

HOMELESS POPULATION IN POST-COVID-19 PERIOD COMPARING V4 COUNTRIES

*LIBUŠA RADKOVÁ, MARIANA HAMAROVÁ,
PAVOL BEŇO, SZILVIA BUZALOVÁ*

DOI: <https://doi.org/10.59505/IRHNS.22352007.2023.3.07>

Abstract:

Empirical surveys of the number of homeless people or people at risk of homelessness are carried out by several developed countries, for example in most OECD countries. It is thus possible to get some idea of the extent of this type of social exclusion and its variability between countries. According to population estimates in 2021, 5,449,270 inhabitants lived in the Slovak Republic at the beginning of the year. Of the total population, 48.9% were men and 51.1% were women. Slightly more inhabitants, up to 53.2%, lived in cities than in the countryside (46.8%). Currently, children and youth up to 14 years of age (inclusive), i.e. residents of pre-productive age, made up 15.9% of the population. At the same time, the population in productive age (from 15 to 64 years) represented 67% of the Slovak population, and seniors in post-productive age (65 and over) made up 17.1% of the Slovak population. The homeless currently make up 21% of the population in 2022. People experiencing homelessness are at high risk for coronavirus disease 2019 (COVID-19), but our research results did not confirm that homeless people died more often than rest risk-groups and also there was no need to close shelters due to pandemic situation, there was higher demand for social services.

Keywords: Homeless people. Post-covid-19 era. Social work. Health care.

Introduction

Determining the size of the homeless population and its structure is an important prerequisite for the creation of adequate public-political interventions in the area of homelessness prevention and in other areas of housing and social policy. However, information about its size and structure is often very limited, and their validity and reliability are often problematic. The population of homeless people is thus a typical example of a “hidden population” from the point of view of social research. Obtaining information about homeless people is made difficult both by the very nature of the social exclusion they have to face and by ongoing difficulties with its formal definition.

The OECD, whose data we use in this section, understands homelessness as various forms of housing instability and exclusion from housing, while the population of homeless people includes, for example, persons who lack access to any housing, as well as persons whose housing conditions are not adequate and/ or sustainable (*ibid.*). Such a definition, on the one hand, corresponds to the multidimensional nature of homelessness, and on the other hand, covers the variability of approaches in individual countries. Data based on a broader definition of homelessness is collected in countries such as Australia, Norway or Sweden, where the definition of the homeless population also covers people living in precarious housing, overcrowded housing or very poor-quality housing. Specifically, the data for Australia refer to persons in inadequate and precarious housing conditions and to persons without access to a space that would allow the development of social relationships. In Norway, homeless people also include persons who live temporarily with acquaintances or relatives. In addition to people sleeping rough and using relevant services, Sweden also takes into account people living in dwellings on the secondary housing market (OECD, 2015: 117). In other countries, for census purposes, homeless people include people who do not have a roof over their heads and live on the street (sleeping roughly) and persons using services for homeless people, including shelters and other facilities.

The typology allows authorities to indicate which categories are used in the statistical definition of homelessness in their country; not all countries will characterise individuals in each of the categories below as “homeless”. The “ETHOS Light” typology proposes to categorise homeless populations as follows:

1. People living rough: Living in the streets or public spaces without a shelter that can be defined as living quarters (e.g. public spaces/external spaces)
2. People in emergency accommodation: People with no place of usual residence who move frequently between various types of accommodation (e.g. overnight shelters)

3. People living in accommodation for the homeless: People living in accommodations for the homeless, where the period of stay is time-limited and no long-term housing is provided (e.g. homeless hostels, temporary accommodation, transitional supported accommodation, women's shelter or refuge accommodation)
4. People living in institutions: People who stay longer than needed in health institutions needed due to lack of housing; and people in penal institutions with no housing available prior to release
5. People living in non-conventional dwellings due to lack of housing: where accommodation is used due to a lack of housing and is not the person's usual place of residence (e.g. mobile homes, non-conventional buildings or temporary structures)
6. People living temporarily in conventional housing with family and friends due to lack of housing.¹

According to OECD estimates, homelessness affects between 1 and 8 people out of every 1,000 people of working age in OECD countries. At the same time, an estimated one-third of homeless people live on the streets (OECD 2015: 112).

Comparison of the perception of the typology of homelessness between the V4 countries according to OECD (2015):

¹ FEANTSA, 2018, www.feantsa.org/download/fea-002-18-update-ethos-light-0032417441788687419154.pdf

Country	Definition	2011 ²	2021
Slovakia ³	People in dormitories, shelters, living without shelter, in social facilities for homeless people	23 483	
Poland	People sleeping in dormitories and in facilities for homeless people intended for short-term accommodation, persons to whom accommodation is provided.	30 330	33 450
Hungary	People living on the street or in dormitories.	20 500- 50 000 ⁴	3500- 5100
Czech Republic	The number of homeless people in Prague who live on the street, in hostels, including people in prisons and hospitals who have nowhere to live. The total number of homeless people in this category ⁵	5 300 85 000 ⁶	25 830 ⁷ 228 000

In addition to estimates referring to a specific time period, it is also possible to identify development trends in the case of some countries. And these trends are not homogeneous. The financial crisis appears to be an important determinant of differences in national trajectories. While in some countries (Korea, England) the onset and course of the financial crisis corresponded with a significant increase in homelessness, in others (Japan, USA) it decreased (OECD 2015: 119). Among the factors that explain the different trajectories, the authors recommend the form of public service provision.

- The rise and fall of homelessness is determined by societal factors and global
- 2 shows the classification of homeless people according to two criteria: according to the region in which they were enumerated and according to the region where they have permanent residence. Such a classification makes it possible to estimate whether and to what extent there is migration of homeless people within the regions of the Slovak Republic. The data confirm the assumption that the largest number of homeless people with a permanent residence different from the region where they were enumerated were in the Bratislava region.
 - 3 Actions to address homelessness are underpinned by the National Framework Strategy for Promoting Social Inclusion and Combating Poverty.
 - 4 There is no reported homelessness strategy at regional/local level
 - 5 According to a survey by the Research Institute of Labor and Social Affairs, there were approximately 23,830 homeless people in the Czech Republic in 2019. The Salvation Army, a non-profit organization, estimates that there are between 50,000 and 70,000 people sleeping on the streets or in shelters and social facilities.
 - 6 Including people living on the street .
 - 7 Comparison of OECD statistic based on the FEANTSA typology of homeless people and general statistic of the national research institution including the data of homeless people who live in the street and stay in social facilities. here are no regional homelessness strategies, but some municipalities have their own strategies to tackle homelessness (e.g. the city of Prague).

indicators that have an impact not only on people's quality of life, but also on GDP research:

- Financial and economic crisis
- Lack of financial and personnel resources to cover public services
- Limitation of the provision of volunteer work due to the coronavirus pandemic
- Low range of services intended for homeless people
- Low social status of working with homeless people
- Income below the poverty line
- and trade-off between macro-economic financial stability and social-inclusion objectives in the by making it more difficult to keep households with low savings to purchase a home

The definition of homelessness was based on the document Conference of European Statisticians Recommendations for the 2010 Censuses of Population and Housing (UNECE, 2006), which laid the foundations for overcoming the variability of meanings attached to the term "homelessness". For the purposes of the census, it is recommended to distinguish between two categories (two degrees) of homelessness:

§ **Primary homelessness**, which includes persons living on the streets without a roof over their heads.

§ **Secondary homelessness**, which includes persons without a place of usual residence, who often move between different types of housing (including, for example, hostels, facilities for homeless people).

The Statistical Office of the Slovak Republic used the concept of secondary homelessness in the 2011 census of the population of houses and flats. These were persons counted in dwellings outside the housing stock, in mass accommodation facilities for temporary accommodation (dormitory, halfway house, shelter, dormitory for homeless people, facilities for homeless people), without shelter and in a fictitious house (Ivančíková – Škápik, 2015: 38).

The term fictitious house was used when a person did not live in an apartment or house. The reason for this was the fact that formally every resident must be counted in an apartment and an apartment in a house. Applying such an approach, 23,483 inhabitants of the Slovak Republic were identified as homeless, most of them (61%) were men. Expressed in absolute numbers, the most homeless people lived in the Trenčín Region (6,638 persons), the least in the Žilina Region (580 persons). It is interesting that the Bratislava Region was, in absolute terms, the region with the third lowest number of homeless people (2,396 people). (In Gerbery, D. 2015).

Homelessness and covid-19 pandemic

In a modelling study of COVID-19 management strategies for people experiencing homelessness, we found that routine symptom screening followed by immediate testing of those with symptoms is a cost-effective approach to reducing COVID-19 infections and related health-care costs in this population. Study found that provision of temporary housing was by far the most effective strategy for mitigating COVID-19 in sheltered homeless populations, although it was also the costliest (Baggett et al., 2020).

Unemployment rates of 15–29-year-old increased in nearly all OECD countries, with the weighted OECD average exceeding 14% at the peak of the COVID-19 crisis in the second quarter of 2020. About half of the 18–29-year-old who responded to the OECD Risks That Matter 2020 survey reported that either they or a household member have experienced job-related disruptions since the start of the COVID-19 pandemic in the form of a job loss, the use of a job retention scheme, a reduction in working hours, or a pay cut (OECD, 2021).

Furthermore, standard COVID-19 prevention guidelines, such as practicing social distancing, maintaining regular personal hygiene, and mask wearing can be difficult in congregate settings, placing homeless shelter guests, staff, and everyone they interact with at increased risk of infection.

Research

Aims and methods

The data collection was done after the first wave of the COVID-19 pandemic including workers at shelters, social services facilities for the homeless people and street workers providing services on the street in Bratislava, the capital city. The sample was consisted of 36 social workers and street workers working the different organisations which participated in the extended housing of the chronically homeless, emergency shelters for acute care, specialized homelessness services, housing support programs, assistance program on the street, food banks, soup kitchens, mental support and healthcare, and other social service provided and needed during the pandemic.

Aim of the research was to figure out the changes in providing services for the

homeless people and map the situation during the pandemic to find out negative and positive aspects of the COVID-19 pandemic.

Interviews were recorded and transcribed using Otter.ai, a digital scribing platform. Transcribed interviews were reviewed and edited for accuracy. Each interview was coded by multiple coders and subsequently discussed as a group to ensure intercoder consistency. Utilizing a combinatorial approach of deductive and inductive coding, data was thematically analysed by qualitative coding software.

Research questions:

Q: How did COVID-19 change the services typically provided for homeless people?

Q: Did COVID-19 change the services for the long-term care of clients in context to policy?

Q: Did your daily interactions and communication change as a result of the COVID-19 pandemic?

Results

The covid-19 pandemic made an impact on the life of homeless and daily social services provided by the organisations and workers in social services and street work as well. The COVID-19 pandemic has hit the lives of people around the world. The spread of SARSCoV-2 and subsequent diseases have had enormous health, but also social, psychological, economic and environmental consequences (Buzalová, Radková, Ludvigh Cintulová, 2021).

In regards to COVID-safety measures, staff members described how difficult it was for clients' to engage in basic hygiene practices like handwashing due to lack of access to showers and washrooms, "those living unsheltered really needed access to like hygiene stations because a lot of ... businesses and places that [homeless] people normally go ... were not available during the pandemic." Homeless people stop to stand in front of shopping centres as usually as the pandemic measures do not allow it.

Q1: How did COVID-19 change the services typically provided for homeless people?

Dimensions	Category	Codes
Individual level	Pre-existing health problems	Many pre-existing problems stays ithout care and long-term health services
	Decreased mental health	Clients were in stress and lack of attention reductions in access to substance addiction treatment services and counselling and how these circumstances negatively impact their clients' mental health
	Low access to basic services and street places, hygienic services	Negative impact of prolonged shutdown periods of services for homeless people Lack of places to stay and to use hygienic suppliers
	Limited living in close proximity to others and social distance	Social isolation, fear about death and hard symptoms due to covid-19 disease no many places for people to be and feel safe, be and feel comfortable
	Lack of financial donations	Home-office and less people willing to donate homeless services on the street Fear of people who used to give donation Lack of information and increased hoaxes

Also, the organisation providing social services and assistance for homeless people had to face different situations and obstacles related to covid-19 pandemic. The summarized them into the table below. The most clients felt their organisations were able to quickly respond, leaning on local partners and state guidance to adapt procedures and implement additional precautions in order to stay open and continue to services for the homeless community. On the other hand, they struggle with staff and volunteers' shortages and no enough money to cover all restrictions to be followed.

Q2: How did COVID-19 change the services for homeless people at organisation level?

Dimensions	Category	Codes
Organisational level	Increased demand for services	Many clients stay without help from the state and community and they start to search for the services more to get health and social care.
	Staff and volunteers shortages	The long-term problem of the lack of staff and volunteers in the social services started to be more alarmed.
	Struggling with the costs linked to the hygienic measures and services	No extra money, lack of financial management, lack of donations and state supply
	Financial and supply donation	Provided at the minimum level, NGO has to look for extra financial sources
	Disrupted services	Lack of services, only basic services provided, limited services in shelters
	Staff reshuffling	New staff strategy provided and risk management
	Limited public health care	Many operation, prevention and health care services were postponed
	Restrictions, pandemic measures, social distancing	Negative impact on the quality of social and health services for homeless people Hard to discipline everyone
	Integration collaboration	Networking, facilitation, mediation and collaboration of workers in multidimensional level
	Screening, Testing and vaccination	Good practices services to prevent spread of covid-19, limitation of risks of covid-19 in community Limited options for screening and testing

Staff described initial confusion and uncertainty around how best to implement COVID-19 safety measures in crowded homeless shelters. Some organizations implemented an initial shutdown where they did not let anyone new into the shelter for a period of time. Other organisations suspended services, which created challenges to reaching and staying connected to clients. They provided only the basic services, space to sleep and eat and the most of the services were focused on the screening, testing and vaccination against Covid-19.

The research results have shown that the most of basic services for the homeless people during the pandemic were oriented on the basic level of Maslow's needs, not focusing on the mental health or the self-development and self-realisation of the clients. Some therapy with clients were postpone and social workers couldn't do much for case management as they used to do. We didn't do anything special for some clients to increase their quality of life, the first was to do prevention and provided basic services at pandemic crisis. Organizational staff began to offer COVID-related communications including information related to new procedures and expectations for homeless clients through face-to-face group announcements in the shelter. New safety procedures and reminders were implemented to promote physical distancing in the shelter.

Organisations also experienced unexpected expenses associated with having to purchase COVID protection equipment and supplies for staff and clients. These financial strains were made worse as organisations attempted to adapt their services for the long-term period at the pandemic.

Q3: Did COVID-19 change the services for the long-term care of clients in context to policy?

The sample figured out changes in the field of policy that made the huge impact on the providing services for homeless people. There were many expressed frustrations over a lack of federal guidance, especially in the early days of the pandemic, lack of clear guideline about the pandemic, strategies, supply and financial tasks, many different information on the local government web pages, trying to reach out to those resources and to understand and implement them. We summarize the codes from the data collection in the table below.

Dimensions	Category	Codes
Policy and community level	Restrictions, anti-pandemic measures, guidance	separated from their social group led many to reject quarantine practices
	Social and community services	It's hard to enforce that with people living outside when they didn't even have access to places to wash their hands, or use the restroom ... limited options for services
	Financial and supply	The most of the community-based organizations' funding for pandemic response was from local sources
	Regional safe policy	Inter-region communication has increased dramatically to collaborate to implement safe strategies and services provision
	Community strategies	Many of the emergency measures put in place by homeless service providers created opportunities for innovative solutions to longstanding challenges faced by homeless populations that can inform better service delivery moving forward

We could identify two basic attitudes to interaction and communication connected to the covid-19 pandemic, the positive attitude might help to follow restrictions and anti-pandemic measures. On the other hand, passive attitudes were connected with the misunderstanding, rejection and separation.

Q4: Did your daily interactions and communication change as a result of the COVID-19 pandemic?

Dimensions	Category	Codes
Interaction and communication	Active attitude of homeless people	Cooperation with screening, testing and vaccination Open communication and collaboration at regional level and at community-based services
Interaction and communication	Passive attitude of homeless people	quarantining practices were rejected by clients because of confinement fears and concerns related to being separated from their social group not solely due to lack of compliance.

Discussion

The SARS-Cov-2 pandemic poses the greatest threat to the elderly in the population830. It has very strong negative effects in the field of health, mental and social. The facilities for seniors themselves face new and serious challenges including vulnerable people on the street. (Subramanian, Selvaraj, Shahum, Krcmery, 2020).

The research results have shown that homeless shelters and other organisations reported increased demand for homeless services due to the pandemic, and numerous operational challenges including loss of volunteers and staffing issues, additional unbudgeted expenses for services, decreased mental health not only clients, but the higher risk of burn out of workers in shelters as well. During the pandemic and work with the homeless people, there ere difficulties to deconcentrate spaces or enforcing masks and social distancing. Community-based homeless service organisations described frustrations around lack of federal guidance and challenges navigating emergency relief resources and funding connected with the lack of staff and volunteers willing to work more hours at the pandemic period.

Community-based organisations, including homeless shelters, are uniquely qualified to inform, and should be included in planning efforts for, pandemic response. Homelessness is a result of varying circumstances for a wide range of people, thus there is no one-size-fits all approach and pandemic response and impact mitigation strategies must be tailored to specific local contexts (Baggett et al., 2021).

The covid-19 influence the quality of life especially people with pre-existing health problems. Returning to full condition can prove to be long-term and not always successful. Improving proprioception intersects with the whole process of physical therapy, which includes exercises for muscle function, mobility, coordination, balance and locomotion. These therapies should be provided to increase the health conditions of people at risk of covid-19 as well (Rottermund, Michalak, Ludvigh Cintulova et al., 2022).

Concurrent efforts deployed by area shelters included emphasis on disinfection (eg, frequent cleaning, supporting hand and respiratory hygiene, ensuring adequate ventilation); environmental controls (eg, bed distancing, staggered showering schedules, staggered meals); and administrative controls (eg, ensuring clearly communicated sick-leave policies for staff members, reducing unnecessary assembly of staff members and guests). Ultimately, many shelters used a decongestion strategy to relocate people at highest risk for COVID-19 complications to vacated university dormitories. (Baggett et al., 2020).

Sewing masks became community activity when woman saw masks for free for the vulnerable people, especially seniors, Roma people and alone homeless people and became a good business to be sold. (Ludvigh Cintulová, Rottermund, Budayová, 2021).

One of the biggest problems associated with the pandemic was the lack of staff involved in the preparation and implementation of all arrangements, the workers themselves and the recipients of social services were at risk, and no one could predict whether and for how long the coronavirus would be kept behind the gates. In the process of implementing the measures, which took place in March 2020, we encountered problems in understanding the importance of arrangements such as wearing towels, increased hygiene requirements, social isolation and setting new rules, in some cases violations and low cooperation between workers and users. Later, restrictive actions were tightened, which meant the creation of a contingency plan in the fight against coronavirus, and especially in the of COVID-19 cases in social services facilities, (Krcmery, et al., 2020). Obstacles also appeared on the part of the clients of community, many of whom were misinformed, feared the spread of the unknown virus and feared death (Costa et al., 2020).

The huge impact of Covid-19 pandemic is seen in the increased number of people living in poverty and their pre-existing health problems were not treated so it lead to the worse living conditions and even more additions has been occurred in the live of vulnerable people living out of their own household (Beňo, Stukovsky, Ludvigh Cintulova, Samohyl, 2020).

Conclusion

The socio-ecological model guided the analysis of multilevel challenges and responses for COVID-19 risk and impact mitigation for this homeless population. Homelessness remains a bewilderingly complex public health challenge that has long thwarted simple solutions. Homelessness magnifies poor health, exposes those in crowded shelters to communicable diseases, complicates management of chronic illnesses, and uncovers deep fault lines in our health care system. For those who are homeless, the relentless daily struggle for safe shelter and a warm meal overshadows health needs, leaving common illnesses to progress and injuries to fester. A vast array of obstacles exasperates clinicians serving the homeless and confounds delivery systems intended to help this population (James J. O'Connell, 2010).

References

- AlYahmady HH, Al Abri SS. Using Nvivo for Data Analysis in Qualitative Research. *IJJE*. 2013;2(2):181–6.
- Baggett TP, Gaeta JM. 2021. COVID-19 and homelessness: when crises intersect. *Lancet Public Health*. 2021 Apr 1;6(4):e193–4.
- Baggett TP Scott JA Le MH et al. 2020. Clinical outcomes, costs, and cost-effectiveness of strategies for adults experiencing sheltered homelessness during the COVID-19 pandemic. *JAMA Netw Open*. 2020; 3e2028195.
- Beňo, P, Stukovsky P, Ludvigh Cintulova L, Samohyl, M. 2020. Analysis of the poverty risk in european countries. *Acta Misiologica* 2020: 14(1):92-101. ISSN: 2453-7160
- Buzalová S., Radková, L. Ludvigh Cintulová. 2021. The impact of the first two waves of the sars-cov-2 pandemic on seniors in social services facilities. *Acta Missiologica* 2021. Vol. 15, No. 2, p.311
- Costa, Cecilia, Dariusz, Gardocki, Krzysztof, Trębski et al. 2020. SOME SPECIFICITIES OF LONG-TERM CARE WITHIN THE EU IN THE CONTEXT OF THE CONSEQUENCES OF COVID-19. *Acta Missiologica* 14, no 1, (2020): 79-82. <https://www.actamissiologica.com/European>
- Observatory on Homelessness. 2012. Counting Homeless People in the 2011 Housing and Population Census. EOH Comparative Studies on Homelessness. Brussels.

- FEANTSA 2018. ETHOS Light: European Typology of Homelessness and Housing Exclusion, Measurement of Homelessness at European Union Level, www.feantsa.org/download/fea-002-18-update-ethos-light-0032417441788687419154.pdf.
- FEANTSA. 2014. A Retrospective Module on Experience of Homelessness in EU SILC. Discussion Paper for Eurostat 9th Meeting of the Task Force on the Revision of the EU SILC Legal Basis.
- Gerbery, D. 2015. Estimates of the number of people without a home or in risky housing. Available: <https://www.ceit.sk/IVPR/images/IVPR/vyskum/2015/Ondrusova/kapitola2.pdf>
- Ivančíková, E. – Škápik, P. 2015. "Counting the homeless as part of the last census". In: Transformation of Slovak society in the light of the results of the last three population censuses. Slovak Demographic and Statistical Society, p. 36-41.
- James J. O'Connell, Sarah C. Oppenheimer, Christine M. Judge, Robert L. Taube, Bonnie B. Blanchfield, Stacy E. Swain, and Howard K. Koh, 2010: The Boston Health Care for the Homeless Program: A Public Health Framework American Journal of Public Health 100, 1400_1408, <https://doi.org/10.2105/AJPH.2009.173609>
- Karb R Samuels E Vanjani R Trimbur C Napoli A. 2020. Homeless shelter characteristics and prevalence of SARS-CoV-2. West J Emerg Med. 2020; 21: 1048-1053
- Krcmery, Vladimir, Ladislav Bucko, Daria Kimuli et al. 2020. Cohortation and testing of elderly homeless within covid pademics in an urban environment – example of a life island mission model." Acta Missiologica 14, no 1, (2020): 76-78. <https://www.actamissiologica.com/>
- Ludvigh Cintulová, L, Rottermund, R, Budayová, Z. 2021. Analysis of motivation to wear face masks in the sars-cov-2 pandemic relevant also for the post-covid era," Acta Missiologica 15, no. 1, (2021): 119. <https://www.actamissiologica.com/>
- OECD 2015. Integrating Social Services for Vulnerable Groups: Bridging Sectors for Better Service Delivery, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264233775-e>
- OECD 2020. "Better data and policies to fight homelessness in the OECD", OECD Policy Briefs on Affordable Housing. [Également disponible en français] homelessness-policy-brief-2020.pdf (oecd.org)

UNECE (2008): Conference of European Statisticians Recommendations for the 2010 Censuses of Population and Housing

OECD 2021. Lack of housing for young people. Available: <https://www.oecd.org/housing/no-home-for-the-young.pdf>

Rottermund, J., Michalak G, Ludvigh Cintulová L., Berska-Mašlej M, Beňo, P. 2022. Knee joint diagnostics using in-depth sensory tests. In International Journal of Health New Technologies and Social Work 2022;17(3). ISSN 1336-9326

Subramanian, Selvaraj, Andrea, Shahum and Vladimir Krcmery. 2020. The covid-19 perspective from both sides of the globe – south east asia versus europe. “the coronavirus disease may be controlled within late spring and early summer, 2020” practical experience gained during epidemics similar to the coronavirus pandemic – commented interview.” Acta Missiologica 14, no 1, (2020): 164. <https://www.actamissiologica.com/>

Contact:

prof. Ing. Libuša Radková, PhD.

Mgr. Mariana Hamarová

St. Elizabeth University of Health and Social Sciences
Nám. 1. mája 1, 810 00 Bratislava

Doc. PharmDr. Pavol Beňo, CSc.

Trnava University in Trnava,
Faculty of Health and Social Work
Department of laboratory investigation methods in healthcare