



NEED FOR NURSE SPECIALIST WORKFORCE IN LITHUANIA AND EUROPEAN UNION: CURRENT SITUATION AND FUTURE OUTLOOK

Angelė Lileikienė¹, Justinas Jonušas^{1,2}

¹Lithuania Business College, ²National Cancer Institute

Abstract

The healthcare workforce is one of the most important resources of the healthcare system, directly influencing the accessibility, quality, and long-term sustainability of healthcare services. In recent years, a significant shortage of nurses has been observed in Lithuania as well as in many European Union countries, making this issue increasingly relevant in the context of health policy and organizational management. Demographic changes, population ageing, the growing prevalence of chronic diseases, and rising patient expectations increase the demand for nursing services; however, the pace of nurse education and retention often fails to meet these growing needs. This article analyzes the shortage of nurses in Lithuania and the European Union, aiming to assess the imbalance between the supply and demand of the nursing workforce and its impact on the healthcare system. The analysis is based on a review of national statistical data, European Union indicators, international reports, and administrative assessments from healthcare organizations. The article compares indicators related to the number of nurses, age structure, workload, and migration trends, which allows for the identification of both common and region-specific challenges across different healthcare systems. The findings indicate that the shortage of nurses has a negative impact on the continuity of healthcare service provision, increases staff workload, raises the risk of professional burnout, and may lead to challenges related to service quality and patient safety. In Lithuania, this problem is particularly pronounced in regional areas, where opportunities to attract healthcare personnel are limited and the ageing of the workforce is more evident. At the European Union level, similar trends are observed, although their intensity varies depending on national healthcare system organization and workforce policy measures. The article emphasizes that addressing the shortage of nurses requires a comprehensive approach that integrates strategic workforce planning at the national level with effective organizational management solutions. To ensure the long-term sustainability of the nursing workforce, investments are needed in nurse education, enhancement of professional attractiveness, development of career opportunities, improvement of working conditions, and implementation of staff retention measures. Coordinated, data-driven strategies can contribute to the development of a more stable and efficient healthcare system in Lithuania and the European Union.

KEY WORDS: workforce resources; Lithuania; European Union; staffing shortage management; health care, strategic planning, nurse specialists.
JEL classification: I11; I18

Introduction

The scientific **purpose** of this study is to contribute to the analysis of healthcare workforce planning and management by examining the extent of the nursing shortage and its relationship with the functioning of the healthcare system in Lithuania and the European Union. The study aims to expand scientific knowledge on the imbalance between the supply and demand of nursing personnel and to provide evidence-based insights that may be applied in the development of healthcare policy and organizational management decisions.

The novelty of the study lies in its comprehensive assessment of the nursing shortage through the integration of national data from Lithuania with the broader European Union context. In Lithuania, this issue is further complicated by the low specialist to population ratio, workforce aging and international migration. Effective workforce management and human resource management solutions are turning into a strategic priority for health care institutions.

The goal of this study is to conduct analysis the need for general practice nurses, to identify the reasons for employee shortage and to suggest certain management solutions applicable in Lithuania with respect to the trends prevalent in the European Union. In the European Union, the average nurse to population ratio is 8.4 to 1000. Yet,

this ratio tends to differ a lot among state members and is deemed insufficient with respect to the growing health care needs. The situation in Lithuania is exceptional because its nurse to population ratio is lower than the European Union average and stands at about 7.5-7.9 to 1000. According to the national assessment results, there is a shortage of approx. 3000 nurses in Lithuania at this very moment. If the current tendencies remain the same, this number may grow to 4500-5000 within the upcoming several years. Furthermore, long-term outlook presupposes that the general shortage of general practice nurses, assistant nurses and other health care specialists may exceed 4600 individuals in 2032. In consideration of these circumstances, it is evident that the nurse workforce issue requires consecutive and data-based research. Thus, this study is focused on analyzing the need for specialist nurses in Lithuania and European Union with respect to national statistical data, international comparisons and political analysis insights, aimed at contributing to a more affective workforce management and improvement of health care sustainability. Unlike studies that focus on narrowly defined aspects of the issue, this research examines the nursing shortage not only as a quantitative phenomenon but also as a multifaceted issue related to demographic trends, working conditions, migration processes, and organizational management. This integrated approach enables the identification of both common and context-

specific factors influencing the nursing workforce shortage at different levels.

The study is classified as an **applied descriptive-analytical research**. It aims not only to describe the current situation of the nursing shortage but also to analyze key trends and their potential impact on the healthcare system. The research is oriented toward the practical applicability of its findings and provides a basis for further empirical or intervention-based studies. **The object of the study** is the relationship between the supply and demand of the nursing workforce within the healthcare system in Lithuania and the European Union.

The following methods are applied in the study:

- analysis of scientific literature and strategic policy documents;
- secondary data analysis using national statistical indicators and European Union databases;
- comparative analysis to evaluate nursing shortage trends in Lithuania and other European Union countries;
- logical and systemic analysis for the interpretation and synthesis of the research findings.

Literature Review

In scientific literature, the shortage of nurse specialists is named as one of the most significant challenges faced by modern health care systems in Europe and Lithuania. According to the reports of the Organization for Economic Co-operation and Development (OECD), health care institutions are understaffed due to the growing need for health care services and such structural factors as society aging, workforce aging and limited appeal of health care profession (OECD, 2024). The analysis carried out by European Parliamentary Research Service (EPRS) also notes the unfair distribution of health care specialists among regions and the underdeveloped long-term workforce management systems that impede steady health accessibility (EPRS, 2025).

According to the World Health Organization (WHO), the global shortage of nurse specialists is further affected by international migration, insufficient investments into vocational training and difficult working conditions that lower employee retention (WHO, 2025). In terms of Lithuania, studies and auditor's reports have shown that the nurse to population ratio remains lower than the European Union average and the workforce data collection and long-term management issues further limit effective decision making (Official Statistics Portal (OSP), 2022; National Audit Office of Lithuania, 2023). Outlook assessment allows presuming that the shortage of nurse specialists might only grow within the upcoming ten years due to emigration and the increasing number of older employees in the workforce (OECD, 2025). Many foreign and Lithuanian authors who have examined the training of nursing professionals pay considerable attention to addressing the issues of health tourism. As the economy develops, the demand for health tourism services increases, which in turn creates a need for nursing professionals in this field (Daniel, et al., 2017; Martikonytė, et al., 2020; Langeland, et al., 2022; Lileikienė, et al., 2024; Semutis, et al., 2024).

The results of the empirical research further reveal that a significant portion of nurse specialists are considering requalification or looking for work abroad, which, in turn, signify the importance of systemic employee retention measures and improvement of work conditions (Šablinskas & Stankūnas, 2025). To summarize literature review, one could say that the problem of shortage of nurse specialists requires coordinated solutions focused on long-term workforce stability on both national and European level.

The needs of the labor market and the trends in the choice of studies show that medicine is becoming more popular study programs in the field of science. As attention to individual and public health increases, qualification requirements for healthcare professionals, and especially nurses.

The right profession is of great importance for job offers for every person, simply because it spends a third of his life in it. Therefore, it is necessary to strive for the chosen profession to best meet the needs, inclinations and possibilities. One of the possibilities to ensure the future in terms of work is the right choice of profession, appropriate vocational training and integration into the labor market.

The experience of foreign countries shows that nursing is important for health care component of the system at the global and national level. The observations made show that the need for nursing care will continue to increase, regardless of the ongoing health care reforms. The latter processes are also characteristic of Lithuania. After ceasing to prepare medical paramedics, emergency medical aid specialists can become general practice nurses. Unfortunately, the state order for these specialists has not yet been at the required levels, as well as the need for motivation of general practice nurses.

Research Methods

Secondary data from 2018-2025 year included the Organization for Economic Co-operation and Development, World Health Organization, Official Lithuanian statistics portals and public reports of the National Audit Office of Lithuania were used in the research. Data analysis encompassed descriptive statistics, comparison of national ratios and average European Union ratios, and long-term workforce outlook assessment. The results were presented in tables and diagrams, revealing the nurse to population ratio, migration trends and dynamics of workforce changes. The descriptive cross-sectional study was carried out to better assess the interaction between the supply and demand of general practice nurses in Lithuania and the possible developmental trends of this professional group within the next ten years. The goal of the study was to assess the situation of training general practice nurses in Lithuania, to determine the supply and demand ratio in Vilnius and Klaipėda Regions and to assess the appeal of the nursing study program in the labor market.

The sample was made up of inpatient and outpatient health care institutions (hospitals, multi-specialty clinics, family health centers) located in Vilnius City, Klaipėda City and the corresponding regions. The research data were collected using the Likert scale structured survey

prepared by the authors and distributed to the representatives of the administrative units of health care institutions (senior nurses, nurse administrators, human resource or documentation specialists) who were able to impartially assess the need for nurses at their institution. The surveys were sent to a total of 110 health care institutions. The response rate was 42.7%. A total of 47 respondents took part in the study. The survey was comprised of three sections: assessment of the need for general practice nurses, analysis of the significance of the nurse administrator and general information about the institution. The respondents were duly informed about the goal of the study, voluntary participation, confidentiality and personal data processing for research purposes. The data was collected electronically until November 14, 2025. Participation was voluntary. The survey was submitted along with information on the goal of the study, confidentiality and personal data processing for research purposes. As many as 63.6% of the respondents replied that the shortage of general practice nurses negatively affected patient care quality and safety. Meanwhile, 45.5% of the respondents confirmed that their institutions were understaffed and in need of qualified nurses. They believed that the shortage of nurses would only increase within the next five years. Thus, the available general practice nursing study programs should be steadily improved, as claimed by 42.86% of the respondents. According to the research results, as many as 66.67% of the respondents claimed that they would support the initiative to cooperate with educational institutions and would provide students with nursing internship positions (Fig. 1).

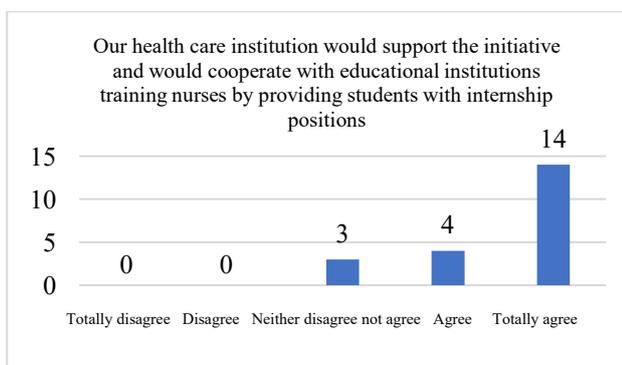


Fig 1. Initiative by health care institutions in providing internship positions to nurses

Source: research results

As of January 1 of the current year, health care institutions have introduced a new position of Nurse Administrator. As many as 61.9% of the respondents expressed their wish to gain managerial/ administrative work experience.

Results

Specialist nurses comprise one of the most important professional groups in the health care system. Patient care quality and continuity of health care services depend directly on their work. According to analyses carried out by international organizations, shortage of nurses is becoming a more relevant challenge in many countries, including Lithuania. The situation is observed on a

national level and reveals structural disbalance in the number of doctors and nurses. Even though the physician to population ratio per 1000 residents in Lithuania exceeds the OECD average (4.5 per 1000 vs. 3.7 per 1000), the number of practicing nurses remains lower than the OECD average (7.9 per 1000 vs. 9.2 per 1000). The ratios of practicing ratios remain lower than the international standards. The research also reveals that the number of general practice nurses trained in Lithuania is also lower than the OECD average (27.4 per 1000 vs. 42.8 per 1000), which limits the possibilities to improve the current and future understaffing. The goal of attaining a balanced ratio of doctors and nurses have long been published in national strategic documents; however, the practical implementation of this matter remains limited due to insufficient number of well-trained specialists.

Based on the STRATA outlook reports, the shortage of general practice nurses, assistant nurses and advanced practice nurses might grow to significant proportions in Lithuania in 2032. The research also confirms that the understaffing might be influenced by several interconnected factors, such as society and workforce aging, high workload, limited professional development possibilities, emigration and bad reputation of the nurse profession. All of these circumstances directly affect health care accessibility, patient waiting time and service quality. According to the research by Rastenienė, et. al (2023), there might be a shortage of 4643 general practice nurses, 2355 assistant nurses and 1328 advanced practice nurses in the near future. More than a third of health care institutions claim to be understaffed when it comes to nurses or assistant nurses. The questionnaire-based survey revealed that the majority of the respondents associated nurse shortage with negative effects on patient care safety and nursing efficiency. Many of the respondents also believed that the nurse shortage would increase in their institutions in the upcoming years. Due to this reason, the respondents highlighted the necessity to expand the offered nursing study programs and to improve cooperation with educational institutions by providing more internship positions to students. The official statistics show that the nurse to population ratio remains lower compared to the European Union average. Internal audits and policy evaluations reveal significant workforce data collection and long-term management deficiencies (OSP, 2022; National Audit Office of Lithuania, 2023) (Table 1).

Table 1. Number of nurses per 10000 residents in Lithuania and European Union (EU, 2022-2024)

Year	Number of specialist nurses in Lithuania	Population of 10000 in Lithuania	Number of specialist nurses in the EU	Population of 10000 in the EU
2022	22 177	78	3.8 million	400-900
2023	21 920	75	3.8 million	400-900
2024*	23 160	80	3.8 million	400-900

*Note: preliminary data of 2024. Source: OSP, Eurostat, OECD, European Commission

OECD profiles suggest that Lithuania might face an increasing nurse shortage resulting from workforce aging and emigration in the next ten years, provided that no measures are taken to deal with this issue (OECD, 2025). Empirical research also confirms that many of the

Lithuanian health care specialists are intending to emigrate or change profession, which only highlights the importance of policy measures aimed at employee retention and improved work conditions (Šablinskas & Stankūnas, 2025). These conclusions also emphasize the need for coordinated national and European strategies to ensure sustainable nursing workforce. Nurse specialists play the main role in ensuring accessible and high-quality health care. However, the significant shortage of health care specialists in Europe threatens the provision of health care services and patient health results. The situation in Lithuania is further aggravated by the low nurse to population ratio, workforce aging and migration. Comprehensive understanding of the current workforce trends, policies and employee retention factors is essential to finding a solution for these challenges. According to research data, Lithuania will experience a shortage of 10000 nurses in 2030-2035. The most recent OECD and EC report titled State of Health in the European Union: Lithuania – Country Health Profile 2025 claims that in 2032, Lithuania will most probably be in need of 8000 nurses.

It is not the big cities and large hospitals that suffer the most due to nurse shortage but rather the regions, where the disbalance is already prevalent due to the increased internal migration of doctors and nurses. This results in low health care accessibility. Approx. 40-50% of the presently employed nurses will end their career in the nursing sector in the next 10-15 years. According to Eurostat, the age group distribution shows that nurses aged 50 and more comprise almost half (~48.9%) of all the nurses in Lithuania. These reasons contribute to health care efficiency. The study of the need of nurses in Klaipėda and Vilnius Regions reveals the current trends (Fig. 2).

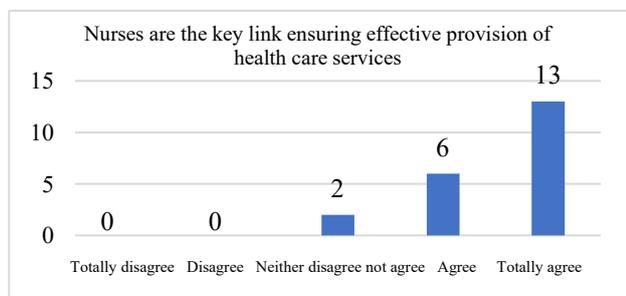


Fig. 2. Nurse efficiency in rendering services to patients
Source: research results

Nurse shortage in Lithuania is closely related to migration processes in the European Union. In 2022-2023, the nurse to population ratio in Lithuania was 7.5–7.8 to 1000. According to Eurostat, the European Union average nurse to population ratio was 8.5-9 as opposed to 12 to 1000 residents in several Northern European countries. This situation reveals that Lithuania is already facing structural nurse shortage which is further complicated by the emigration of specialists to economically stronger member states (e.g., Germany, Ireland or Scandinavian countries). The migration was prompted by salaries higher by 2-3 times, better working conditions and professional development possibilities. The workload of remaining specialists, especially those in regional health care institutions, only increase due to the migration of other

nurses, which, in turn, contributes to employee burnouts and further migration risk. As about a third of Lithuanian nurses are older than 55 years and the society keeps aging rapidly, the migration of nurses is becoming one of the main factors that threaten health care system sustainability long-term (Fig. 3).

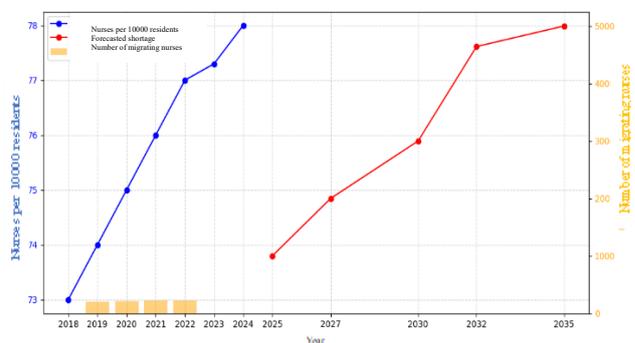


Fig. 3. Lithuanian nurse workforce data: ratio, migration and outlook

Source: Eurostat (2024). Healthcare personnel statistics. European Commission

The research results highlight that strategic HR management and management solutions are essential in all health care institutions. Even with increased training of nurse specialists, long-term workforce sustainability will not be ensured without career planning, motivation measures and workload adjustment. With respect to nurse specialist training, management solutions in health care could encompass investments into better working conditions, development of personnel career opportunities, employee retention strategies and international migration impact management measures. This is important for both Lithuania and other countries facing complex understaffing issues in the health care sector.

Discussion

The received research results allow presuming that the recent gradual increase in nurse to population ratio per 10000 residents in Lithuania might be related to higher study program accessibility and certain health policies. However, this growth is not sufficient to compensate for the forecasted workforce decrease associated with employee aging and changing professions. The forecasts for 2025-2035 reveal that nurse shortage might increase more rapidly than the earlier recorded nurse to population ratio growth, if no additional systematic interventions are made. Thus, an assumption is made that educational measures alone cannot ensure long-term system stability. Complex solutions encompassing salary increase, workload optimization, expansion of career possibilities and prevention of occupational burnouts are becoming the key factors in retaining the nurse specialists. The study reveals important trends in the Lithuanian health care sector. Compared to European Union average ratios, the nurse to population ratio and migration trends are different. Workforce aging, migration and current policy deficiencies remain significant challenges. To ensure sustainable workforce structure, it is recommended to take such measures as investments into the education sector,

efficient employee retention strategies and workforce management improvement.

Conclusions

The study reveals that the nurse shortage in Lithuania is a long-term structural problem, which is closely related to workforce aging, migration processes and insufficient strategic planning. Even though a gradual increase in the number of nurses was recorded from 2018 to 2024, this growth does not compensate for the forecasted workforce shortage in the future. Long-term nursing sector sustainability is dependent on coordinated solutions on the national and European level, which are focused not only on specialist training but also on work condition improvement, occupational burnout prevention and employee retention. The improvement of these measures might help to retain nurses at the institutions, mitigate the losses caused by migration and ensure sustainable health care services in Lithuania. The forecasted increase of nurse shortage in 2025–2035 reveals a structural disbalance between the demand for nurse services and the available human resources. The increasing number of nurses who quit work is becoming a key factor in the future massive nurse shortage, despite the earlier increase in nurse to population ratio. Long-term nursing sector sustainability in Lithuania requires complex health policy solutions focused not only on specialist training but also on improving work conditions, preventing occupational burnout and retaining nurses in employment.

References

- Arango-Morales, A. J., Delgado-Cruz, A., & Tamayo-Salcedo, A. L. (2020). *Digital Competence of Tourism Students: Explanatory Power of Professional Training*. *Health Psychol. Educ.*, *10*(1), 310-326. <https://doi.org/10.3390/ejihpe10010024>
- Bylaitė, A., Jonaitienė, E., & Kalinoviėnė, V. (2022). Turizmo specialisto atėities kompetencijų poreikis darbdavių požiūriu. *Socialiniai tyrimai*, *45*(1), 48-64. <https://doi.org/10.15388/Soctyr.45.1.3>
- Gómez-López, M., Viejo, C., Romera, E. M., & Ortega-Ruiz, R. (2022). Psychological Well-Being and Social Competence During Adolescence: Longitudinal Association Between the Two Phenomena. *Child Indicators Research*, 1-19. <https://doi.org/10.1007/s/2187-021-09899-w>
- Daniel, A. D., Costa, r. a., Pita, M., & Costa, C. (2017). Tourism Education: What About Entrepreneurial Skills? *Journal of Hospitality and Tourism Management*, *30*, 65-72.
- Organization for Economic Co-operation and Development. (2024). *Health at a Glance: Europe 2024*. OECD Publishing.
- Organization for Economic Co-operation and Development. (2025). *Health Workforce Policies in OECD Countries*. OECD Publishing.
- European Parliament Research Service. (2025). *Health Workforce Shortages in the European Union*. European Parliament.
- European Commission. (2025). *State of Health in the EU: Lithuania – Country Health Profile 2025*. Publications Office of the European Union.
- National Audit Office of Lithuania. (2023). *Evaluation of Human Resource Management in Health Care*. National Audit Office of Lithuania.
- Official Statistics Portal. (2022). *Health Care Employees in Lithuania*. <https://osp.stat.gov.lt>
- World Health Organization. (2025). *Global Health Workforce Statistics*. World Health Organization.
- Martinonytė, J., Černiauskienė, A., & Brusokas, A. (2020). Darbuotojų komeptencijų svarba svetingumo ir turizmo sektoriuose. *Mokslo taikomieji tyrimai Lietuvos kolegijose*, *16*, 130-137, ISSN 1822-1068/ eISSN 2335-8904. <http://ojs.kaunokolegija.lt/index.php/mtilk/index>
- Jonušas, J., & al. (2022). *KetoCycle Mobile app for Ketogenic diet: a Retrospective Study of Weight Loss and Engagement*. *BMC Nutrition*.
- Kasprzak, E., & Michalak, M. (2018). Does the social competence of future employees conform with the expectations of employers? *Czasopismo Psychologiczne – Psychological Journal*, *24*, 2, 241-250, DOI: 10.14691/CPPJ.24.2.241
- Langeland, E., Ausland, L. H., Gunnarsdottir, H., Arvekle, S. H., & Vinje, H. F. (2022). *Promoting Salutogenic Capacity in Health Professionals*. *The Handbook of Salutogenesis*, 611-624. doi:10.1007/978-3-030-79515-3_55
- Lileikienė, A., & Martinkienė, J. (2011). Darbuotojų vadybinių kompetencijų taikymo verslo įmonių veikloje. *Vadyba / Journal of Management*, *1*(18), 15-23
- Lileikienė, A., Jonušas, J., Martinkienė, J., & Vaikšnoras, M. (2024). Promoting Innovative Activities Through Advanced management and Fintech Models. *Vadyba / Journal of Management*, *2*(40), 9-19. DOI: [org/10.38104/vadyba.2024.2.01](https://doi.org/10.38104/vadyba.2024.2.01)
- Rastenienė, V., Načiūtė, G., & Orlauskaitė, A. (2023). Nurse Shortage in Health Care Institutions: Reasons and Problems. *Health Sciences*, *33*(7), 141-145. DOI: 10.35988/smhs.2023.290
- Semutis, M., Lileikienė, A., & al. (2024). Conceptual Intelligence Development in Social Services Sector. *Human technology*, *20*(1), 56-24. <http://ht.csr-pub.eu.2024>
- Skrickienė, L. (2017). The structure of the head's management competencies in the subdivision of healthcare institution. *Social Work*, *15*(1), <https://doi.org/10.13165/SD-17-15-1-06>
- Šablinskas, L., & Stankūnas, M. (2025). Health Workforce Attrition in Lithuania: Migration and Career Exit Intentions. *Healthcare*, *13*(19), 2470. <https://doi.org/10.3390/Healthcare13192470>
- STRATA. (2024). *Health Workforce Outlook up to 2035*. Government Strategic Analysis Center.
- Eurostat. (2024). *Healthcare personnel statistics*. European Commission.

RECEIVED: 20 October 2025

ACCEPTED: 23 February 2026

PUBLISHED: 03 March 2026

Prof. dr. Angelė Lileikienė, Doctor of Social Sciences. Author of more than 88 scientific articles published in domestic and foreign scientific research journals, 8 scientific and methodological tools, expert in 6 international projects. Interned in the USA, Norway, Denmark, Portugal, Spain, Romania, Malta, Cyprus, Italy, Germany, Sweden. The direction of scientific research is the sustainability problems of the financial system. Address: Turgaus str. 21, Klaipėda, LT-91249. Email: angele.lileikiene@ltvk.lt, mob. +37065792742. ORCID ID: 0000-0002-8414-5906.

Justinas Jonušas, MSc in Health Sciences and current PhD candidate at Vilnius University. Author of 19 publications in journals indexed in the WoS database. Principal Investigator of 5 biomedical research projects. Scientific research focuses on digital medicine and its applications. Address: Turgaus str. 21, Klaipėda, LT-91249. Email: justinas.jonusas@ltvk.lt ORCID ID: 0000-0002-6457-4383.