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Access to healthcare services for vulnerable populations in the Czech Republic

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Abstract

Health care directly depends on the health policy system adopted in a given country. Social and economic determinants have a direct impact on well-being and ability to access health services. People at risk are referred to as a "vulnerable population", and theories from Health Economics support the concept.

The study objective is to identify the potential risks associated with missing care for individuals from vulnerable populations. The study employs qualitative approaches, combining data collection, and analysis techniques to provide an overview of the relationship between vulnerable population groups, access to healthcare, and potential barriers. The chosen methods include literature and documentation analysis using the PRISMA-PICOT approach, as well as expert opinions.

The results show 10 potential groups of vulnerable populations relevant to the Czech environment. Due to its multidisciplinary nature, the categories are segmented according to economic, social, and health perspectives. The study also identifies relevant barriers leading to insufficient care. The most frequently cited barrier is the choice of setting, where rural areas are considered high-risk for the most vulnerable groups. In light of the existing literature, the study provisionally situates these global challenges within the Czech context as well. New terminology may bring more understanding and fundamental theories for new research strategies.

Keywords: health economics, barriers, population, Czechia, vulnerability

Introduction

Health economics, focusing on the economic aspects of healthcare, is crucial for managing both financial resources and the effectiveness and accessibility of healthcare services (Phelps, 2017). Health disparities refer to the inequalities in health outcomes and access to healthcare across racial, ethnic, and socioeconomic groups. These disparities manifest as differences in disease prevalence, health outcomes, or access to healthcare (Reilly, 2021). The Institute of Medicine defines health disparities as racial or ethnic differences in healthcare quality unrelated to access, clinical needs, or preferences (McGuire et al., 2006). Some studies expand upon the issue, recognising that the problem extends beyond access disparities to encompass the broader concept of vulnerable populations. Recent research has focused on defining vulnerable groups and analysing the significant impact of income inequality, which exacerbates health disparities and emphasises the importance of an individual's circumstances (Chumo et al., 2023). The WHO, following recommendations from multinational corporations, has published a report on the social determinants of health that can influence social policy and the utilisation of public resources in Europe. Interventions target clinicians who are not sufficiently educated about the lives and concerns of vulnerable populations, including LGBTQIA+ people, immigrants, prisoners, and families of patients with illnesses considered "incompatible with life" (Julmisse & Cole, 2024; Vasanthan et al., 2024 Waisel, 2013).

Literature review

The literature review focused on two key areas: the variability of vulnerable populations and the barriers to healthcare access affecting these groups.

Vulnerable population

Research from 2005 to 2010 in the USA highlighted high mortality rates among vulnerable populations. Studies revealed multiple factors influencing healthcare outcomes and access, including the quality of care provided (Larson et al., 2007; Tabaac et al., 2020). Existing research often lacks comprehensive approaches to understanding these complex interactions. While the cost of care has been identified as a frequent barrier, the quality of care is also significantly impacted (Sudore et al., 2006; Julmisse & Cole, 2024; Vanderbilt et al., 2013). Chronic diseases and comorbidities were prevalent, particularly among older Hispanics and Blacks (Vanderbilt et al., 2013). The need for holistic approaches, considering biological, psychological, and social factors, has been emphasised. Vulnerable populations have been progressively defined to include various age groups, individuals with chronic diseases, newborns, young children, pregnant women, racial and ethnic minorities, individuals with disabilities, and the LGBTQIA+ community (Rami et al., 2023; Sklar, 2018; Bourgois et al., 2017). A very typical diverse group is the 2SLGBTQIA+ community, which is characterised by a wide range of standard and non-standard examinations, such as monitoring hormonal conditions or preventive measures due to gender changes (Christo et al., 2024; Lampe et al., 2024; Shi & Stevens, 2021).

Potential barriers for vulnerable people

Vulnerability, stemming from factors like low socioeconomic status or chronic illness, is associated with a higher incidence of preventable diseases, barriers to accessing timely healthcare, and increased social isolation. These barriers include physical limitations (accessibility of facilities and transportation), financial constraints, and psychological barriers (e.g., health illiteracy, distrust of healthcare systems). Socioeconomic status (SES) is a significant factor in determining access and quality of care (Murata & Kondo, 2020; Wayne, 2012). To monitor barriers, the baseline position of equal access was defined as "the possibility for everyone to use the same health services." The standard indicator chosen was *delayed or missing care*, which is defined as: "postponing a visit to a specialist, even if specific or non-specific symptoms of a disease are evident" (Caraballo et al., 2020; Mahajan et al., 2021).

As we mentioned, there is an evident link between access to healthcare and proper healthcare. Some studies show that it has a significant impact on people from rural areas. Vulnerable people, such as those with mental health issues or the elderly, are at a high risk of not receiving care. The reason, known as a barrier, can be the lack of transport, knowledge, or money. Some people are also dependent on others and, without them, they cannot access healthcare facilities or call an ambulance if necessary (Caraballo et al., 2020; Mahajan et al., 2021; Murata & Kondo, 2020).

Methodology

This study employed a qualitative methodology that integrated content analysis of relevant texts and expert opinions.

Objectives

The study aimed to identify global vulnerable groups, select those relevant to the Czech Republic, and examine barriers to healthcare access.

Study design

This study followed a seventeen-step process outlined, combining studies from authors Muka et al. (2020), Page et al. (2021), and Scheidt et al. (2019). This involved defining a clinical question, developing a search strategy, conducting a literature review, selecting and assessing studies, synthesising data, reporting findings, fostering discussion, establishing conclusions, and peer-reviewing the survey.

For the relevant data and next step, we used expert opinions from 9 persons (3:3:3 ratio). The primary objective was to validate the data, select the appropriate information, and make it applicable to the Czech environment. The experts were chosen from the fields of economics, sociology, and healthcare to clarify the gathered data and update the existing theories.

Data collection and analysis

The clinical question focused on identifying vulnerable populations in the Czech Republic and the barriers to accessing their healthcare. The research incorporated data from the Web of Science database using specific keywords (barriers, access, healthcare, vulnerable, population, needs), Boolean operator *and*, and inclusion/exclusion criteria related to publication date (2025–2019), journal quality (Q1–Q3), and article type (Social Science Citation Index -SSCI was included, but reviews, conference contributions, etc. were excluded). Expert opinions were used to refine the analysis.

Our clinical question was defined as: *What are the vulnerable populations and what are their barriers in accessing health care relevant to the Czech Republic*?. The research question focused on socio-economic factors as much as definitions and other factors related to Health Economics or linked to access to healthcare. Within the section, both the relevance to the topic and the quality of the accepted study were checked. Data synthesis, reporting, searching for contributions to stimulating our discussion, and concluding were also carried out. In the initial phase, a total of 438 studies were found. A typical selection of the PRISMA flow diagram includes the duplication (n=0) and language (n=59) selection. We then proceeded with the title (n=112) and abstract (n=100) checks. We identified 191 articles for full-text reviews. The final

phase involved excluding irrelevant publications (n=179) through a full-text review. Most of the scanned papers were excluded due to differences in settings, objectives, perspectives, irrelevant theoretical frameworks, or participant fields. After selection, 12 relevant studies related to the research and our clinical question were included. The final step involved creating initial groups of vulnerable individuals and identifying potential needs and barriers, with input from selected experts.

For better understanding and data verification, we conducted a control investigation using statistical documents available on the UZIS website and a qualitative investigation involving experts from sociology, health professionals, and economists, as mentioned. This section helps eliminate irrelevant groups and provides an overview of representatives located in the Czech Republic. After a qualitative investigation, the data were summarised, the contexts combined, and the group of vulnerable persons relevant to the Czech Republic was created. We also add specific barriers and needs that the individuals must face.

The final part of the study involved presenting our theories to the specialists and conducting simple semi-structured interviews with them. A total of 5 healthcare facilities, five social facilities, and six research facilities covering economic, health, and social fields were approached, who were to propose competent persons and send their CVs to the project team. Three persons were selected for each research field (economics, sociology, and healthcare) by simple random selection. From the other participants, a list of recorded probands was obtained through simple random selection in cases where contact with the primary selected experts was not possible. Subsequently, all selected were contacted by telephone by the project manager and invited to a meeting in a neutral environment at a specified time. Before the interview began, the experts were informed that they should always express their agreement or disagreement with the presented result and provide a comment explaining their stance, supported by the best possible evidence from their practice. This interview was conducted verbally, and to facilitate a more efficient recording of the results and understanding, a record sheet was created for each expert (see: Appendix 1).

Their opinions were recorded, and we primarily focused on the relevance provided by groups of people and the potential barriers they presented. Their opinions should reveal the reliability theories and verify whether they apply to the Czech Republic. Direct quotes are marked in italics. For this part, we provide diverse perspectives from across the Czech Republic. Experts represented academic institutions, Private sector companies, Non-profit organisations, and Public/State facilities.

All the data were summarised at the end of the results section for better understanding of the problematic areas (Table 2).

Results

Our results were categorised into three perspectives: economic, sociological, and healthcare. All the results demonstrate a theoretical framework that we identify through data analysis and expert opinions. From this perspective, potential barriers related to the specific view were also taken into consideration.

The second part is focused on experts' opinions, and for a better understanding of the background of the chosen one, we ask about characteristic information (Table 1).

Table 1. Experts' characteristics

Expert no.	Territorial diversity	Institutional diversity	Sectoral diversity
E1	Prague	Private sector Company	Personal finances and behavioural economy
E2	Jihlava	Academic institution	Economic sciences
E3	Czech Budweis	Non-profit organisation	Macroeconomics and welfare economics
S1	Prague	Public/State facility	Family and children support
S2	Ostrava	Academic institution	General social sciences, social support for selected groups of people
S3	Czech Budweis	Non-profit organisation	Support for people with administration processes and illnesses
H1	Prague	Public/State facility	General Physician
H2	Brno	Public/State facility	ICU nurse
H3	Jihlava	Academic institution	Public health and nursing sciences

Economic perspective

Based on the analysis of economic factors and vulnerable populations, four large groups of individuals or families were identified.

The first group is the low-income population, which means that individuals in this group may face financial barriers to accessing healthcare. In this case, the low personal or family budget is attributed to a low income (Martell & Roncolato, 2023; Neugebauer et al., 2024). Unfortunately, this phenomenon is exacerbated by other factors, such as the inability to buy a ticket, which reduces the possibility of seeking adequate healthcare. Some studies also suggest that these stereotypes are traditional and are passed down from generation to generation, or may be related to the lower educational attainment often found among low-income individuals (Santana et al., 2021). The Czech Republic is somewhat different; however, low-income individuals or families are also affected. The barrier is also evident in the money income, as it is in the Czech Republic as in other countries (Neugebauer et al., 2021).

The second group comprises immigrants and refugees with diverse socio-economic and cultural backgrounds (Kuran et al., 2020; Martell & Roncolato, 2023; Santana et al., 2021). The economic value can be a blind spot here; however, they are aware of the real value of the money in the Czech Republic, and they do not have any mental deficits. The variations in the economic system and values in other countries or communities make this group of people vulnerable. This means that differences in the healthcare and financial systems in the Czech Republic can be confusing for refugees and immigrants, making it difficult to understand all the associated obligations (Lovětínská & Vokoun, 2023).

The third group is consists of pregnant women and fetuses. All people are aware of the various priorities and life-changing mechanisms that begin during pregnancy (Aisyah et al., 2024). There is a potential impact on specific needs during gestation, as economic status can change rapidly. In the Czech Republic, social services, and financial support are available for mothers and their children before and after the child is born. It is not typical for all European or other countries to have this kind of support. Based on the income changes, the parents, primarily mothers, are part of the group's vulnerable population from an economic perspective (MoLSA, 2024; Neugebauer et al., 2024).

Social vulnerability

Social vulnerability is linked to social factors and vulnerable groups. This means that there can be a change in social role or some differences in social status, which makes people vulnerable (Neugebauer et al., 2024).

The first group consists of individuals with a temporarily or permanently altered social role, such as pregnant women, pensioners, those unable to work, or those receiving social benefits for care, e.g., disability pensions (Kasi & Saha, 2023; Häfliger et al., 2023). This group of people is changing the role they already have; however, they do not possess the necessary knowledge or abilities to handle the new function. That is the primary reason why many cases of missing care are described.

The second group consists of people intentionally or unintentionally experiencing homeless life. Aisyah et al. (2024) describe the socio-economic trap that countries with a universal system face. From this perspective, homeless people may face challenges accessing social support and resources, creating a cycle of vulnerability. Individuals involved in the sex industry or who use drugs may face specific social stigmas and barriers that affect their access to healthcare and social support. Homeless people can be treated as acute patients, and in the Czech Republic, they will get this kind of care for free (covered by state insurance). However, it does not address social status, which can lead to social vulnerability (Kuran et al., 2020; MoLSA, 2024; GHIC, 2024).

The third group comprises individuals from 2SLGBTQIA+ communities who have specific healthcare requirements and needs tailored to their respective community (Martell & Roncolato, 2023). Here, it is necessary to include all relevant group members. All members of this group, like those in other groups, face discrimination from the broader society. This is because their sexual orientations or gender identities may differ from the majority (Martell & Roncolato, 2023; Neugebauer et al., 2021; 2024). There are still countries where any other deviations are abandoned, and if any preferences, such as homosexuality or bisexuality, occur there, the person will be restricted immediately. This also makes the group vulnerable (Kuran et al., 2020; Yang et al., 2023).

The fourth group consists of mentally disadvantaged persons who are part of the social system, and, as part of integration, jobs are created for such underprivileged persons. It also includes social support for mentally disabled people. Many people from this group are unable to visit healthcare facilities because they lack knowledge on

how to assess their healthcare status and also do not know how to access the facilities (Neugebauer et al., 2021; 2024). It means the social system can offer support but if there is no active administration, and this group is very sensitive and vulnerable (Kasi & Saha, 2023).

The fifth group comprises individuals in custody, whose healthcare access is governed by specific regulations due to their restricted freedom (Kuran et al., 2020; Hyer et al., 2021). They have their own rules governing access to healthcare and medicine, and physicians and nurses work under their control, performing only the necessary tasks as described. It also leads to missing care or improper treatment methods. From a social perspective, they often lack regular access to healthcare facilities, which results in increased vulnerability (Neugebauer et al., 2024).

The last group consists of immigrants who are part of the social system but sometimes face various socio-cultural barriers, resulting in unequal access to healthcare (Kuran et al., 2020). We also mention this group in the economic section. In this case, it focuses more on sociology than on income or financial factors. Social vulnerability in this context refers to individuals having different social approaches to the community and varying knowledge of when to visit the hospital and how healthcare in the Czech Republic operates (MoLSA, 2024; Neugebauer et al., 2024).

Health vulnerability

Health vulnerability is primarily linked to health factors and the health conditions of vulnerable groups (Kasi & Saha, 2023).

The first category comprises individuals of critical age, specifically newborns, young children, and seniors (65 years and older). These age groups are considered vulnerable, mainly because it is not possible to safely recognise specific needs in young children due to limited communication and a higher incidence of injuries due to age. Similarly, polymorbidity—the co-occurrence of at least two chronic diseases—and the development of geriatric syndromes occur in older individuals (Bastani et al., 2021; Häfliger et al., 2023; Kasi & Saha, 2023; Lee et al., 2021).

The second group consists of chronically ill people who, due to their health condition, are forced to leave the standard system and focus more on the options that are available in connection with their health condition (Kasi & Saha, 2023). From a health perspective, they cannot travel elsewhere like other people, because their chronic illness can progressively worsen and rapidly change the health condition of the person. The primary solution to the daily situation is to seize the opportunities and choices. This means that people still have a chance to travel or relocate elsewhere, but they must calculate the likelihood of reaching a healthcare facility as soon as they need it (Neugebauer et al., 2024).

The third group consists of pregnant women who should follow the treatment regimen for the duration of the pregnancy, go for regular check-ups, and, in some cases, may be hospitalised (Bastani et al., 2021; Häfliger et al., 2023). Their health condition has changed, and they have responsibility for their own lives as much as for their child's life. Pregnant women are under a hormonal boost, a body-changing

process, and a different mental status. All these factors make them vulnerable from a health perspective (Neugebauer et al., 2024).

This is also related to the fourth group, i.e., women in their sixties. The principle is very similar to that of postpartum women who face postpartum anxiety, fears, lactation psychoses, secondary injury, poor wound healing, etc. (Häfliger et al., 2023). However, in this case, many women are trying to face this problem on their own because they are shy, afraid, or do not want to be seen in this light by their friends or family members. It is more about the mental condition than the body condition, but as a psycho-somatic circle, it can lead to additional problems that make them vulnerable (Neugebauer et al., 2024).

The fifth group consists of 2SLGBTQIA+ people who have specific care needs, especially trans women and trans men who choose to change their gender, which includes hormone therapy and surgical solutions (Kuran et al., 2020). All the changes people want lead to different types of treatment, preventive care, and lifestyle. This group of people also includes the non-majority sexual preferences. Most people around the world know what it means to create a lot of prejudices that can also lead to missing care, delayed care, or self-care treatment with illegal medications. In some cases, people have anonymously mentioned that they are afraid of going to a healthcare facility for testing or treatment, and instead, they order medications from other countries and treat themselves at home (Grigoryan et al., 2006; Stüdemann et al., 2024).

The last group consists of immigrants who have different care demands and cultural specifics, such as religious customs, the requirement that a woman be examined by a woman in the presence of her husband, etc. (Bastani et al., 2021; Kasi & Saha, 2023). Not only are the specific cultural preferences included in this group, but also a variety of different behaviours, lifestyles, chronic diseases, vaccinations, and languages are the main barriers that can lead to varying care and make them vulnerable (Neugebauer et al., 2024; Lovětínská, 2024).

Expert opinions

Selected experts from the economic section reveal possible vulnerable groups and agree with our theory. They all subscribed to the low-income population, immigrants, and refugees. Subject 2 described it: *Let's say that the low-income population means all people who have a salary below the average. I also think that we have a middle class of people here who are also not able to exist with their real budget.* The last group was created based on Subject 3, who believes that pregnant women are also vulnerable: *I want to mention pregnant women too because their financial situation will change rapidly compared to their previous lifestyle, I mean their work. Here, there can be a significant problem with income, social support from the country, and disparities in healthcare. They take care of the child first of all.* This means that we have identified the first three vulnerable groups from an economic perspective. Subjects 1 and 3 also speak about the depth of the problems. They consider the financial situation to be primarily associated with poor economic knowledge and lack of information about passive income, creating money, or how to save money using banks or other institutions:

Several studies describe that Czechs are very unhealthily informed about money and banking. In support of Subject 3, we find the answer in the history of the Czech Republic: *People in the Czech Republic do not trust the system because in history there were many people who tried to invest and were robbed*.

The economic barriers that people face only exacerbate the vulnerable areas that their current situation brings. This means that for people with low incomes, all aspects related to extra payments are a barrier. An example is given by Subject 2: *Of course, the barriers will include not only the fee that one has to pay for treatment but also the fee for medicines, bus, train or other transport, etc.* For immigrants, it is very similar, as stated by Subject 3: *If they have no savings, they have to earn money like every other citizen, with the added problem of the language barrier and the possibility that Czech residents will unfairly defend them due to their ignorance of local conditions.* Subject 3 also adds: *For pregnant women, there is a transition from work to a different regime, as I have already said. Mothers will provide healthcare for their children rather than themselves. But I have already said that*.

Experts from the social environment agree on the list of vulnerable people. According to Subjects 4, 5, and 6, this group includes: people with changed social roles, homeless people, the 2SLGBTQIA+ community, the mentally disabled, and people in custody. Subject 4 describes the situation: *When you think about it, you will find a common feature in all the groups mentioned, which is that they are fundamentally different from the majority society. This means that, e.g., pregnant women will ask the social system for support, homeless people do not support the social system, and people serving sentences are also financed from the social package.* Subject 6 adds that it is necessary to include immigrants who are learning about the social system: *Immigrants are a classic case of people who find themselves in a different environment and are, therefore, very vulnerable to the social system. They do not know what support we have available and what they can use to access healthcare facilities or order social services. The Czech Republic, or rather our social system, is now encountering precisely these aspects due to the influence of Ukrainian refugees*.

Barriers will be reflected mainly in the vulnerable field, i.e., in the area of changed roles or different values that they mean for the social system. As Subject 5 states: *A typical barrier from a social point of view will be, e.g., a low level of knowledge of the system, the inability to participate in the social system or the absolute absence of the system in the necessary area*. Subject 4 adds that: *The current discourse is the LGBT group. They have a diverse range of needs and represent deviant behaviour within the social system, which necessitates a tailored approach to social and health services. Or immigrants who move to rural areas and do not know the Czech language. If they do not come across a person in these areas who speaks, e.g., the Russian language, they will have a hard time getting any help*.

All selected experts from the health environment agree that from their point of view, the following belong to the vulnerable group: people of critical age (newborns, young children, and seniors), the chronically ill, pregnant women, women over sixty, the 2SLGBTQIA+ community, and immigrants. Subjects 7, and 8 support the opinion of Subject 9: *From my point of view, this is a clear example of when a patient is more at risk than others. Every person who seeks health care is currently vulnerable. However, look at it from a different perspective. We can see many other aspects, such as gender changes, deviations, chronic (e.g., oncological) diseases, and pregnant women as well. Then we*

have seniors and other age groups who cannot help themselves or only partially.

The barriers, however, include, in particular, the consequences that lead to vulnerability. As Subject 7 states: *We can give a classic example where a senior or a pregnant mother will not be able to use local transport to get to a health facility. The same applies to individuals of different ages or those with chronic illnesses. Transport and distance from the facility can greatly complicate the situation*. Experts also agree that barriers include language and specific examinations. Subject 9 adds: *Consider that many people with sexual differences need specific health services, and by that, I don't mean only testing but also medications or examinations. If they are in rural areas and perhaps want to be hidden from society, they can hardly ask someone else for help. This leads to people arriving late or not paying attention to prevention.*

Table 2. Vulnerable groups and their barriers

Vulnerable group	Economic barriers	Social barriers	Health-related barriers
Low-income populations	Financial constraints, inability to afford healthcare, medicines, transportation; limited access to information about financial resources.	Stigma related to poverty; potential lack of social support networks.	May delay or forgo necessary care due to cost; potentially poorer health outcomes due to inability to afford preventative measures.
Immigrants and refugees	Unfamiliarity with the Czech economic and healthcare systems; language barriers; difficulty finding employment; potential discrimination in hiring; lack of savings.	Cultural differences; potential discrimination; lack of understanding of social norms; social isolation; language barriers hinder access to information and services.	Language barriers hindering communication with healthcare providers; different cultural health beliefs; potential lack of access to culturally sensitive care.
Pregnant women	Potential loss of income due to inability to work; increased expenses related to pregnancy and childcare.	Altered social roles; potential stigma surrounding pregnancy; pressure to prioritise the child's health over their own.	Specific health needs related to pregnancy; potential for complications; need for consistent prenatal care; mental health concerns.
Individuals with altered social roles	Dependence on social benefits (e.g., disability pensions); potential loss of income.	Stigma related to their condition (e.g., disability); social isolation; lack of opportunities for social interaction.	Specific health needs related to their condition; potential for comorbidities; need for specialised care.
Homeless individuals	Lack of income; difficulty finding employment; limited access to financial resources; unable to afford housing, food, and healthcare.	Social stigma; isolation; lack of social support; potential for discrimination; limited access to social services; distrust in the system.	Exposure to harsh environments; increased risk of illness and injury; lack of access to hygiene and sanitation; mental health issues; substance use disorders.

Vulnerable group	Economic barriers	Social barriers	Health-related barriers
2SLGBTQIA+ community	Potential discrimination in employment leading to lower income; difficulty accessing healthcare benefits.	Discrimination; stigma; lack of understanding from healthcare providers; potential lack of access to LGBT-affirming care; societal bias.	Specific health needs related to gender transition or sexual orientation; mental health issues; fear of discrimination leading to delayed care.
Mentally disadvantaged individuals	Difficulty finding employment; dependence on social benefits; potential exploitation; lack of financial literacy; lack of knowing their healthcare needs.	Social stigma; discrimination; lack of social support; difficulty navigating social systems; potential for abuse or neglect; difficulty visiting healthcare facilities.	Cognitive impairments hindering understanding of health information; difficulty communicating their needs; increased risk of physical and mental health issues.
Individuals in custody	Restricted access to financial resources; dependence on the prison system for healthcare.	Restricted freedom; limited access to social support; potential for abuse or neglect; social isolation; restricted rules to governing how to access healthcare.	Limited access to healthcare; potential for inadequate medical care; mental health issues; risk of infectious diseases.
Seniors (65 years and older)	Possible loss of income from pension, possible health difficulties, increased health concerns, high price of health care.	Restrictions of freedom; limited access to social support; potential for abuse or neglect; social isolation; restricted rules to governing how to access healthcare.	Limited access to healthcare; potential for inadequate medical care; mental health issues; risk of infectious diseases.

Discussion

We identified that health economics plays a pivotal role in understanding and addressing the complexities of healthcare access and equity among various demographics. The disparity in health outcomes among different racial, ethnic, and socioeconomic groups highlights the critical need for targeted research and interventions. We can support our results by the authors Folland et al. (2023), who recommend focusing more on the problematic part of citizens, such as older adults or those who are chronically ill. Their arguments recommend staying near the healthcare facility or making the transport there as easy as possible. Some information also highlights the lack of care in countries with diverse social and healthcare systems. All new policies can make the health and social system more flexible, but healthcare professionals also disagree with these new changes (Neugebauer, 2023). Some healthcare access options are supported; however, they can be costly in some cases (Gordon et al., 2020).

Vulnerabilities are not monolithic. They vary significantly depending on localised contexts, which requires tailored approaches to address these differences. Our study highlights the perception of vulnerable populations as a significant global issue that extends beyond the borders of the Czech Republic and Europe. Folland et al. (2023) describe how health economics also addresses access to healthcare for the general population; however, it is essential to recognise that it is the specific population deemed vulnerable that requires the most attention. The initial spectrum of differences and needs in healthcare for different types of people, depending on their primary diagnosis, was described as early as 2013. Although this is closely related to medicine, it is essential to recognise that healthcare is an integral part of the state's economy (Waisel, 2013). Some political and legal anchoring can be found as early as 2004 when the author Ruof (2004) described the basic components and legal perspective on the whole issue.

Another area of discussion is the barriers faced by vulnerable groups. These can be divided into physical, financial, psychological, and socio-cultural dimensions. Physical barriers, such as the accessibility of health facilities and transportation problems, disproportionately affect populations living in rural areas or those with mobility issues. Financial constraints, which are often intertwined with the cost of healthcare, remain a significant barrier. Psychological barriers, including health literacy issues and distrust in the healthcare system, exacerbate the challenges faced by marginalised communities. In particular, for some vulnerable groups, such as pregnant women or those in detention, the specificities of their situation further define barriers to access. For example, expectant women require consistent prenatal care but may have difficulty navigating the healthcare system, especially if they encounter cultural or geographical challenges. People in detention often face systemic barriers that lead to inadequate health interventions, illustrating the role of institutional structure in maintaining health inequalities (Mec & Čermáková, 2024).

According to Folland et al. (2023), health economics also affects these places, which are often not geographically defined. Still, the system adopted and the current situation make these people vulnerable. For instance, in many provinces, they may face difficult transport, which is supported by our results. Gordon et al. (2020) also note that people from rural areas, mountainous regions, or island states are particularly vulnerable. We can also focus more on the data presented, which is more broadly divided into economic domains.

From an economic perspective, low-income populations often face challenges associated with systemic factors that limit their access to health care. Immigrants and refugees may also struggle with unfamiliarity with the health care system and socioeconomic factors unique to their background, which contribute to their vulnerability (Folland et al., 2023). Socially, changes in social roles can place individuals in precarious positions. As an illustration, older populations and those receiving social assistance may struggle with the perceptions and knowledge needed to access necessary healthcare. Discrimination and stigma also play a significant role, particularly among marginalised sexual and gender minorities. This multidimensional perspective underscores the need for more inclusive and culturally competent health practices (Lovětínská & Vokoun, 2024; Alcendor et al., 2023; Andrews & Davies, 2022).

Socially, changes in social roles can place individuals in precarious positions. For example, older populations and those receiving social assistance may struggle with the perceptions and knowledge needed to access necessary healthcare. Discrimination and stigma also play a significant role, especially among marginalised sexual and gender minorities (Neugebauer et al., 2024). This multidimensional perspective highlights the importance of more inclusive and culturally competent health practices. However, the issue itself may have a deeper basis if we focus on the influence of individual neurotransmitters and their projection into the overall economic field. Rotschedl et al. (2024a) thus provide space for neuroeconomic thinking on the entire concept and offer insights into biological predispositions, situating them within the context of economic decision-making. Typically, an economic issue may arise regarding one's financial security or that of one's family, and borrowing funds from institutions may be necessary. This, in turn, may be related to the subsequent financial collapse and being categorised as vulnerable from an economic perspective (Rotschedl, 2022; Popescu et al., 2025). Within the framework of these analyses, various age predispositions can also be observed, which confirm age differences as a possible factor leading to vulnerability (Rotschedl & Mitwallyova, 2021). This is closely related to specific needs because health vulnerability manifests itself in several different populations, especially among newborns, children, the elderly, and people with chronic diseases. Many studies document other types of options but all systems have their pitfalls. Rotschedl et al. (2024b) agree that a consistent upgrade of pension systems in many countries could help reduce the economic vulnerability of this group of people. Cultural factors also significantly impact access to healthcare. Immigrants from diverse backgrounds may hold specific cultural beliefs that influence their health-seeking behaviour, underscoring the importance of cultural competence in healthcare provision. This has been confirmed in numerous studies, including those examining increased migration due to conflicts (Lovětínská, 2023).

Conclusion

This comprehensive analysis of the complexities surrounding vulnerable populations in the context of healthcare access reveals a multifaceted tapestry of interwoven economic, sociological, and health-related factors that engender significant barriers. The results unequivocally illustrate how these barriers manifest across various demographic groups, highlighting the urgent need for targeted interventions and policies that address the unique challenges faced by these communities.

From an economic perspective, our findings highlight how low-income populations, immigrants, and pregnant women navigate the healthcare system amid financial constraints that limit their access to essential services. The research indicates that economic vulnerability is not merely a matter of individual circumstances. Still, it is deeply rooted in systemic inequalities, which perpetuate cycles of poverty and inhibit health-seeking behaviours. The insights from experts reinforce this notion, emphasising the need for greater financial literacy and access to resources that can empower these populations to make informed decisions about their healthcare.

Sociologically, the data illuminate the transformations in social roles that make certain groups, such as the elderly, the homeless, and individuals within the 2SLGBTQIA+ community, especially vulnerable to marginalisation. The nuances of social vulnerability reflect the broader societal dynamics at play, where discrimination and stigma significantly shape health outcomes. By acknowledging the experiences of these groups, we not only confront the barriers they face but also recognise the critical importance of fostering inclusive practices within the healthcare system that respect and accommodate diverse identities and needs.

In terms of health vulnerability, our exploration reveals the unique challenges posed by varying age demographics, individuals with mental illnesses, and those requiring specific treatments for chronic conditions or identity transitions. The findings underscore the need for healthcare models that are adaptable and responsive to the evolving conditions and needs of vulnerable populations, highlighting the importance of early detection, preventive care, and personalised health interventions. This focus is especially relevant for women, particularly during pregnancy or later stages of life, when mental and physical health intersect in complex ways.

Moreover, our discussion suggests that the intersections of these vulnerabilities are not confined solely to local contexts but rather reflect a broader, global issue that transcends borders. The dynamics of migration and the influx of diverse populations necessitate a healthcare approach that is culturally competent and responsive to a variety of needs. This approach must actively engage with and dismantle the barriers that contribute to health disparities, with a focus on community engagement and education to mitigate the risks of continued inequities.

Therefore, addressing the complexities of healthcare access and equity for vulnerable populations requires a holistic and inclusive framework. Policies must integrate economic, social, and health aspects while ensuring they reflect the voices of those they intend to serve. Continuously adapting our understanding of vulnerability through an interdisciplinary lens that encompasses health economics, sociology, and cultural studies will lead to innovative solutions that enhance healthcare accessibility and improve outcomes. The commitment to recognising and empowering vulnerable groups establishes the foundation for a more equitable and just healthcare landscape, where every individual can navigate their health journey free from the shadows of systemic barriers. In doing so, we will not only improve individual health outcomes but also foster healthier communities and, ultimately, a more compassionate society.

Recommendations for policymakers

The pursuit of equitable healthcare is a fundamental human right and a crucial aspect of social justice. In the Czech Republic, healthcare policies must focus explicitly on reducing disparities that affect vulnerable populations. By adopting a comprehensive approach that integrates equity-focused policies, intersectoral collaboration, community engagement, data-driven decision-making, and adaptability, policymakers can effectively address and mitigate barriers to healthcare access.

An equity-focused approach is fundamental to reducing disparities in healthcare access and outcomes. Policies should specifically target vulnerable populations, such as immigrants, low-income individuals, and the LGBTQIA+ community, ensuring complete and fair healthcare coverage. Intersectoral collaboration is vital, as effective solutions require seamless integration across social services, education, housing, and healthcare sectors. For instance, cooperation between healthcare and housing services can significantly improve health outcomes for homeless individuals by addressing broader health determinants.

Community engagement is another crucial principle. Engaging vulnerable communities in policy development ensures that the initiatives are culturally appropriate and aligned with their specific healthcare needs. Such engagement fosters trust and enhances the efficacy of health programmes. Additionally, healthcare policies should be informed by robust data collection and analysis, which helps to uncover access barriers and health outcomes for different groups. For example, the use of disaggregated data can identify specific health disparities and guide targeted interventions, driving informed and effective decision-making processes.

Flexibility and adaptability in policy design ensure that strategies remain relevant and practical in response to evolving needs. Regularly reviewing and updating policies based on current evidence and changing circumstances enables healthcare initiatives to maintain their impact and relevance.

Addressing economic barriers involves expanding financial assistance programmes to increase funding for initiatives that help low-income individuals cover their healthcare costs. Subsidies for insurance premiums and transportation are practical examples that can improve access to essential medical services. Promoting financial literacy through specialised programmes can empower vulnerable populations to manage their finances effectively and utilise available healthcare resources efficiently.

Addressing social barriers requires strengthening anti-discrimination laws to protect these populations from exclusion in healthcare settings. Cultural competency training for healthcare providers enhances their ability to serve diverse populations effectively, ensuring they are sensitive to cultural differences and the needs of these populations. Expanding community health worker programmes provides culturally sensitive outreach, particularly for underserved communities, and bridges gaps between healthcare providers and patients.

Moreover, addressing language barriers by increasing the availability of interpretation services and providing multilingual health information enhances communication and health literacy, thereby improving healthcare access. Supporting social support networks through community centers and peer support groups strengthens these populations' social frameworks, facilitating better health outcomes.

Addressing health-related barriers is equally crucial. Expanding access to primary care by increasing the number of providers in underserved areas, along with utilising mobile clinics and telehealth services, can significantly enhance healthcare accessibility. Care coordination programmes help individuals navigate complex healthcare systems, ensuring they receive necessary and timely services.

Ensuring access to specialised services for specific groups, such as mental health care for refugees and gender-affirming services for transgender individuals, addresses

unique health needs. Furthermore, promoting preventive care initiatives can lead to the early detection and treatment of health issues, thereby reducing long-term disparities. To improve understanding and engagement, the development of accessible health information and assistance for individuals with low health literacy is paramount.

Targeted recommendations focus on specific vulnerable groups. For immigrants and refugees, providing culturally sensitive healthcare services with bilingual staff and multiple language accessibility is vital. For homeless individuals, increasing street medicine programmes and integrating healthcare with housing offers a comprehensive approach to addressing their needs. The LGBTQIA+ community benefits from access to gender-affirming and mental health services, alongside robust anti-discrimination policies.

Implementation and monitoring are critical to the success of these initiatives. Establishing a multi-stakeholder advisory group ensures diverse perspectives are incorporated into policy development and implementation. Sufficient resource allocation is necessary to support these recommendations effectively. Measurable performance indicators enable the tracking of progress and assessment of the impact on healthcare disparities. At the same time, regular evaluations ensure that policies remain effective and responsive to changes, fostering continuous improvement.

By implementing these comprehensive recommendations, policymakers can make significant strides toward improving healthcare access and outcomes for vulnerable populations in the Czech Republic, thus creating a more equitable and just healthcare system for all.

Study limitations

This study has a few limitations that we identified during the data collection, analysis, and interpretation of our results. The first is a small sample size. We selected nine experts to identify potential vulnerable groups and their associated barriers. More people involved can provide more precise definitions of the whole barriers and vulnerable groups, and it should be easier to describe all the selected variables in detail. More people can also represent the diversity of opinions within the Czech Republic.

Furthermore, the non-random selection of experts may have introduced selection bias, as the experts who agreed to participate may have had particular views or experiences that differed from those of the experts who declined. Therefore, the findings from the expert opinion component should be interpreted with caution and considered exploratory. Future research should aim to include a larger and more diverse sample of experts to ensure greater representativeness and generalisability of the results.

Finally, the study focuses specifically on the Czech Republic, and the findings may not be directly transferable to other countries with different healthcare systems, social policies, or cultural contexts. We also used a single point in time, and it cannot establish causality or determine the direction of relationships between variables.

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Attachments

Appendix 1. Record sheet for Experts (English version)

Healthcare Disparities and Vulnerable Populations Non-Standardized Survey

Introduction

Thank you for participating in this critical research study. This questionnaire aims to gather insights into the experiences and perceptions related to different vulnerable populations facing disparities in healthcare access and quality. Your honest responses will contribute valuable data to improve health equity and inform policy development.

Instructions

- Please read each question carefully.
- Answer as accurately and honestly as possible based on your experiences or perceptions.
- There are open-ended questions where you can share detailed opinions or examples.
- All responses are confidential and will be used solely for research purposes.

Data Privacy Notice (GDPR Compliance)

Your participation is voluntary. The data collected will be stored securely and anonymized to protect your personal information and identity. You have the right to withdraw your consent at any time, and your data will be deleted upon request. Your responses will be processed following the General Data Protection Regulation (GDPR). For further information about data protection, don't hesitate to get in touch with Mgr. Jan Neugebauer, Ph.D., MBA, project coordinator.

Additional information

This research is part of a larger study that monitors **disparities in healthcare access for vulnerable populations.** During this part, the researcher in front of you will ask you the same questions as you can see on this list, and we ask you to fill in the information on this paper and add your comments verbally or in written form. Feel free to take a moment to think about the question or add more details during the interview to the previous parts. All your information can be crucial to understanding the issue in-depth from your perspective.

Let us thank you for your cooperation!

Part 1: Personal and Demographic Information

Please provide the following information to help contextualize your responses.

1. Age: _____
2. Gender:

   ☐ Male
   ☐ Female
   ☐ Other
   ☐ Prefer not to say

3. Location (City/Country): _____
4. Profession/Role relevant to healthcare or social services (if applicable):

   _____

5. The field you represent in the study:

   ☐ Economic field
   ☐ Healthcare field
   ☐ Social field

Part 2: Knowledge and Perceptions of Vulnerable Populations

2.1 Which groups do you consider to be vulnerable to healthcare access and quality? (Select all that apply)

- ☐ Low-income/poverty-stricken individuals
- ☐ Racial and ethnic minorities
- ☐ Elderly adults
- ☐ Children and adolescents
- ☐ Persons with disabilities
- ☐ LGBTQ+ community members
- ☐ Immigrants and refugees (including undocumented)
- ☐ Homeless individuals
- ☐ Incarcerated populations/detainees
- ☐ People with chronic illnesses (e.g., diabetes, HIV/AIDS)
- ☐ People with mental health disorders
- ☐ Women, especially in underserved contexts
- ☐ Rural populations
- ☐ Domestic violence victims
- ☐ People with substance use disorders
- ☐ Pregnant women in vulnerable settings
- ☐ Others (please specify): _____

2.2 In your experience or observation, which of these groups face the most significant barriers in accessing quality healthcare? Please specify and describe possibilities or reasons.

Open space for answer:

Part 3: Practical Experiences and Opinions

3.1 Based on your interactions or observations, what are the main challenges vulnerable populations face regarding healthcare access?

Open space:

3.2 Have you observed or experienced any specific disparities in healthcare outcomes among these groups? Please specify.

Open space:

3.3 What strategies or interventions have you seen or think could improve healthcare access for vulnerable populations?

Open space:

Part 4: Personal Reflection

4.1 If you have worked directly with vulnerable groups, please share a brief example of a significant challenge or success you experienced.

Open space:

4.2 In your opinion, what are the most critical priorities for healthcare systems to reduce disparities among vulnerable populations?

Open space:

Thank you for your valuable contributions.

For the project team

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