2021). The performance of the National Early Warning Score and National Early Warning Score 2 in hospitalised patients infected by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). *Resuscitation*, 159, 150–157. <https://doi.org/10.1016/J.RESUSCITATION.2020.10.039>
10. Lawn, S., Roberts, L., Willis, E., Couzner, L., Mohammadi, L., & Goble, E. (2020). The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: A systematic review of qualitative research. *BMC Psychiatry*, 20(1), 1–16. <https://doi.org/10.1186/S12888-020-02752-4/FIGURES/2>
11. Liu, C. F., Hebert, P. L., Douglas, J. H., Neely, E. L., Sulc, C. A., Reddy, A., Sales, A. E., & Wong, E. S. (2020). Outcomes of primary care delivery by nurse practitioners: Utilization, cost, and quality of care. *Health Services Research*, 55(2), 178–189. <https://doi.org/10.1111/1475-6773.13246>
12. Martin-Delgado, J., Viteri, E., Mula, A., Serpa, P., Pacheco, G., Prada, D., de Andrade Lourenção, D. C., Baptista, P. C. P., Ramirez, G., & Mira, J. J. (2020). Availability of personal protective equipment and diagnostic and treatment facilities for healthcare workers involved in COVID-19 care: A cross-sectional study in Brazil, Colombia, and Ecuador. *PLOS ONE*, 15(11), e0242185. <https://doi.org/10.1371/JOURNAL.PONE.0242185>
13. Ralph, J., Freeman, L. A., Ménard, A. D., & Soucie, K. (2022). Practical strategies and the need for psychological support: recommendations from nurses working in hospitals during the COVID-19 pandemic. *Journal of Health Organization and Management*, 36(2), 240–255. <https://doi.org/10.1108/JHOM-02-2021-0051/FULL/XML>
14. Schell, C. O., Khalid, K., Wharton-Smith, A., Oliwa, J., Sawe, H. R., Roy, N., Sanga, A., Marshall, J. C., Rylance, J., Hanson, C., Kayambankadzanja, R. K., Wallis, L. A., Jirwe, M., Baker, T., Asghar, A., Laytin, A. D., Holloway, A. J., El Adib, A. R., Michaelides, A., ... Banda, Z. (2021). Essential Emergency and Critical Care: a consensus among global clinical experts. *BMJ Global Health*, 6(9), e006585. <https://doi.org/10.1136/BMJGH-2021-006585>
15. Tlapa, D., Zepeda-Lugo, C. A., Tortorella, G. L., Baez-Lopez, Y. A., Limon-Romero, J., Alvarado-Iniesta, A., & Rodriguez-Borbon, M. I. (2020). Effects of Lean Healthcare on Patient Flow: A Systematic Review. *Value in Health*, 23(2), 260–273. <https://doi.org/10.1016/J.JVAL.2019.11.002>
16. Parretti, C., Tartaglia, R., La Regina, M., Venneri, F., Sbrana, G., Mandò, M., & Barach, P. (2022). Improved FMEA Methods for Proactive Health Care Risk Assessment of the Effectiveness and Efficiency of COVID-19 Remote Patient Telemonitoring. *American Journal of Medical Quality*, 37(6), 535–544. <https://doi.org/10.1097/JMQ.0000000000000089>

SLAUGYTOJŲ RENGIMO UKRAINOJE SKUBIOSIOS MEDICINOS SRITYJE PROBLEMINIAI KLAUSIMAI LITERATŪROS POŽIŪRIU

A.A. Gudyma,

*Ivan Horbachevsky Ternopil National Medical University of the
Ministry of Health of Ukraine*

O.O. Prokhorenko,

*Ivan Horbachevsky Ternopil National Medical University of the
Ministry of Health of Ukraine*

A.A. Tomkiv,

*Ivan Horbachevsky Ternopil National Medical University of the
Ministry of Health of Ukraine*

Irena Malašauskienė,

St. Ignatius of Loyola College

Rytis Malašauskas,

St. Ignatius of Loyola College

Santrauka

Šiuolaikinė sveikatos priežiūros sistema susiduria su iššūkiais, susijusiais su efektyviu slaugos valdymu superklasterinėse ligoninėse, ypač krizinių situacijų – pandemijų, karinių operacijų ir technologinių pokyčių – kontekste. Tyrimo tikslas – atlikti literatūros apžvalgą apie pacientų skubios pagalbos slaugos valdymo prognozavimą ir tobulinimą, identifikuojant pagrindines tendencijas ir rekomendacijas procesų optimizavimui. Literatūros analizė parodė keturias pagrindines sritis: mokymo programos ir mokymai (38 %), išteklių aprūpinimas (25 %), inovatyvios technologijos (20 %) ir psichologinė parama personalui (17 %). Daugiausia tyrimų atlikta Jungtinėse Amerikos Valstijose (40 %), Europoje (35 %) ir Ukrainoje (15 %). Amerikos ir Europos tyrimai akcentuoja priežiūros standartizavimą ir technologijų diegimą, o Ukrainos tyrimai pritaiko pasaulinę praktiką vietos specifikai. Technologijų, tokių kaip telemedicina, realaus laiko stebėsenos sistemos ir ankstyvojo perspėjimo algoritmai, naudojimas mažina mirtingumą, optimizuoja darbo krūvį ir gerina paslaugų kokybę. Tuo tarpu simuliaciniai mokymai padeda tobulinti slaugytojų sprendimų priėmimo gebėjimus ir mažina klaidų tikimybę. Psichologinė parama yra itin svarbi siekiant išvengti perdegimo ir užtikrinti produktyvumą. Apžvalgos rezultatai rodo, kad veiksmingas slaugos valdymas superklasterinėse ligoninėse priklauso nuo tarptautinės patirties integravimo, technologinių naujovių diegimo, švietimo programų plėtros ir darbuotojų psichologinės gerovės užtikrinimo.

Raktiniai žodžiai: slaugos vadyba, superklasterinės ligoninės, skubi pagalba, švietimo programos, inovatyvios technologijos.