Abstract. Healthcare support for Ukrainian refugees in the Czech Republic: a literature review. Shuranova L., Vacková J., Hellerová K., Faltová B., Vistrofn R., Švestková R., Prokešová R. The article focuses on the analysis of "most common methods providing health care to migrants and refugees and on the other hand on the analysis of "most common health problems" of refugees and migrants especially in Europe after the outbreak of war in Ukraine. Stemming from the conflict since 2014, it has triggered the most significant wave of refugees in contemporary history. The method of analysis is a "literature review" created from available sources in Medline, Scopus, PubMed, and Web of Science, focusing on data systematization within the GAJU 101/2022/S project funded by the South Bohemian University in České Budějovice, Czech Republic. The search strategy included keywords such as "Ukrainian migrants, "refugees, "health data," "central registry," "healthcare crisis," and "aid provision," employing logical operators. We examined 41 literary sources from both Czech and international publications, as well as official institution websites. The study identifies the complex interplay between migration and health, revealing diverse needs among migrants and refugees. It emphasizes the necessity of developing effective healthcare policies, particularly in crisis situations. Understanding the implementation of legal provisions for healthcare access is crucial for adapting healthcare systems in Europe. Upholding the principles of the Universal Declaration of Human Rights during information gathering ensures equal access to medical assistance regardless of individuals' status or financial standing. Therefore, further research in this direction should not only deepen our understanding of the migration-health relationship but also translate knowledge into policies for improving healthcare conditions for migrants and refugees in Europe.
At the time of writing, the war in Ukraine is far from over.

Russian military action against Ukraine began in 2014 when Russia annexed the Crimea and continues today, mostly in eastern Ukraine. On February 24, 2022, Russia unjustifiably attacked Ukraine. Millions of Ukrainian citizens left their places of permanent residence and fled to neighboring countries in search of safe living conditions. Located in the eastern part of Europe, Ukraine is the second largest country in Europe, with Russia being the largest. With a population of about 42 million, Ukraine ranks eighth in Europe. Immigrants and wartime refugees, regardless of the particular conflict, often require medical attention upon arrival in host countries. In the Ukraine conflict, these challenges arose suddenly and were of unprecedented scale and dynamics.

According to a recently published WHO World report on the health of refugees and migrants, the number of migrants worldwide is steadily increasing, rising from 153 million in 1990 to 173 million in 2000 and to 281 million in 2020 [1]. In 2020, the growth rate was seen to increase from 2.3% during the five years from 2010 to 2015 to 2.5% from 2015 to 2020 [1].

In 2022, as a result of the Russian attack on Ukraine on February 24, 2022, a record 7.71 million refugees fled Ukraine [2]. In the EU, there are now almost 4.4 million refugees, with 448,000 hosted by the Czech Republic [3]. It is also worth noting that according to the WHO, the number of forcibly displaced people worldwide has exceeded a staggering 100 million [4]. Of all global regions, Europe receives the most significant number of migrants, with approximately 100 million people, according to WHO data. In contrast, the Eastern Mediterranean region receives about 9.6 million refugees and asylum seekers; all these numbers continue to increase [5].

The increase in population due to refugees has a significant impact on the health care system of the host country. Meeting the health care needs of new residents is one of the essential obligations of the host country, with the idea that all people have a right to health and health care. Migration impacts the health of refugees, starting with the reasons that caused the migration, stress, and trauma associated with travel to safe zones, and ending with difficulties linked to establishing a new residence.

The healthcare needs of refugees are not determined solely by the impact of war and fleeing the war. Healthcare needs are all associated with the complete disruption of one's way of life. Therefore, many factors enter into the estimates of the medical care needed by Ukrainian refugees in the Czech Republic.

The research aims to analyze literature from Medline, Scopus, PubMed, and Web of Science, focusing on data systematization within the GAJU 101/2022/S project funded by the South Bohemian University in České Budějovice, Czech Republic. We used a quick search of the Medline database to find and analyze relevant scientific publications that offer essential information from other countries to assist in managing the healthcare needs of Ukrainian citizens who migrated to the Czech Republic due to the war in Ukraine.

MATERIALS AND METHODS OF RESEARCH
We searched several databases (Medline, Scopus, PubMed and Web of Science) for relevant original texts and articles. The search strategy included the words: Ukrainian migrants, refugees, health-related data, central register, health care crisis, and care provision. We used also Medvik to search Czech and Slovak sources. The search strategy included Boolean operator – and. The search period was from 24 Feb. 2022 to 13 Dec. 2022 and included results in English, Czech, or Slovak.

In total, over 40 scientific articles, documents, and information sources were analyzed. The selection of sources was aimed at studying current trends in the standardization of medical data and their implementation in the healthcare system at the international and national levels. The research was conducted in accordance with the principles of bioethics outlined in the Helsinki Declaration on "Ethical Principles for Medical Research Involving Human Subjects" and the "Universal Declaration on Bioethics and Human Rights (UNESCO)."

RESULTS AND DISCUSSION
regulates the issue of refugees in times of armed conflict [6]. The Conventions differ from refugee law, which guarantees protection to these persons at any time. According to the EU Charter of Fundamental Rights, Art. 35 “Protection of health” (2018): “Everyone has the right to access preventive health care and to receive medical care under the conditions established by national laws and customs. A high degree of protection of human health is ensured in the definition and implementation of all policies and activities of the Union” [7].

According to the Office of the United Nations High Commissioner for Refugees [2], refugees and homeless people constitute a separate group because they have left their homes due to severe threats to their lives and freedoms. The UNHCR warns that there is a risk of erasing the border that separates refugees from other groups of migrants who have moved from one country to another for economic or social reasons or to improve their standard of living. Such groups are distinct from refugees who have been forced to flee to save their lives or preserve their freedoms [2].

In March 2010, a conference on migrants’ health was held in Madrid that included the World Health Organization and the International Organization for Migration [5]. The WHO World Report on the health of refugees and migrants [4], for the first time, contains a global description of the health status of refugees and migrants and calls for urgent collective action to ensure access to health services that meet their needs [4].

The legal status of refugees is not one of the core issues in public international law. Still, considering the increase in refugees since 24/02/2022, its topicality cannot be doubted. As a result, concerns related to refugee health, as one of the primary elements related to quality of life have surged.

To respond to the emerging migration and humanitarian crisis, the Czech Republic had to consider the economic situation within the country and the impact on Czech society while, at the same time, working within the larger international decision-making framework.

On March 17, 2022, the Czech Republic signed into law a package of three government bills concerning the armed conflict on the territory of Ukraine and the influx of displaced persons from Ukraine; collectively, the package of bills is referred to in the media as “Lex Ukraine”[8]. Lex Ukraine was aimed at quick registration and integration of refugees. In addition to temporary protection, the rules introduced critical measures related to access to health insurance, the labor market, education, humanitarian aid for refugees, and solidarity allowances for hosts. Lex Ukraine also introduced stricter rules, and it concerns of humanitarian assistance for refugees with free accommodation, food, essential hygiene products, and health insurance for refugees (limited to 150 days), except for children and the elderly. Vulnerable refugees will gradually be included in social safety nets for vulnerable Czechs [9].

From the point of view of legal migration, the Ministry of Internal Affairs of the Czech Republic was responsible for the implementation of temporary stays over 90 days and the permanent residence program. Temporary stays of more than 90 days were divided into two categories: (1) a visa for stays of more than 90 days (long-term access) and (2) a long-term residence permit [9]. According to the Ministry of the Interior of the Czech Republic, a foreigner who has received one of these permits can reside in the territory of the Czech Republic [9].

According to the Ministry of Internal Affairs of the Czech Republic [10], as of June 30, 2022, a total of 1,053,568 persons of foreign nationality are registered on the territory of the Czech Republic, of which 725,236 have a temporary residence permit, and 328,332 have a permanent residence permit. In terms of population, most Ukrainian refugees are in the countries of Central and Eastern Europe. Officially, i.e., purely based on the number of visas issued, the Czech Republic hosts the most refugees (43) per 1,000 inhabitants.

Among foreigners residing legally in the Czech Republic, citizens from undeveloped countries (827,950 persons, i.e., 79%) predominate over citizens of the EU, EEA, and Switzerland (225,618 persons, i.e., 21%) [10]. The substantial increase in the number of foreigners on the territory of the Czech Republic is mainly in the form of temporary protection issued to Ukrainian nationals fleeing the war in their country. By the end of June 2022, a total of 376,310 long-term visas for temporary shelter had been issued by the Czech Republic [10].

To obtain visas and legal stay for foreigners on the territory of the Czech Republic, one of the conditions is insurance. Health insurance for foreigners is a condition for receiving a visa to the Czech Republic. Health insurance protects people financially if they develop health problems. Arranging health insurance for yourself and your family is cost-effective. A law from July 13, 2021, which amends Act No. 326/1999 Coll., so that foreigner’s resident in the Czech Republic from August 2, 2021, and after, require health insurance from the VZP Insurance Company [11].
Data from VZP shows that 340,000 persons were registered as of 6/27/2022, of which 37% were children under 18 and 46% were women over 18. There are 203,000 people of working age (18–64 years), of which 20% are employed UA citizens, i.e., health insurance is paid for by their employer. These statistics data only include those UA citizens who obtained visas for tolerance or temporary protection in the Czech Republic after 2/24/2022 and were registered with VZP [12]. VZP estimates the costs of health care for Ukrainian citizens who received temporary protection from the Czech Republic in connection with the war in Ukraine at 3.9 billion of Czech crowns (1 USD ≈ 24 Czech crowns (Koruna)) [12].

The healthcare needs of refugees are not determined solely by the impact of war and flight. Determinants affecting the life path of refugees also play a role. Therefore, we considered the relevance of medical care to Ukrainian refugees in other countries and examples of good practice. A search in databases and analysis of relevant scientific publications can be an essential source of information for the Czech Republic when developing policies related to the migration of Ukrainian citizens.

In their article, Lewtak et al. [13] described issues related to the health of Ukrainian citizens. The authors’ study aimed to identify the main health problems among hospitalization of Ukrainian citizens living in Poland from 2014 to June 2022. The authors’ analysis was based on data from the hospitalization of Ukrainian patients in Poland taken from a nationwide survey of morbidity in general hospitals. The authors reviewed 8,591 hospitalization records. It should be noted that, in Poland, after the official start of the Ukrainian war, 2,231 Ukrainian citizens were hospitalized [13]. The most often reported reasons for hospitalization of adult women were diseases related to pregnancy, childbirth, and the postpartum period.

In contrast, hospitalization of adult men was most often associated with injuries and poisoning. Childhood and adolescent hospitalization was mainly related to infectious and parasitic infections. The authors’ research highlighted the short-sighted policies, which failed to consider severe, complex, and chronic diseases. The authors concluded that there is an urgent need to combine short-term emergency healthcare with medium- and long-term healthcare to integrate migrant populations into mainstream European health systems and to ensure uninterrupted access to prescribed medicines. The conclusions of the authors should be helpful in developing health care policy and the provision of services to newly arrived migrants and refugees.

A study by Jaeger et al. [14] focused on guideline development between March and April 2022 in a modified Delphi process in Switzerland. The study examines current evidence and guidance on the care of refugee children from Ukraine. While the recommendations were developed for Switzerland, they may be transferable to other countries. The recommendations are based on current data and may need to be adapted to individual situations as more evidence becomes available.

Maternik et al. [15] studied healthcare for children who needed kidney replacement therapy (KRT). This is a highly vulnerable group among war refugees. Their complex medical needs require prioritization from the very beginning of humanitarian evacuation processes, with prompt access to qualified medical centers in host countries. According to the authors, the safe and timely transfer of KRT children from combat zones requires enormous organizational efforts involving local medical and paramedical personnel from originating and host countries at regional and national levels. These efforts may also involve charitable organizations and individual volunteers. According to the authors’ findings, a collaborative network of pediatric nephrologists working through national and regional organizations such as the European Society for Pediatric Nephrology (ESPN) is paramount to coordinating such complex efforts, which, despite huge logistic problems, can be successful even in the relatively short time frames associated with an unpredictable refugee crisis.

Vasilyev et al. [16] touched on an urgent problem regarding medical care for HIV patients – doctors in Europe working with refugees may have little experience in providing care for HIV infection under crisis circumstances. According to the authors, there is an urgent need for guidance in solving specific challenges for people living with HIV, both for those who remain in Ukraine and those who migrate. The authors are working to establish a unified support structure to reduce the inevitable impact on the HIV treatment cascade.

Piotrowicz and her colleagues [17] reported on (as of May 19, 2022) 109,985 older adults (91,349 Ukrainian women over the age of 55 and 18,636 men over the age of 60) who applied for asylum in Poland. The authors estimated that the total number of elderly Ukrainian refugees was about 625,000. The authors also estimated that these elderly refugees have an average of 2.5 comorbidities per person, the most common being cardiovascular, respiratory, musculoskeletal, and genitourinary diseases. According to the authors’ calculations, and in descending order, the absolute number of diagnoses is as follows: pulmonary disorders (71,689), cardiovascular (49,327), eye (24,100), musculoskeletal (20,367), and genitourinary (16,836)
diseases. The estimated number of new tuberculosis cases is 4,578, and cancer cases are 7,827. Piotrowicz et al. [17] noted that the data indicate a significant disease burden on elderly Ukrainian refugees. Although the estimates are only rough ones in the authors’ opinion, they provide a basis for predicting which areas of health care in host countries will need the most financial and logistical strengthening to cope with the potential impact of refugees.

Calam et al. [18], in their article, paid great attention to the children of Ukraine and other victims of the military conflict. Based on the authors' article, resources available through the United Nations Office on Drugs and Crime offer previous experiences to aid in building a pyramid of interlinked, evidence-based, trauma-informed interventions. These interventions were developed in collaboration with families and practitioners experiencing life through the contexts of military conflict, displacement, and resettlement.

Vuorio et al. [19] write that Europe is facing a massive refugee crisis, and the conflict could potentially worsen the still ongoing COVID-19 pandemic. According to the authors, the two countries of greatest concern are Poland, which hosts the majority of refugees, and Moldova, which hosts a very high number of refugees per capita. Based on the authors' article, similar concerns extend to the rest of Europe due to the mobility of refugees to travel beyond the borders of the first host country. The authors emphasize that vaccination, infection control, and support for refugees should be prioritized.

Malchrzak et al. [20] looked at the problem associated with the low levels of vaccination against COVID-19 in Ukraine and only slightly higher levels in Poland [20], which hinders the ability to effectively control the epidemic. In the authors' opinion, efforts to popularize vaccination among refugees, which is often no longer free, seem insufficient to convince the majority of refugees to get vaccinated [20].

Greenaway et al. [21] write that now more than ever, and with Canada’s health care system overburdened, protecting refugees and other migrants, promoting their self-reliance and health requires a coordinated multi-stakeholder approach, i.e., a partnership between policymakers, health administrators, and physicians, between practitioners and communities, and the building of responsive health systems in host communities. It should be noted that the authors agree that Canada must commit to strengthening its healthcare systems to support the needs of refugees and other migrant groups and to maintain equity in healthcare for all who live in Canada.

Using an online survey, the Euroguidelines in Central and Eastern Europe (ECEE) Network Group explored early assistance for war refugees who migrated from Ukraine to Central and Eastern Europe (CEE) [22]. It should be noted that, according to the authors, fourteen countries that accepted refugees from the war in Ukraine on March 31, 2022, completed the survey. The majority of centers (86%) arranged to provide antiretroviral therapy (ART) on the same day and for at least 30 days (77%) but indicated that this could affect local HIV care. Importantly, CEE countries have implemented effective emergency mechanisms, which must be continued with international support [22].

Guzik et al. [23] note that assessment of the cardiovascular status of refugees, especially adults and elderly patients, seems to be the key to help them avoid serious complications such as myocardial infarction or stroke. It should be noted that chronic non-infectious diseases are the most significant factor relative to diseases among adult Ukrainians. Guzik et al. [23] noted that disease-specific prioritization and prioritization of health care in humanitarian settings is a crucial component of noncommunicable disease (NCD) care. Guzik et al. [23] conclude that evidence-based medical needs assessment, combined with appropriate advocacy, is essential to disease visibility and resource allocation. They further emphasize the need to introduce a syndrome surveillance system, adapting it to assess healthcare needs in addition to surveilling for epidemic-prone diseases, including NCDs and mental health problems [23].

Hodes et al. [24] wrote that given the number of people who may need help and various resource constraints, multi-level systems of care are needed that can train Child and Adolescent Mental Health Services (CAMHS) practitioners as well as practitioners in related fields such as social work and psychology, especially those with trauma-focused experience.

There is a critical need to strengthen vaccination, ensuring protection against COVID-19, containment of polio and measles outbreaks, and adequate age-specific vaccination coverage [25]. The need to guarantee adequate efforts to ensure continuity of treatment for NCDs and chronic infectious diseases (including HIV and tuberculosis) requires rapid and appropriate procedures for procurement and distribution of medicines and supplies in all EU member states.

The need to protect mental health through appropriate linguistic and cultural mediation and the promotion of refugee family reunification remains a pressing issue today, especially as the need for psychiatric care is expected to grow for those with immediate war-related trauma, as well as for those with post-war trauma [25]. Marchese et al. [25] recommend a European medical information system for Ukrainian refugees that would facilitate the treatment of chronic diseases. The authors did not
overlook personal data protection, and seamless cross-border service can be ensured by implementing digital tools, such as the one proposed for the EU “digital green certificate” for COVID, where people choose to share their personal information on a case-by-case basis [26]. The right to fair and just health care must always be guaranteed and protected, especially among the vulnerable and during emergencies such as the Ukraine crisis [27].

Rzymski et al. [28] emphasized the need to vaccinate refugees, as well as improve or maintain adequate levels of immunization within the host population.

Given the number of people leaving the war zone in Ukraine and arriving in France, the article by Vignier et al. [29] made several recommendations to the French High Council of Public Health (HCSP). They noted the need to ensure coordination and access to information throughout the country by providing medical and social support (i.e., discovery of social rights and access to assistance). Finally, they emphasized the need for management vigilance, preservation of social rights, and continuity of care after initial contact, as well as arranging meetings with refugees within four months after the migrant enters the country to ensure continuity of care [29].

Timely and appropriate medical care for Ukrainian refugees in all European host countries should also take into account the pre-war aspects of refugee healthcare in Ukraine and prioritize actions to address untreated medical needs and then ensure continuity of care within the host country [30].

Fatyg et al. [31] stated that every Ukrainian citizen in Poland enjoys free inpatient care, specialized treatment, dental services, diagnostic tests, and outpatient treatment or first aid from family doctors. These services are paid for by the Polish healthcare payer – the National Health Fund. The authors expect the situation to remain very dynamic, and the range of needs will change over time [31].

An article by Beauté et al. [32] concluded that quality public health surveillance is essential, and the large number of displaced people from Ukraine fol-

lowing the Russian invasion poses several challenges for surveillance systems in EU/EEA countries. According to the authors, integrating this refugee population into the general community and regular surveillance systems capable of monitoring disease is key to effective disease prevention and control. Based on the authors’ article, from a surveillance perspective, collecting information on migration status will become increasingly important for identifying specific risks for displaced persons from Ukraine who settled in the EU/EEA. A combination of the country of origin and date of entry is probably the best option for data analysis. It would avoid the possible stigma associated with the wording "migrant" or "refugee" while allowing specific public health interventions [32].

Su et al. [33] explored the challenges faced by healthcare representatives and government officials in meeting the healthcare needs and preferences of refugees. The main point the authors emphasize is the need to provide timely and effective health services to refugees, such as psychoneuroimmunology-based interventions, which can help meet the multifactorial and multifaceted needs and health needs of refugees.

Jain et al. [34] emphasize that host countries have been highly supportive of incoming refugees and have put several short-term and immediate measures in place to support refugees; however, long-term efforts to integrate refugees into local communities remain a critical challenge.

Graph shows that the authors reviewed in our study consider vaccination (and not just COVID-19) to be one of the most important health measures for refugees. From the authors’ point of view, collective or comprehensive care provided to everyone is just as important. Two frequently mentioned factors were (1) limited free health insurance and social care and (2) trauma-focused care. Our review of the literature regarding healthcare for migrants and refugees, especially at a time of crisis, leads us to stress the importance of timely and comprehensive care for immediate and chronic health issues and attention to vaccinations as part of long-term and sustainable healthcare.

The most common health problems of refugees cited in the reviewed sources

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<tr>
<th>Adult men</th>
<th>Adult women</th>
<th>Children and adolescents</th>
<th>All groups</th>
</tr>
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<tr>
<td>Injuries</td>
<td>Diseases related to pregnancy</td>
<td>Infections</td>
<td>Stress</td>
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<tr>
<td>Poisoning</td>
<td>Childbirth</td>
<td>Parasitic infections</td>
<td>HIV</td>
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<td>Consequences of external causes</td>
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<td>Chronic non-infectious diseases</td>
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Dziedzic et al. [35] state that investing in a European health data registry is crucial for minimizing healthcare disparities and enhancing epidemiological conditions during mass relocations. They emphasize the necessity of collective action from commissioners, policymakers, and stakeholders to guarantee access to health services for vulnerable populations amidst the ongoing global migration crisis [35].

Scott et al. [36] highlighted the necessity for additional education regarding healthcare rights in the UK. They emphasized the importance of providing guidance on navigating local healthcare systems, ensuring consistent access to routine health checks, and offering translation services for individuals [36].

In addition, it is necessary to highlight the conclusions reached by the author's team Van Hemelrijck et al. [37] regarding the differences in oncological and palliative care legislation among countries, complicating access to necessary services. Ukraine and Europe are facing a humanitarian crisis related to oncology and non-communicable diseases, impacting healthcare systems [37]. It is also pertinent to mention the challenges in cancer treatment in Poland, such as the lack of diagnostic testing and practice differences [38]. The authors noted that language barriers and low vaccination rates among Ukrainian refugees are additional challenges. Addressing these issues requires collaboration with health agencies and financial support [38].

At the same time, it is crucial to emphasize that understanding the needs of refugee children underscores the importance of investing in their future through humanitarian aid and psychosocial intervention [39]. The professionalization of these efforts should consider subjective needs and cultural diversity to reduce suffering and support well-being [39].

Attention should also be directed to refugees who have experienced trauma and stress, as significant psychiatric support becomes necessary to prevent post-traumatic disorders and depression. As Javanbakht [40] pointed out, there are challenges in accessing this assistance due to stigma, limited resources, and insufficient awareness. To overcome these difficulties, the introduction of initial psychiatric assistance upon arrival, educational programs for refugees and their service providers, as well as
enhancing the qualifications of medical professionals and providing remote services for effective treatment and psychological counseling, is proposed [40].

The conclusion of the article by Cojocaru et al. [41] is very useful: to meet the medical needs of refugees, it is necessary to adapt healthcare systems. Special attention should be given to cultural and language differences, covering costs for new requirements, training healthcare professionals on diseases in the refugees' home countries, and determining the medical needs of migrants [41].

**CONCLUSION**

1. There is a dynamic and complex relationship between migration and health. Migration can result in increased exposure to health risks. This applies to migrants engaged in precarious employment with restricted access to affordable healthcare. Conversely, migration can also be linked to improved health, such as when individuals move from cities marked by hostility, fear of violence, or aggression to a safer environment. Understanding the vulnerability of health and livelihoods is of fundamental importance to issues of migration and health care. Migrants and refugees are not homogeneous groups, nor are their needs, health vulnerabilities, and resilience. Additionally, gender-related health issues are important and deserve careful consideration.

2. Scientific research underscores the imperative of a profound understanding of the interplay between migration and health, increasingly crucial in the face of contemporary global challenges. The comprehensive examination of health risks confronting migrants in conditions of uncertainty and limited access to medical services informs the strategies shaping policies and healthcare systems. The findings of our research, along with other scholarly contributions, highlight the need for inclusive, sustainable, and equitable healthcare delivery strategies for migrants and refugees.

3. Further analysis and implementation of acquired knowledge into medical and policy practices will enable the adaptation of healthcare systems in Europe, ensuring quality, long-term, and resilient assistance for all, regardless of their status or financial standing. Incorporating the principles of the Universal Declaration of Human Rights during information gathering is a critical aspect of ensuring equal access to medical care. Thus, our conclusion emphasizes the necessity for continued research and the practical application of knowledge to enhance the conditions of healthcare for migrants and refugees, aligning with established ethical and human rights standards.

**Contributors:**

Shuranova L. – conceptualization, investigation, writing – original draft, visualization;

Vacková J. – project administration, supervision, writing – review & editing;

Hellerová K. – project administration, writing – review & editing;


**Funding.** Funding was based on complete financial support from the Grant agency of the University of Jihočeské Budějovice (project number GAJU 101/2022/S, duration 1.2.2022 to 31.12.2025).

**Conflict of interests.** The authors declare no conflict of interest.

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Стаття надійшла до редакції 21.11.2023; затверджена до публікації 30.01.2024