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## Investigating Language Barriers in Public Healthcare Services: A Case Study of International Students in Budapest, Hungary

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### Keywords

Language barriers, public healthcare service, international students, Budapest, Hungary

### ABSTRACT

**Abstract:** Language barriers in healthcare impact the cost and quality of services, affecting international students in Budapest, Hungary. The study explores challenges faced by international students in understanding medical advice within the public healthcare system and identify strategies to overcome these challenges. A qualitative approach involving eighteen international students from various universities in Budapest was used for data analysis. While most participants did not face urgent health issues, those with more severe conditions encountered significant language barriers, signage issues, and access delays. The primary challenge identified was the language barrier, which complicated communication with medical staff. Participants utilized technology like Google Translate, interpreters, and non-verbal communication to overcome language barriers. The study emphasizes the need for policies to enhance communication between healthcare providers and international students for equitable access to quality healthcare services.

### Kulcsszavak

nyelvi akadályok, egészségügyi szolgáltatás, külföldi diákok, Budapest, Magyarország

### Nyelvi akadályok vizsgálata az egészségügyi ellátásban: Esettanulmány Budapesten élő külföldi hallgatókról

**Absztrakt:** Az egészségügyi ellátásban a nyelvi akadályok befolyásolják a szolgáltatások költségét, minőségét és hatással vannak a Budapesten (Magyarországon) élő külföldi hallgatókra. A tanulmány azokat a megoldásra váró nehézségeket tárja fel, melyekkel a külföldi hallgatók szembesültek az egészségügyi ellátás résztét képező orvosi tanácsok megértése kapcsán. A cél olyan stratégia kidolgozása,

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ami segít ezen problémák megoldásában. A kvalitatív megközelítés különböző budapesti egyetemen tanuló 18 külföldi hallgatótól kapott adatokat elemezte. A legtöbb résztvevő nem került olyan egészségügyi helyzetbe, ami sürgős ellátást igényelt, viszont azok, akik súlyos állapotban voltak, jelentős mértékű nyelvi akadállyal, jelölési gondokkal és késedelmes ellátással szembesültek. Az elsődleges nehézség a nyelvi akadály volt, ami körülményessé tette az egészségügyi dolgozókkal történő kommunikációt. A résztvevők Google Fordítót, tolmácsokat és nonverbális kommunikációt használtak segítségként, hogy legyőzzék a nyelvi akadályokat. A tanulmány hangsúlyozza, hogy olyan irányelvek kidolgozása szükséges, melyek javítják a egészségügyi dolgozók és a külföldi diákok közötti kommunikációt, hogy egyforma eséllyel juthassanak a minőségi egészségügyi szolgáltatásokhoz.

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## Introduction and Background of the study

In Europe, schools of public health have been slow to adapt to new technologies (Øvretveit 1998). According to Cooney, Felipe and Alexey (2021), healthcare sectors are increasingly embracing innovative solutions like robot-assisted care, advanced IT systems, and Service-Oriented Architectures (SOA), demonstrating that technology is driving progress in ways traditional institutions have yet to integrate fully. According to Namomsa (2023) Digital technologies bring big opportunities for transforming healthcare services that will result in quality health services in order to improve the well-being of the community.

In China, the use of information technology, including the internet, mobile internet, cloud computing, and big data, is being proposed as a means to improve the quality and accessibility of medical and healthcare services, including public health services (Zeng and Wu 2019). Additionally, service-oriented architectures (SOA) are being used to extend life and enhance the functionality of public health systems, enabling them to meet increasing demands for information and analysis (Noam 2010). Furthermore, computer multimedia terminals are being developed to provide health information and services in public places, offering personalised and intersectional health services.

Language barriers in public healthcare services can significantly affect healthcare professionals and patients. Miscommunication due to language

discordance can lead to reduced satisfaction among patients and healthcare providers, decreased quality of healthcare services, and compromised patient safety (Mangal and Farmer 2023). Language interpretation services are effective in enhancing care, but they may not be available in resource-limited settings and can increase the cost and length of healthcare visits (Sewoenam 2022; Zhao, Norman et al. 2021). Implementing online translation tools (e.g., Google Translate and MediBabble) has shown promise in improving healthcare quality and satisfaction among medical providers and patients (Patil and Davies 2014). It is crucial to address language barriers in healthcare to ensure linguistic equity and provide competent healthcare.

Language obstacles in healthcare occur when a practitioner and a patient do not speak the same language fluently. According to the 2020 United States Census, approximately 21.5% of respondents spoke a language other than English at home, and 8.2% (up from an estimated 4.8% in 1980) reported speaking English less than "very well" (these patients can sometimes be labelled as having "Limited English Proficiency"; however, this moniker is controversial) (US Census Bureau 2020). With a rising number of patients reporting primary languages other than English and limited English fluency entering the US healthcare system, healthcare professionals must be aware of the presence and impact of language barriers.

Effective patient-clinician communication is critical to quality healthcare delivery. Language barriers have been shown to increase the likelihood of medical errors (such as misdiagnoses, medication errors, or adverse drug reactions) by 50% and the risk of readmission by 50% (Al Shamsi, Almutairi et al. 2020; Cohen, Rivara et al. 2005; de Bruijne, van Rosse et al. 2013).

Language barriers have been reported to affect not only the quality of care but also the cost of delivering care, such as greater medical visit lengths and increased health resource use (Karliner, Jacobs et al. 2007). Patients who were identified as having a language barrier also reported changes in the quality of care, poor satisfaction with care received, and barriers to seeking and receiving healthcare, with one study finding that 66.7% of these patients reported facing a barrier when accessing healthcare and 20% not seeking healthcare because they were afraid of not understanding their healthcare provider (Wilson, Chen et al. 2005). Due to numerous omissions in safety event reports, efforts to assess the direct involvement of language barriers in safety events have proved difficult (Benda, Bisantz et al. 2022). Furthermore, previous research has indicated insufficient detection, reporting, and attempts to bridge linguistic

hurdles (Karliner, Jacobs et al. 2007). This may be due, in part, to healthcare staff's proclivity to overestimate a patient's English fluency, with studies suggesting that 25% of patients with a preferred language other than English are misclassified as English preferring (Boscolo-Hightower, Scheckel and Hammer 2014). In a large survey study, medical providers reported trouble understanding patients, which necessitated medical interpreter use in only 36% - 43% of patients who did not speak the same language as the provider (Kale and Syed 2010).

These challenges are particularly relevant for international students in Budapest, where language barriers can significantly impact access to healthcare services and effective communication with medical professionals. As a major educational hub, Budapest attracts a diverse student population, making the need for improved language support and culturally sensitive healthcare practices especially critical.

International students, as a growing and diverse demographic, are particularly vulnerable to language-related challenges when navigating healthcare systems in foreign countries. For many, the combination of cultural differences, unfamiliar medical terminology, and limited proficiency in the host country's language can complicate interactions with healthcare providers, reducing access to quality care.

Budapest, Hungary, a leading European educational hub, hosts thousands of international students each year. While Hungary has made strides in advancing public healthcare, the language barrier remains a critical issue for international students. Most public health services in Budapest are conducted in Hungarian, and despite some efforts to offer multilingual services, many students still encounter difficulties in accessing proper care. The impact of these barriers is not limited to students' physical and mental well-being but also significantly affects their academic experience and integration into local society.

This study aims to investigate the extent and impact of language barriers in public healthcare services on international students in Budapest. By examining the challenges these students face and exploring potential solutions, the study seeks to provide insights into how public healthcare systems can adapt to better serve a linguistically diverse population, ultimately improving healthcare access and outcomes for international students in Hungary. This study was intended to answer the following research questions: What challenges do international students in Budapest face when attempting to understand medical

advice within the public healthcare system? What potential approaches can be employed to address the difficulties encountered by international students across various universities in Budapest when trying to understand medical advice or instructions within the public healthcare system?

### **Implications of using uncommon languages in health care services for patients, providers, and the health system as a whole**

Using rare languages in healthcare services can have consequences for patients, providers, and the entire health system. Language issues can cause miscommunications between healthcare workers and patients, resulting in lower satisfaction, lower quality of care, and compromised patient safety (Mangal and Farmer 2023). To completely understand patients' needs and experiences, healthcare workers must be able to comprehend languages other than verbal communication, such as body language, unconscious language, and how patients manage their surroundings (Carlo 2022).

Furthermore, employing local languages in healthcare can improve care quality and patient safety by encouraging culturally sensitive care and improving communication between healthcare seekers and providers (Rasweswe, Mmapheko and Fhumulani 2022). Using untrained translators in multilingual countries can lead to provider-patient miscommunication, emphasizing the need for systemic solutions, including language training programs for healthcare personnel (Thomas 2021). Understanding the elements that influence spoken languages and how language semantics can be translated is essential for providing successful healthcare services, which necessitates coordination among healthcare practitioners, language specialists, and IT professionals.

### **How does the use of uncommon languages in health care services in Hungary affect the quality of care?**

The usage of uncommon languages in health care services in Hungary can impact care quality. For example, in a study conducted by Klinovszky, Kiss et al. (2019), it was discovered that health literacy influences patients' ability to absorb and use medical information offered by clinicians (Nagy 2018). This can be especially difficult when patients do not speak Hungarian, the official language. Furthermore, Nagy's research emphasises the relevance of language policies and regulations in accommodating language minorities, particularly migrants, in Hungary (Vilmosh 2022). If healthcare personnel cannot

communicate with patients in their original language successfully, it can lead to misconceptions, misdiagnoses, and, ultimately, a reduced quality of care offered. As a result, healthcare workers must have the required language skills and resources to provide efficient communication and high-quality care for patients who speak unusual languages.

## **Methods**

This section includes information about the study's participants, the research setting, and the specific research questions that guide the investigation into the challenges faced by international students in Budapest's public healthcare system.

### ***Research questions***

RQ 1. "What challenges do international students in Budapest face when attempting to understand medical advice within the public healthcare system?"

RQ 2. What potential approaches can be employed to address the difficulties encountered by international students across various universities in Budapest when trying to understand medical advice or instructions within the public healthcare system?

### ***Context of the study***

The study takes place in Budapest, the capital city of Hungary, which is home to a large number of international students because of its prestigious universities and lively cultural scene. Despite this welcoming environment, international students often encounter difficulties when dealing with the public healthcare system, mainly due to language barriers and differences in medical practices.

Budapest's public healthcare system, like many in non-English-speaking countries, can present significant challenges for non-native speakers. These challenges are compounded by the specialised and technical nature of medical terminology and the critical importance of accurately understanding medical advice and instructions. To address these challenges and propose some possible solutions, the present study will focus on two main research questions.

### ***The participants***

As shown in the below table 1 the participants in current academic research are eighteen international students studying in different universities in Budapest.

The participants come from broad and diverse educational backgrounds and research interests, such as Food Science, Earth Science, Mechanical Engineering, Computer Science, Organisational Science and Economics, and Linguistics, among others, representing the interdisciplinary character of our study. Their collective experience in Hungary ranges from 0.5 to 4 years, demonstrating significant immersion in the academic and cultural environment and reflecting adaptation to the Hungarian community.

The participants exhibit diverse language proficiency levels in English and Hungarian. English proficiency levels vary from basic to professional, while Hungarian proficiency tends to be at the beginner level. These diverse linguistic backgrounds of the participants may have implications for communication and collaboration in accessing public healthcare services. The participants, aged 22 to 37, came from 18 diverse academic programs and represented multiple continents, including Africa and Asia.

The geographic diversity of the participants in the study, which includes students from Asia, Africa, and the Middle East, significantly shapes their experiences in navigating the public healthcare system in Budapest. Here are some key points regarding this diversity and the importance of including students from other regions in future studies:

**Cultural Differences:** Students from different regions often have varying cultural backgrounds, beliefs, and practices related to health and healthcare. These differences can influence their expectations and interactions with healthcare providers. For instance, students from collectivist cultures may prioritize family involvement in healthcare decisions, while those from more individualistic cultures may focus on personal autonomy. Understanding these nuances is crucial for improving communication and care delivery.

**Language Proficiency:** The level of English proficiency can vary widely among students from different regions. For example, students from countries where English is a second language may face more significant challenges in understanding medical terminology and communicating with healthcare providers. This can lead to misunderstandings and reduced access to quality care, highlighting the need for tailored communication strategies.

**Previous Healthcare Experiences:** Students' prior experiences with healthcare systems in their home countries can shape their expectations and comfort levels when seeking care in Hungary. Those from countries with well-established

healthcare systems may have different expectations compared to those from regions with less access to healthcare services. This background can affect their willingness to seek help and their perceptions of the healthcare system in Budapest.

### **Importance of Including Students from Other Regions**

**Broader Insights:** Including students from other regions, such as Europe or the Americas, in future studies can provide a more comprehensive understanding of the challenges faced by international students. This broader perspective can help identify common issues and unique challenges that may arise from different cultural and healthcare contexts.

**Policy Development:** Insights gained from a diverse participant pool can inform policymakers and healthcare providers about the specific needs of various student populations. This can lead to the development of more inclusive and effective healthcare policies that address the unique challenges faced by international students from different backgrounds.

**Enhanced Support Systems:** Understanding the experiences of students from various regions can help universities and healthcare systems create better support systems. Tailored resources, such as language assistance programs and culturally sensitive healthcare services, can be developed to meet the diverse needs of international students, ultimately improving their healthcare access and outcomes.

In summary, the geographic diversity of participants shapes their healthcare experiences in significant ways, and including students from other regions in future studies is essential for developing a more inclusive and effective healthcare system for all international students.

A detailed description about the participants can be seen in the following table.



Table 1: A list of participants of the study

Participants	Age	Gender	Nationality	Academic programme	Length of stay in Hungary	Language proficiency
Participant 1	33	Male	Ethiopian	PhD in Food Science	2 year	English (Proficient) Hungarian (Basic)
Participant 2	27	Male	Ethiopian	Master	2 years	English (Good) Hungarian (Basic)
Participant 3	22	Male	Jordanian	Central European Studies MA	3 years	English (Proficient) Hungarian (Basic)
Participant 4	30	Male	Kenyan	PhD Earth Sciences	2 years	English (Proficient) Hungarian (Basic)
Participant 5	29	Female	Mongolian	MSc	2 years	English (Proficient) Hungarian (Basic)
Participant 6	25	Female	Thai	Master in Mechanical Engineering	2 years	English (Good) Hungarian (Basic)
Participant 7	29	Male	Indian	PhD in Engineering	2 years	English (Proficient) Hungarian (Basic)
Participant 8	37	Male	Ethiopian	PhD in Economic and regional science	1 year 4 months	English (Proficient) Hungarian (do not understand)
Participant 9	23	Female	Tunisian	Master in Computer science	2 years	English (Proficient) Hungarian (Basic)
Participant 10	27	Female	Myanmar	Phd in organisational science and economics	1 year	English (Proficient) Hungarian (Basic)

Participant 11	24	Female	Myanmar	Master in Food Safety and Quality Engineering	1 year 6 months	English (Proficient) Hungarian (Basic)
Participant 12	35	Male	Iran	PhD	2 years	English (Good) Hungarian (Basic)
Participant 13	27	Female	Myanmar	PhD in Education	4 years	English (Proficient) Hungarian (Basic)
Participant 14	37	Male	Nigerian	PhD	2 years	English (Proficient) Hungarian (Basic)
Participant 15	31, female, Myanmar	Female	Myanmar	Master in Regional and Environmental Economics	2 years	English (Proficient) Hungarian (Basic)
Participant 16	23	Female	Algerian	Master in Linguistics	2 years	English (Good) Hungarian (Basic)
Participant 17	35	Male	Ethiopian	MSc. in Economics	2 years	English (Good) Hungarian (Basic)
Participant 18	33	Male	Ethiopian	Master in Economics	1 year 6 months	English (Proficient) Hungarian (Basic)

Source: Own Data

**Note:** The participants were 18 international students from diverse academic backgrounds, including Food Science, Earth Sciences, Mechanical Engineering, and more. They had been residing in Hungary for varying periods, ranging from six months to four years, which provided a broad spectrum of experiences in navigating the public healthcare system.

### Data collection

The semi-structured interview guide has been chosen as the research instrument for the study. Eighteen interviews were conducted with eighteen international students on their perceptions and experiences in attempting to comprehend medical advice or instructions with the public healthcare system of Hungary. The semi-structured interview guide (see Appendix A) is designed

with pre-prepared questions, follow-up questions (probing questions), and some comments to conduct the interviews more effectively (Raizi 2016).

The semi-structured interview schedule consists of twenty-five questions and was created to investigate the experiences of international students in Hungary who encounter language barriers when trying to access public healthcare services. The interview is divided into ten sections, each focused on specific aspects of healthcare access, language challenges, and the cultural context. The interview begins with questions about the participants and demographic information, such as their identity, academic program and duration in Hungary, and English and Hungarian language proficiency levels. Questions 4 to 7 explore the participants and initial experiences and the challenges they faced with the healthcare system in Hungary. Questions 8 to 10 focus on communication issues between the participants and healthcare professionals, asking about their experiences with language barriers and the strategies they used to overcome communication difficulties. Questions 11 to 13 inquire about the availability and effectiveness of language support in Hungarian healthcare services, including the use of translation services or interpreters. Questions 14 and 15 examine the cultural sensitivity of healthcare providers and its impact on the healthcare experience of the participants. Questions 16 and 17 address the consequences of language barriers on the participants and health outcomes and ask for specific examples of when language difficulties may have led to poor health outcomes or delays in receiving care. Finally, questions 18 to 21 explore the participants and ideas for improving language support in the public healthcare system, their awareness of healthcare rights, and the availability of resources.

A pilot study was conducted with two participants, and the problematic questions that needed to be clarified or rephrased for the interviewees were revised and refined. According to the participant's availability, interviews were conducted in person or online. Participants were informed that they would be recorded, and they gave their consent to that. The interviews lasted from 20 to 30 minutes. The interview recordings were transcribed using Microsoft Word (Dictation).

### **Data analysis**

Thematic analysis was employed to identify recurring patterns and themes in the participants' responses. Initial open coding was followed by axial coding to develop a comprehensive understanding of the key challenges faced by

international students. The analysis of the data collected from the interview study involved a comprehensive qualitative approach. Firstly, the researchers coded the collected data manually. This coding process was thorough, closely examining the transcriptions of eighteen interviews conducted in the study. The researchers carefully read the resulting textual data multiple times to identify and extract significant codes. As the researcher examined the transcripts, meaningful patterns and recurring themes emerged.

The specified codes were then systematically organised into a list of the various aspects and elements in the participants' responses. After that, the identified themes were synthesised according to the existing literature review discussion. Then, the themes and subthemes were categorised to extract meaningful insights into the participants' perceptions and experiences related to language barriers in the public healthcare system of Hungary. Finally, the researchers provided a comprehensive discussion of the research questions, offering a nuanced understanding of the participants' perspectives.

Fig1: Research Methodology

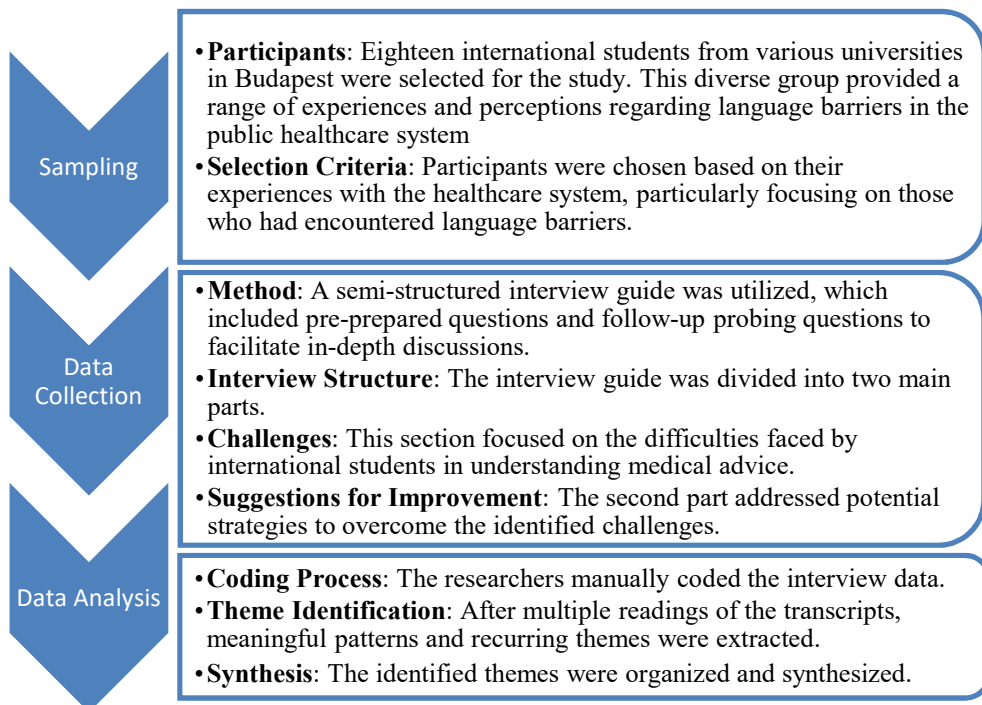
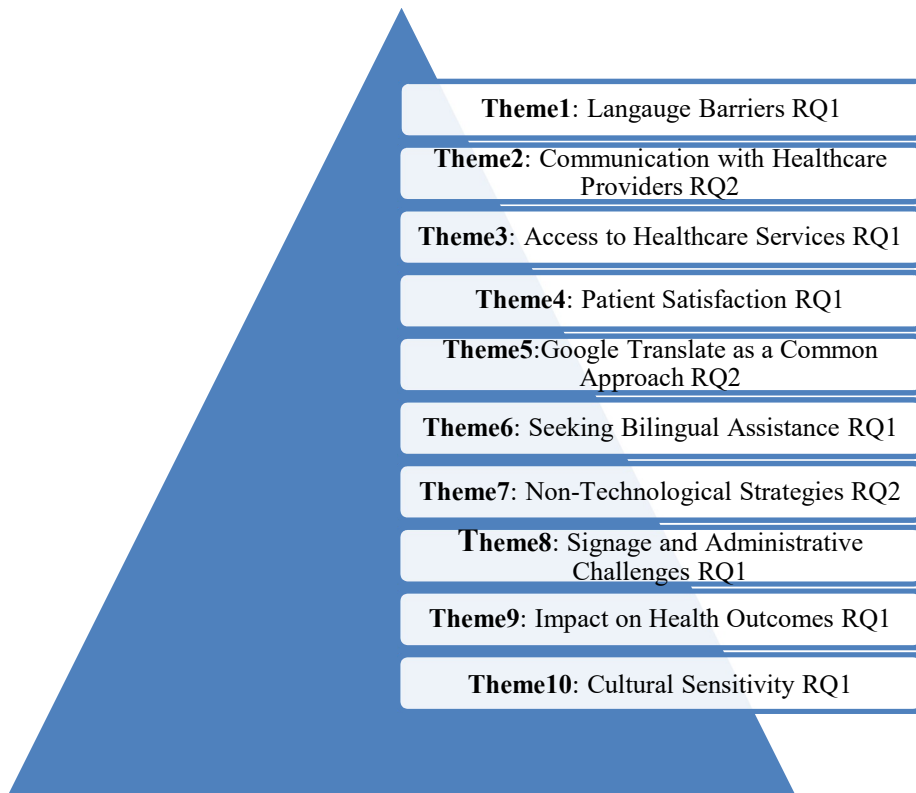


Fig2: The main themes of the research



Notes: The data analysis process identifies the primary themes, and each theme of the interview questions addresses the research questions.

### **Reliability and Validity**

For the validity of the study, active involvement of the participants was sought through member checks, which involve requesting them to review the interview transcripts and confirm the accuracy of their experience. To enhance the reliability of the findings, two researchers independently coded the data, and discrepancies were resolved through discussion until a consensus was reached.

### **Findings and discussion**

The identified themes mentioned in the previous section provide a comprehensive overview of the challenges and experiences faced by participants in the Hungarian healthcare system, emphasising the crucial role language plays in accessing and receiving appropriate medical care. In this

section, the two main research questions will be answered based on the identified themes.

RQ 1. What challenges do international students in different universities in Budapest face when attempting to comprehend medical advice or instructions within the public healthcare system?

The experiences shared by international students in different universities in Budapest regarding their interactions with the public healthcare system reveal a complex interplay of challenges, primarily rooted in language barriers, communication nuances, and varying degrees of satisfaction with the services provided.

One of the central themes emerging from the data is the challenge posed by language barriers. The difficulty in communicating with healthcare professionals and comprehending medical information hinders international students' access to timely and appropriate medical treatment. The majority of the participants (thirteen out of eighteen) indicated that language barriers posed a notable challenge in accessing healthcare services. For example, one participant emphasised that language was the "main barrier" because "no one spoke English," highlighting a critical systemic issue. Another participant described difficulties specifically in pharmacies when trying to purchase medicine, suggesting that the challenge extends beyond direct interactions with doctors to other areas of the healthcare system. On the other hand, some participants reported no significant language-related challenges, with some noting that healthcare staff, including nurses and doctors, spoke English fluently, facilitating effective communication. One respondent shared a nuanced experience where the doctor was kind but had to struggle with explaining his instructions due to limited English proficiency. These varied experiences indicate that while language barriers are a substantial obstacle for some, others benefit from adequate English language support within the healthcare system.

The second emerging theme is communication with healthcare providers, which is directly linked to the first theme, language barriers. Because of the language barriers (i.e. limited English language proficiency of Hungarian healthcare providers and the limited Hungarian language proficiency of international students), there have been several issues in communication between healthcare providers and international students. For example, participant 4 mentioned that miscommunication at hospital reception led to

being redirected to another facility, causing unnecessary delays and confusion. Participant 5 recounted a severe incident where the miscommunication with a contracted home doctor resulted in deteriorating health and subsequent hospitalisation. A particularly urgent case narrated by Participant 10 involved a misdirected midnight hospital visit, which made the patient's condition worse. Additionally, some participants noted challenges with understanding medical information when reports were provided in a non-native language or when encountering technical, medical terms. Therefore, communication with healthcare providers appears to be an important aspect of the healthcare experience for international students.

The third significant theme emerging from the analysed data is access to healthcare services. Because of miscommunication between healthcare providers and international students caused by language barriers, the participants found difficulties in accessing healthcare services. Some participants report ease of access in emergencies, contrasting with delays when English-speaking personnel are not readily available. The challenges in obtaining timely appointments and treatment underscore the need for a more streamlined and language-inclusive healthcare system.

The quality of healthcare service accessed by the participant's results in various levels of patient satisfaction, which is the fourth emerging theme from the data. Patient satisfaction emerges as a mixed and subjective aspect of the healthcare experience for international students. Positive encounters with supportive, friendly, and English-speaking healthcare providers contribute to higher satisfaction levels however, instances of dissatisfaction surface when language barriers lead to misunderstandings and, consequently, inadequate treatment. Overall, all these challenges discussed above suggest a need for more consistent language services across all healthcare touchpoints to ensure equitable access and comprehension for all international students.

In conclusion, the challenges faced by international students in Budapest's public healthcare system are complicated and interconnected. Addressing language barriers, improving communication strategies, enhancing accessibility, and promoting cultural sensitivity are imperative steps toward fostering a more inclusive and effective healthcare environment for the diverse student population. The narratives presented here provide valuable insights that can inform targeted interventions better to meet the healthcare needs of international students in Budapest.

RQ 2. What potential approaches can be employed to address the difficulties encountered by international students across various universities in Budapest when trying to understand medical advice or instructions within the public healthcare system?

The findings of this study suggest potential approaches to address the difficulties faced by international students in Hungary when trying to comprehend medical advice or instructions within the public healthcare system. The participants' responses revealed key themes such as Google Translate, bilingual assistance, non-technological strategies, and cultural sensitivity that are essential to consider in exploring practical solutions.

The data on how participants typically overcome language challenges when interacting with healthcare providers reveals a predominant reliance on technological tools, particularly Google Translate. Out of eighteen responses, a substantial number indicated that they use Google Translate to facilitate communication with healthcare providers. This tool serves as a practical solution to immediate language barriers. Its practicality in overcoming language barriers within a healthcare context was emphasised, with participants reporting its widespread adoption for various interactions, including checking inscriptions, form completion, and communication with healthcare professionals. However, while Google Translate is widely used to solve problems with language barriers, there are some limitations to using it in communication among healthcare providers and international students. Participant 17 claimed that relying solely on Google Translate can lead to misdirection when translation is done word by word, and the user may misunderstand the overall meaning of the original message.

Moreover, Participant 4 also noted that Google Translate is not as effective as direct communication with a healthcare professional in a shared language. This finding is consistent with research undertaken in the following studies. Flores (2006) revealed that communication difficulties were associated with poor healthcare outcomes, particularly for non-native speakers. As a result, many patients rely on technologies like Google Translate to improve communication. Zhou, Yang et al. (2022) investigated the usefulness of machine translation systems, such as Google Translate, in medical situations. They discovered that, while such technologies helped to overcome the communication gap, there were hazards connected with mistakes in medical translations, especially in complicated medical language.



A survey of international students conducted by Al Shamsi, Almutairi et al. (2020) indicated that many students struggle to communicate with healthcare practitioners owing to language barriers. According to the study, a large percentage of students used translation tools like Google Translate during medical appointments to improve communication. Patil and Davies (2014) investigated the usage of Google Translate for medical talks. They discovered that, while it was a popular tool among non-native speakers in healthcare settings, it was not always reliable in translating complicated medical words. However, patients continued to rely on it to grasp and communicate fundamental health information.

Some participants also reported seeking assistance from English-speaking or bilingual individuals within the healthcare setting or relying on non-verbal communication methods, such as smiling and using signs, to convey their needs. The use of interpreters was minimal among the respondents, with mixed feedback regarding their effectiveness; some found it helpful, while others pointed out challenges, such as literal translations that failed to convey the intended meaning. Some participants mentioned non-technological strategies, such as the use of gestures and expressions. Acknowledging that smiling and other non-verbal cues can facilitate communication suggests a helpful approach to overcoming language barriers. This blending of technological and interpersonal strategies emphasises the complex nature of addressing communication challenges in diverse and dynamic healthcare environments. In this case, cultural sensitivity emerges as a noteworthy aspect, with international students recognising efforts by healthcare professionals to bridge communication gaps through non-verbal means. Some express a desire to understand Hungarian, emphasising the importance of cultural competence in enhancing healthcare comprehension.

A few responses indicated no experience with language barriers, suggesting either proficiency in the local language or access to English-speaking healthcare providers. Cultural sensitivity involves recognising and respecting the diverse backgrounds of patients, which can significantly impact communication. In the context of healthcare, it helps bridge gaps caused by language barriers, enhancing the patient-provider relationship. Participants noted that non-verbal cues, such as smiling and gestures, played a vital role in communication. These methods can help convey empathy and understanding, making patients feel more comfortable despite language differences. Some international students expressed a willingness to learn Hungarian, indicating

that cultural competence can improve their healthcare experience. This desire reflects an understanding that language and culture are intertwined, and learning the local language can enhance communication. While some participants found interpreters helpful, others experienced challenges with literal translations. This highlights the need for culturally aware interpreters who can navigate both language and cultural nuances effectively. Cultural sensitivity can lead to improved patient satisfaction. When healthcare providers demonstrate awareness of cultural differences, it fosters trust and encourages open communication, ultimately enhancing the quality of care received. By focusing on cultural sensitivity, healthcare providers can better address language barriers, leading to more effective patient-provider relationships and improved healthcare outcomes.

However, the repeated mention of Google Translate underscores a significant gap in formal language support services. This necessity is emphasised by the potential for miscommunication caused by using non-professional translation tools, which can lead to misunderstandings and compromised patient care. These findings suggest the need for more accessible and reliable language support services, such as professional interpreters and multilingual staff within healthcare settings, to ensure clear and accurate communication, which is crucial for effective patient care and safety.

In conclusion, the discussion highlights the complex interaction of technological and interpersonal approaches in addressing language barriers for international students in Hungary's public healthcare system. The findings suggest that a comprehensive strategy, integrating tools like Google Translate with human interaction and considering non-technological strategies, is crucial for enhancing communication and ensuring adequate understanding of medical advice within this demographic.

Table2: Common strategies to overcome language barriers in healthcare

Strategy	Effectiveness
<b>Google Translate</b>	Widely used and considered a practical solution for immediate language barriers. Many participants reported its effectiveness in facilitating communication with healthcare providers, including checking inscriptions and completing forms
<b>Interpreters</b>	Usage was minimal among participants, with mixed feedback. Some found interpreters helpful, while others experienced challenges with literal translations that did not convey the intended meaning
<b>Gestures and Non-verbal Communication</b>	Some participants relied on gestures and expressions to convey their needs. This method was noted as a helpful approach, indicating that non-verbal cues can facilitate communication
<b>Bilingual Assistance</b>	Participants sought help from English-speaking or bilingual individuals within the healthcare setting, which was recognized as an effective strategy for overcoming language barriers.
<b>Cultural Sensitivity</b>	Acknowledgment of cultural sensitivity by healthcare professionals helped bridge communication gaps. Some participants expressed a desire to learn Hungarian, indicating that cultural competence enhances healthcare comprehension

Source: Own finding

## Conclusion

The study paper focuses on the problems that international students face when attempting to grasp medical advice or instructions provided by the public healthcare system. The study included fifteen international students from various Budapest universities with varying educational backgrounds and

research interests. Participants stressed the necessity of resolving language barriers in public healthcare services since miscommunication can lead to lower satisfaction and lower quality of care. Language barriers significantly impact international students' access to healthcare services in Budapest, Hungary. Challenges faced by students include difficulties in understanding medical advice, miscommunication with healthcare providers, and delays in accessing timely treatment. The use of Google Translate is a common strategy employed by students to overcome language barriers in healthcare settings. While Google Translate is a helpful tool, the study underscores the need for institutionalised language support services, including professional interpreters and multilingual staff. Participants also rely on bilingual assistance, non-verbal communication methods, and occasional interpreters to bridge communication gaps in healthcare interactions. Cultural sensitivity plays a crucial role in enhancing communication between international students and healthcare providers, emphasising the importance of understanding diverse cultural backgrounds.

The study underscores the need for more accessible and reliable language support services, including professional interpreters and multilingual staff in healthcare settings, to ensure clear and accurate communication for effective patient care and safety. Participants noted that Google Translate was a frequently used tool to overcome language barriers in healthcare settings. They noted its usefulness and widespread usage for a variety of activities, such as checking inscriptions, completing forms, and communicating with healthcare experts. Participants also noted the complementing aspect of seeking multilingual support, emphasising their readiness to engage English-speaking individuals and use translation services. Overall, addressing language barriers, improving communication strategies, enhancing accessibility, and promoting cultural sensitivity are essential steps to create a more inclusive and effective healthcare environment for international students in Budapest, Hungary. Healthcare providers should consider implementing mandatory interpreter services for non-Hungarian speakers. This would ensure that patients can communicate effectively with medical staff, reducing the risk of miscommunication and enhancing patient safety. Training programs should be developed to educate healthcare professionals about the challenges posed by language barriers. This training can help staff recognise when to utilise interpreter services and how to communicate more effectively with patients who have limited language proficiency.

Healthcare institutions should strive to hire multilingual staff that can assist non-Hungarian-speaking patients. This would not only improve communication but also create a more welcoming environment for international students. While tools like Google Translate are commonly used, healthcare providers should explore the integration of more reliable and professional translation services. This could include partnerships with translation companies or the development of specialised healthcare translation apps. Policymakers should promote culturally sensitive practices within healthcare settings. This includes understanding the diverse backgrounds of international students and tailoring healthcare services to meet their specific needs. Ongoing research should be encouraged to explore the experiences of international students from various cultural backgrounds. This will help identify unique challenges and inform the development of targeted solutions to improve healthcare access and outcomes. Awareness campaigns should be launched to inform international students about available resources, such as interpreter services and multilingual support. This can empower students to seek help when needed and navigate the healthcare system more effectively. By implementing these recommendations, healthcare institutions can significantly improve the quality of care for international students in Budapest, ensuring equitable access to healthcare services and enhancing overall patient satisfaction.

### **Limitations and recommendations for further research**

There are some limitations to consider in this small-scale research. Firstly, it had limited stakeholder involvement as it only included international students and did not consider the perspectives of administrators, healthcare service providers, and local people. Additionally, the study participants were only from Asia, Africa and the Middle East. So, there is a possibility that students from other countries and cultural backgrounds may face different challenges and have different suggestions for the language barrier in Hungary's public healthcare system. However, this study can serve as a starting point for future large-scale research.

Our study primarily involved international students to address specific challenges they face in navigating the public healthcare system in Budapest. Here are the reasons for this focus and suggestions for future research:

**Unique Vulnerabilities:** International students represent a distinct demographic that often encounters unique vulnerabilities, such as language

barriers, cultural differences, and unfamiliarity with the local healthcare system. By concentrating on this group, the study aims to uncover specific issues that may not be as pronounced in the general population.

***Diverse Experiences:*** The participants in the study came from various academic backgrounds and had different lengths of stay in Hungary, providing a broad spectrum of experiences. This diversity allows for a comprehensive understanding of the challenges faced by international students, which can inform targeted interventions.

***Direct Impact on Healthcare Access:*** The study highlights how language barriers directly affect the quality of care and patient satisfaction among international students. By focusing on their experiences, the research can pinpoint areas for improvement in healthcare services that cater specifically to this demographic.

### **Future Research Opportunities**

***Involvement of Healthcare Providers:*** Future research could benefit from including healthcare providers' perspectives. Understanding their experiences and challenges when communicating with international students can provide valuable insights into the systemic issues that contribute to language barriers and miscommunication.

***Exploring Provider Training Needs:*** Investigating the training needs of healthcare providers regarding cultural competence and language sensitivity could lead to improved communication strategies. This could enhance the overall healthcare experience for international students and ensure that providers are better equipped to meet their needs.

***Longitudinal Studies:*** Conducting longitudinal studies that track the experiences of international students over time, alongside feedback from healthcare providers, could reveal trends and changes in healthcare access and satisfaction. This approach would help in assessing the effectiveness of implemented strategies and policies aimed at improving healthcare equity.

***Comparative Studies:*** Future research could also compare the experiences of international students in different countries or cities. This comparative analysis could identify best practices and successful interventions that could be adapted to improve healthcare access for international students in Budapest and beyond.

By expanding the research scope to include healthcare providers, future studies can create a more holistic understanding of the healthcare landscape for international students, ultimately leading to more effective solutions for improving healthcare equity.

Subsequent studies can explore what specific steps can be taken to address language barriers and improve communication strategies within the public healthcare system for international students in Budapest. Moreover, it would also be valuable to investigate the potential indirect consequences on health due to language barriers and delays in seeking medical attention for international students in Budapest's public healthcare system. Finally, to gain different perspectives, research should be done to study administrative challenges related to Hungarian signage and navigate administrative processes to enhance the accessibility of healthcare services for international students.

### **Contribution to Healthcare Equity for International Students**

This study significantly contributes to ongoing efforts to improve healthcare equity for international students in several ways:

***Identification of Language Barriers:*** By highlighting the specific language barriers faced by international students in Budapest, the study provides a clear understanding of the challenges that hinder access to quality healthcare. This identification is crucial for developing targeted interventions to address these issues.

***Insights into Patient Experiences:*** The narratives collected from participants reveal the real-life experiences of international students navigating the healthcare system. These insights can inform healthcare providers about the complexities of communication and the need for improved strategies to enhance patient-provider interactions.

***Recommendations for Policy Changes:*** The study outlines actionable recommendations for policymakers and healthcare institutions, such as implementing mandatory interpreter services and enhancing training for healthcare staff. These recommendations aim to create a more inclusive healthcare environment, ultimately promoting equity for all patients, regardless of their language proficiency.

***Focus on Cultural Sensitivity:*** By emphasizing the importance of cultural sensitivity in healthcare practices, the study encourages healthcare providers

to consider the diverse backgrounds of international students. This focus can lead to more personalized care and better health outcomes for this demographic.

***Foundation for Future Research:*** The findings of this study lay the groundwork for further research into the healthcare experiences of international students. Continued exploration in this area can help refine strategies and policies aimed at improving healthcare access and equity for this vulnerable population.

Overall, this study serves as a vital resource for stakeholders aiming to enhance healthcare equity for international students, ensuring that their unique needs are recognized and addressed within the public healthcare system.



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