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**How Are Language Barriers Bridged in Hospitals?:
A Systematic Review**

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I acknowledge the Garigal and Wallumattagal Clans of the Darug Nation, Traditional Custodians of the lands on which this thesis was written, and I pay my respects to Elders past, present and emerging. I extend that respect to all Aboriginal and Torres Strait Islander peoples.

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ABSTRACT

This thesis investigates how language barriers experienced by linguistic minority patients are bridged in hospital settings. Linguistically accessible healthcare is a crucial part of optimising health outcomes for hospitalised patients (Malevanchik et al., 2021; Portillo et al., 2021) and linguistic minority patients often face worse health outcomes than their majority peers (Jacobs et al., 2020; Ortega, 2020). Against this background, this study examines, first, the types of language barriers that exist in hospitals. Second, it asks how hospital staff assess a linguistic minority patient's language proficiency and how they identify the need for a multilingual communication strategy. Third, it examines what current tools and language support strategies hospitals use to bridge language barriers, and what their strengths and limitations are. This is done through a systematic literature review of 50 studies published between 2018 and 2023.

Findings show that much of the current literature examines spoken language barriers between patients and hospital staff. These are overwhelmingly bridged through the provision of interpreting services, whether by professional or ad hoc interpreters, in person or remotely. The key problem identified with consistent interpreting service provision relates to time constraints. Another reason for haphazard service provision lies in inconsistencies in the assessment procedures to identify a patient's linguistic proficiency and need for language support. The study also highlights the use of some novel assistive communication technologies.

Overall, this systematic literature review provides a detailed picture of the current state of hospitals' multilingual communication strategies. The study is a pilot for a PhD

project that aims to contribute to more inclusive linguistic practices in diverse hospital settings.

STATEMENT OF ORIGINALITY

I certify that the work in this thesis entitled “How Are Language Barriers Bridged in Hospitals?: A Systematic Review” has not previously been submitted for a degree or diploma in any university. I also certify that the thesis is an original piece of research and that it has been written by me. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signed 23 October 2023

GLOSSARY OF ABBREVIATIONS

Abbreviation or Term	Definition
CALD	culturally and linguistically diverse
ICU	Intensive Care Unit
LEP	limited English proficiency
LLP	limited language proficiency
NHS	National Health Service
SLR	systematic literature review

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1. Introduction

1.1 Research Problem and Rationale

Recently, I was sitting at my desk at uni, getting ready to go home for the day, when another student approached my desk looking frightened and clutching her stomach. I asked her if there was anything I could do for her and soon realised that she needed medical attention – she had recently had a surgical procedure and was wearing a temporary colostomy bag, but it was about to overflow and she did not have another one with her. There was no one else in the office, and I was the only person who could help her. I quickly asked her if I could take her to our university hospital, a 5-minute walk from our building, and she agreed. As we walked, I phoned ahead to the hospital and explained the state of the medical situation. However, the hospital receptionist that I spoke to told me she was unsure if the hospital had any colostomy bags. I was surprised to hear this as I had assumed that the receptionist would guide me and assure me that the student would soon be in safe hands. When we arrived at the hospital and walked through the reception doors, the lone receptionist pointed to the shuttered pharmacy doors next to her. “They just closed,” she said, sounding bored. “But this person needs medical attention,” I said, as I saw the student begin to quietly cry. The receptionist shrugged and said, “I don’t know what to tell you. I guess you could try knocking on the door.” I pounded my fist against the pharmacy door and a harried pharmacist yanked the door open. “*What?* We’re closed,” he spat. “I know, but this person needs a colostomy bag,” I told him, but he shook his head. “We don’t have that in stock right now.” He began to close the door, so I shoved my arm between him and the door frame. “But she needs *help*. Tell me what to do.” He glanced at the student. “I guess you could try the 5th floor and see if anyone is there.” He closed the door. The

student began to cry in earnest, and I grabbed her hand and led her to the lift. When we arrived on the 5th floor, a dimly lit area leading to admitted patients' rooms, I sat the student down on the floor and ran through the hallways until I found a nurse. I explained the situation, and she said, "Yeah, I don't know if we have what you need." I stared at her. "Then I need you to *check*. Please. This person needs medical help." I followed the nurse until she agreed to check for a colostomy bag and, thankfully, she found what the student needed.

The student received the care she needed and avoided a true medical emergency, but for days I could not stop thinking about how hard I had been forced to fight through layers of medical red tape just to advocate for her. Over the next few days, I had a thought – what if this student hadn't spoken English? What if I hadn't spoken English? It had been difficult enough to insist on proper medical attention for her, but what if we had been trying to do that in a language that neither of us was highly proficient in? Would I have been able to advocate for her, or would we have been offered an interpreter to facilitate multilingual communication for us? Would the attendee have had a positive health outcome, or would we have been dismissed as soon as we entered the reception area?

These are exactly the types of questions that I have pondered as I have conducted the study that has resulted in this thesis. What types of language barriers do linguistic minority patients experience in hospitals, and how does a hospital decide that a linguistic minority patient needs a multilingual communication strategy? What tools or protocols do hospitals put in place to ensure that hospital staff and healthcare providers can communicate with patients who are not proficient in the majority language, and how are they used? This thesis will investigate these questions in order to synthesise existing

knowledge of how linguistic minority patients navigate the hospital environment, as well as highlight gaps in that knowledge.

1.2 Migration, Language and Healthcare Communication in Diverse Societies

Situations where patients and healthcare providers do not share a common language are unlikely to be purely hypothetical in Australia. Contemporary Australia is a multicultural nation of Indigenous peoples, settlers from the British Isles and their descendants, and an increasing number of immigrants from elsewhere and their descendants (Australian Bureau of Statistics, 2022). In addition to being racially and culturally diverse, Australia is also a place of linguistic diversity. Mandarin is the most commonly spoken language after English with more than 685,000 people speaking it at home, and other prominent community languages include Arabic (367,159 speakers), Vietnamese (320,758 speakers), Cantonese (295,281 speakers) and Punjabi (239,033 speakers) (Australian Bureau of Statistics, 2021). Today, 2.76% of people living in Australia self-assess as “speaking English not well or not at all” (Australian Bureau of Statistics, 2021).

Australia is not alone in being a linguistically diverse country. According to the 2022 World Migration Report, it is estimated that there were around 281 million migrants across the world in 2020, making up 3.6% of the world’s population - an increase from the estimated 2.81% in 1995 (International Organization for Migration, 2022). Increases in global migration have naturally meant that countries have also experienced linguistic changes as people move to a country where their primary language is not always spoken widely (Blommaert & Rampton, 2011), including in countries like Australia where English dominates, either officially or unofficially. In the USA, for example, about 8% of the

population currently self-assesses as speaking English “less than very well”(Dietrich & Hernandez, 2022).

Though many countries have significant multilingual populations, these populations’ language needs are not always recognised by governmental or bureaucratic institutions (Minority Rights Group International, n.d.). Even when language needs are recognised and institutional policies exist to address them, actual implementation of these policies can be uneven or haphazard, and this can be especially true when these policies exist within the context of healthcare (Krystallidou et al., 2021). This disconnect has been shown to exist when healthcare institutions convey important community information to multilingual populations (Abbasi, 2020; Haimovich & Márquez Mora, 2020), when linguistic minority patients need to communicate with medical professionals in a general practitioner setting (Al Shamsi et al., 2020) and when there is a linguistic mismatch between patients and staff in hospitals (van Rosse et al., 2016). It is precisely this area of multilingual communication in hospitals which is the central focus of this thesis.

How do hospitals ensure that linguistic minority patients are identified and given access to multilingual communication strategies for the duration of their hospital stay? Which language barriers do linguistic minority patients come across while in hospital, and what are the advantages and challenges to utilising these multilingual communication strategies?

1.3 Thesis Structure

This chapter has outlined the research problem and rationale against the background of increasing linguistic diversity in Australia and internationally. In Chapter 2, I review literature that is relevant to this study. The chapter discusses existing knowledge on

the health disparities that hospitalised linguistic minority patients face even though several countries have existing legislation and policies to ensure that these patients have the right to healthcare in a language they can understand. I then examine how the concept of language proficiency is not clearly defined and how this can lead to a hospitalised patient's language needs going unrecognised. Finally, I identify the gaps in knowledge that form the basis for my research questions.

In Chapter 3, I detail the methodology used for this study. The chapter begins with the justification of my decision to conduct a systematic literature review before describing the keyword search strategy and databases used to find the studies that were included. This is followed by a statement of the study eligibility criteria, including the inclusion/exclusion parameters. After this, I detail the article selection and screening processes as well as the data coding, synthesis and analysis processes.

Chapter 4 discusses the findings related to the first research question – *What types of language barriers exist between patients and staff in hospitals?* I show that spoken language barriers, where patients and hospital staff cannot understand what each other are saying, were the most commonly reported barrier, followed by written language barriers. I then discuss the implications of these results, namely that both spoken and written language barriers in hospitals often co-occur with other lesser-reported barriers, and that all of these combined result in communication breakdowns that negatively impact both linguistic minority patients and their healthcare providers.

In Chapter 5, I examine the findings related to the second research question – *How do hospital staff assess a patient's language proficiency and need for a multilingual communication strategy?* I show that, notably, this study discovered that much of the current literature does not answer this question at all. The literature that does examine this

question most often points to hospital admission and triage staff as the people responsible for determining a patient's proficiency in the institutional language and if they need a multilingual communication strategy.

Chapter 6 details findings relative to the most-examined type of language support within hospitals, the provision of interpreting services. I show that human interpreting services of all kinds are the most utilised way of providing language support, and I explain how their language services are used within hospital settings. After this, I discuss time constraints, which are the most-cited challenge to utilising an interpreter.

In Chapter 7, I turn to written translated hospital documents, such as discharge summaries, and translation apps. I explain the roles that these tools and strategies play in facilitating multilingual communication in hospitals.

This thesis concludes in Chapter 8 by revisiting the research questions and setting out the thesis' contribution to knowledge in multilingual healthcare communication. I close with suggestions on how I plan to extend this research in my PhD.

2. Literature Review

2.1 Overview

To approach the question of how hospitals manage linguistic diversity and provide multilingual communication strategies to linguistic minority patients, this chapter reviews the literature that examines this topic. I begin the chapter by interrogating the negative effects of language barriers in hospitals and how various laws and policies have been instituted in order to mitigate these effects. I then discuss how the existence of these policies does not always translate to their actual consistent implementation with linguistic minority patients. After this, I examine how “language proficiency” (and specifically English language proficiency) is defined and how this definition helps (or fails to help) hospital staff identify patients who need language support services. Finally, I conclude this chapter by identifying the gaps in current knowledge that my research questions are designed to fill.

2.2 Linguistic Minorities in Hospital Settings – Consequences of Language Barriers

As discussed in this thesis’ introduction, the rising rate of migration around the world has led to an increased need to examine how institutions communicate with linguistic minorities (Segalowitz & Kehayia, 2011). This is because this potential for linguistic mismatch can create barriers to accessing majority language institutional services (Piller, 2022), including equitable access to healthcare (Heath et al., 2023). This can include general practitioner healthcare, but studies have shown that this also applies to healthcare in hospitals (Davis et al., 2019; Garcia et al., 2023). Hospital healthcare can consist of “high-stakes” medical encounters like surgical procedures, cancer treatment, emergency departments, long-term pain management and treatment of infectious diseases, among many other types of services (Tang et al., 2014). Hospitals are unique in their fast-paced

environments, and language access policies that suffice in a more predictable general practitioner setting, such as booking an interpreter days or weeks in advance of an appointment, may not function as well within hospitals where immediate communication between patient and healthcare provider is often required (Blay et al., 2019). Ensuring that linguistic minority patients are able to communicate with their hospital healthcare providers is vital because it is these patients that often experience negative health outcomes when receiving healthcare in hospitals, and these outcomes often occur *because of* language barriers between patients and hospital staff (Krampe et al., 2022). For example, compared to linguistic majority patients, studies have shown that hospitalised linguistic minority patients are at increased risk of paediatric emergency room revisits (Portillo et al., 2021), sepsis mortality (Jacobs et al., 2020), longer length of stay (Manuel et al., 2022), post-discharge difficulties (Malevanchik et al., 2021), a lack of safe-discharge instructions (Choe et al., 2021), lessened likelihood of receiving comfort measures in the ICU (Barwise et al., 2018), unnecessary diagnostic testing (Schulson et al., 2018), receiving opioids (Dixit et al., 2020), COVID-19 mortality (Ortega, 2020), and more.

These health disparities of hospitalised linguistic minorities are a subject of concern in various countries, and several nations have put in place policies that aim to ensure that all people have access to healthcare in a language they can understand. For example, in the USA, Title VI of the 1964 Civil Rights Act “prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance” (The United States Department of Justice, 1964), and “national origin” has consistently been interpreted as incorporating “language” as well (Chen, 2007). Therefore, any health organisation that receives “federal funding such as (but not limited to) Medicaid, SCHIP and Medicare payments, NIH grants, and CDC monies” (Chen, 2007) has a legal responsibility to

provide linguistically accessible healthcare. This includes healthcare accessed in public hospitals.

However, policy and practice do not always match. Studies from the USA have shown that linguistic minority patients who need written documents translated into other languages do not always get them (Barreto et al., 2021; Davis et al., 2019), and these patients do not always have consistent access to interpreter services (Cheng et al., 2021; Choe et al., 2019; Lion et al., 2021). Likewise, in the UK, governmental guidance and National Health Service (NHS) policy state that linguistic minorities must be consistently offered interpreting and translation services in all NHS settings (NHS England, 2016), but studies have shown that linguistic minority patients do not always reliably receive these services (Ali & Watson, 2018; Rayment-Jones, 2021). This is also a pattern that is seen in other countries that have language rights laws and policies, such as Switzerland (The Federal Council, 2007), Canada (Government of Canada, 1985), Norway (Lovdata, 2022), or South Africa (South African Government, 2012). In short, even if a language access policy *exists*, this does not always mean that it will be consistently implemented, and linguistic minority patients may not actually receive healthcare in a language they can understand.

Australia is another example of a highly multilingual nation where linguistic minority patients have certain language rights related to their healthcare. The Australian Commission on Safety and Quality in Health Care has mandated that Australian hospitals must abide by the Australian Charter of Healthcare Rights (Australian Commission on Safety and Quality in Health Care, 2020). One of the points that the charter lays out is that all hospitalised patients are entitled to receive information about their health care that they can understand, and this includes being given access to an interpreter and “information translated into another language” (Australian Commission on Safety and Quality in Health

Care, 2020, p. 20). However, as is the case in many other countries, implementation of the policy sometimes falls short. Studies have shown that in Australia and throughout the world, hospital staff may have difficulty consistently arranging interpreters for linguistic minority patients. Barriers to doing so include the financial cost to the medical institution, a shortage of time, and lack of training on how to arrange provision of professional interpreter services, especially for languages with low representation in the population (Blay et al., 2019; Buser et al., 2022; White et al., 2018). In Australia, even when a professional interpreter can be scheduled, the common need to book the service days or weeks in advance may be unrealistic in a dynamic and unpredictable hospital environment (Blay et al., 2018). Even if interpretation services can be booked and used, healthcare providers may not be fully trained in interpreting best practices and transcultural competency, and this can lead to communication breakdowns (Cho, 2022; White et al., 2019). In sum, even if linguistic minority patients are accorded rights to multilingual communication, implementation of multilingual service provision may fall short.

2.3 Defining Language Proficiency and Assessing the Need for a Multilingual Communication Strategy in a Hospital Setting

In countries with laws and policies that mandate equal linguistic rights for all people, hospital staff are expected to provide medical care to linguistic minority patients in a way that prioritises language-inclusive communication. However, there is no widely accepted existing framework that specifies exactly how to do that, whether through interpreters, translated written documents, or a combination of both (Davis et al., 2019; Wurth et al., 2018). Part of the reason why it is so difficult to establish consistent protocols and frameworks for hospitals to use when communicating with linguistic minorities is because just identifying a linguistic minority patient is not always easy (Allardt, 1984).

Similarly, even more complicated is defining a person's language *proficiency* (Piller & Bodis, 2022). Most of the literature that examines the concept of language proficiency does so from an educational perspective and questions how students' foreign or second language skills are evaluated within an educational institution (Fleckenstein et al., 2016; Piller & Bodis, 2022). In this context, the idea of being "proficient" in a language is often thought of interchangeably with "fluent", "bilingual", "competent", etc., but there is no objective definition of what these words mean in terms of a student's level of language output (Iwashita et al., 2008). In addition, the act of "rating" a person's language proficiency does not occur in a vacuum. People, whether examiners or teachers or everyday interlocutors, evaluate and interpret the language proficiency of others based on a host of subjective factors, including implicit or explicit bias (Rosa, 2016). Difficult and problematic though it may be to definitively categorise students' foreign and second language proficiency levels, what is even less understood is how this is done outside of educational contexts. In particular, there is very little known about how linguistic minority patients' levels of language proficiency are assessed by their healthcare providers or hospital staff. Because of this lack of research showing how linguistic minority patients are identified within a hospital setting, it is unclear what, if any, framework hospitals currently use to assess their patients' language proficiency and determine the need for a multilingual communication strategy.

Some organisations have attempted to define "language proficiency" in the hope that this will allow people, including hospital staff, to more easily identify those that may need a multilingual communication strategy, including access to interpreters or translated written materials. In 2000 in the USA, President Bill Clinton signed Executive Order 13166 which, in part, first popularised the term "limited English proficiency" (LEP), a term that is still widely used in the USA today (Ortega, 2021). In 2002, The Interagency Working Group

on Limited English Proficiency, a division of the United States Department of Justice, officially defined “limited English proficiency” as “individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English” (The Interagency Working Group on LEP, 2002, p. 1). However, this definition does not specifically address exactly what a “limited ability” constitutes (Malevanchik et al., 2021). While the USA uses “LEP” to describe linguistic minorities, Australia often uses the term “CALD”, or “culturally and linguistically diverse” (Australian Institute of Health and Welfare, 2018). While this phrasing may seem to be operating from less of a language deficit model than the term LEP, there is still no consensus on a definition of what it actually means to be CALD (Piller, 2013), and the term is not used consistently (Pham, 2021). In the realm of healthcare specifically, various departments have attempted to explain how to identify a linguistic minority or person with limited language proficiency (LLP). A policy directive of the Australian New South Wales government states that anyone who is not “fluent in English” must be granted access to interpreter services when engaging with public sector agencies (including hospitals) and defines “not fluent in English” as having “hesitation or difficulty in understanding and communicating in English” (New South Wales Government, 2017, p. 4). However, “hesitation” or “difficulty” are not further defined and it is obvious that “hesitation or difficulty in understanding and communicating” may manifest in a wide range of forms and be indicative of a wide range of issues, including, but not limited to, language proficiency. The Australian Charter of Healthcare Rights recommends that linguistic minority patients request an interpreter if they have “difficulty speaking or understanding English” (Australian Commission on Safety and Quality in Health Care, 2020, p. 20), but again the vagueness of “difficulty” persists. The Australian Centre for Culture, Ethnicity and Health provides somewhat more in-depth guidance on when a person might

have LLP, stating that an interpreter may be needed when a person “requests it; speaks English as a second language and is in a stressful, complex or unfamiliar situation; is difficult to understand; responds only in a limited way; relies on family or friends to interpret; wishes to communicate in his or her preferred language; or cannot grasp or respond to questions in English” (Centre for Culture Ethnicity & Health, 2014, p. 1). Though this definition is certainly longer than the definition for “not fluent in English”, terms like “difficult to understand”, “limited” or “cannot grasp” are left undefined. This lack of definition and consistent guidance on how to assess a patient’s linguistic proficiency can mean that linguistic minority patients who need language support go unrecognised. What is more, the lack of definition means that those who are responsible for assessing a patient’s language proficiency have no clear guidance on how to do so. This, in turn, ensures that any language assessment that takes place is an ideological act subject to the assessor’s own bias and assumption of a patient’s language proficiency.

2.4 Research Questions and Study Aims

The literature reviewed here demonstrates that hospitals throughout the world regularly encounter the need to manage multilingual communication between linguistic minority patients and hospital staff. Laws and policies exist in some countries that, in theory, mandate that hospitals provide linguistic minority patients with healthcare in their preferred language. However, the existence of these policies does not always translate into their consistent implementation. This is, in part, because assessing a patient’s level of majority language proficiency is not always a straightforward exercise, and there is no widely accepted protocol or procedure that hospitals use to a) assess a patient’s need for a

multilingual communication strategy and then b) put one or more of these strategies into place.

However, the current literature rarely addresses if tools and strategies other than interpreters are used to support a linguistic minority patient's language needs and, if other tools are used, what their advantages and challenges are. Furthermore, it is not yet known if the COVID-19 pandemic necessitated a greater reliance on digital communication within hospitals. In addition, it is unknown if patients and staff only need multilingual communication strategies for spoken communication or if other types of language barriers may also exist in a hospital environment. Finally, it is not known *how* hospitals assess a patient's need for a multilingual strategy. This MRes thesis, therefore, aims to explore the ways in which hospitals currently facilitate multilingual communication between patients and staff by asking the following research questions:

- 1) What types of language barriers exist between patients and staff in hospitals?
- 2) How do hospital staff assess a patient's language proficiency and need for a multilingual communication strategy?
- 3) What current tools/strategies do hospitals use to overcome these barriers and provide inclusive communication?
- 4) What are the advantages and challenges to using these tools/strategies and implementing inclusive communication strategies?

The research questions will be answered on the basis of a systemic literature review, as I will explain in the next chapter.

3. Methodology

3.1 Overview

This methodology chapter sets out the methods used in this study. I begin with a justification of my decision to conduct a systematic literature review (SLR) before describing the keyword search strategy and databases used to find the studies that were included in this SLR. This is followed by a statement of the study eligibility criteria, including the inclusion/exclusion parameters. After this, I will detail the article selection and screening processes as well as the data coding, synthesis and analysis processes.

3.2 Approach

The approach this MRes thesis adopted was a systematic literature review (SLR) of studies published from 2018 to 2023 that examined how hospitals manage linguistic diversity among patients and staff on a day-to-day basis. This approach was chosen for a number of reasons. To begin with, a systematic literature review “compiles published research on a topic, surveys different sources of research, and critically examines these sources” (Jahan et al., 2016, p. 1). An SLR methodology (PRISMA, 2020) allows data-gathering to be “reliable and repeatable” (Xiao & Watson, 2019, p. 109) and “uses explicit and reproducible methods to systematically search, critically appraise and synthesise” data gathered from a clearly formulated research question or questions (Gopalakrishnan & Ganeshkumar, 2013, p. 10). SLRs enable a researcher to capture a large amount of data available from a specific time period and analyse result patterns. This provides a detailed overview and synthesis of an existing body of knowledge as well as providing scope for further research (Williams et al., 2021). Another advantage of the SLR approach is that it can be valuable to policy makers, healthcare providers and institutional researchers who

might not have the time to source and read a wide range of studies and would benefit from having research synthesised in one place (Mulrow, 1994), especially research that can be used to inform future institutional policy and practices (Munn et al., 2018).

In the case of this thesis, an SLR methodology was chosen because the data gathered through an SLR can provide a baseline from which to identify gaps in the literature and conduct future research to narrow those gaps (Mulrow, 1994). Data from an SLR also provides a broad, comprehensive look at how a field has examined or is examining a particular research question (Williams et al., 2021). In addition, an SLR allows a researcher to view data within a restricted time period, and this aspect was important as this thesis aims to examine hospitals' current-day practices. This was accomplished by restricting the searched studies to only those that have been published in the last five years (2018-2023). I wanted to confirm current hospital language policy practices as well as identify any new practices that have come about in the last 5 years due to COVID, advances in technology, changes in staffing, etc.

An SLR methodology was particularly conducive to answering my research questions based on not only hospital but also national contexts. I was able to choose whether to restrict the studies' countries of origin in my searches, and I chose not to. This was done deliberately as I wanted to understand broadly how hospitals all over the world facilitate multilingual communication. While I personally only had the capacity to read studies that were in English, several of the studies that matched my inclusion criteria came from countries other than Australia (where I live) or the USA (where I was born and raised).

3.3 General SLR Methodology

After considering all of the above reasons for choosing an SLR as a research approach, I used the PRISMA 2020 methodology guide to inform my specific research methodology (PRISMA, 2020). PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is a guide that indicates the minimum number of items that must be reported in systematic reviews and meta-analyses. PRISMA also lays out the following general methodology for conducting SLRs:

- 1) *Search Strategy and Information Sources* – Decide which databases and keywords will be used to search for studies.
- 2) *Eligibility Criteria* – Establish which criteria must be met in order for a study to be included in or excluded from the review.
- 3) *Selection Process and Screening* – Select studies from the databases based on the eligibility criteria. Then screen these studies' titles and abstracts to determine if they might address the research questions.
- 4) *Data Collection Process and Data Items* – Read the full texts of the studies that have been gathered. Eliminate any texts as needed based on the exclusion criteria. After this initial reading of the full texts, read them again and extract the data that answers the research questions.
- 5) *Synthesis and Analysis* – Determine which theoretical framework will be used to synthesise and analyse the results. Present the extracted data in response to the research questions.

3.4 Search Strategy & Information Sources

I developed this systematic search strategy with the assistance of my supervisor. PubMed, a database of biomedical and life sciences references, was selected as the primary

database to be searched because of its high concentration of interdisciplinary literature related to healthcare contexts. Google Scholar, another database of scholarly literature across all disciplines, was then searched as a secondary database to capture any relevant studies that may have been missed in the PubMed search. The PubMed search included two keyword searches using the terms *“limited English proficiency hospital”* and *“linguistically diverse” hospital*. The Google Scholar search keywords were *“limited English proficiency” “hospital” “language” “language barrier”* and *“healthcare access”*. The decision to search different keyword combinations was based on how the two databases picked up on the keywords that were searched. For example, the PubMed search yielded articles when searching *“limited English proficiency hospital”*, but to ensure that I had not missed anything, I separated the terms in the Google Scholar search (*“limited English proficiency”* and *“hospital”*). Both searches were run in April and May of 2023. The PubMed database yielded 350 references and Google Scholar yielded an additional 192 references for a total of 542 studies to be considered and screened.

3.5 Eligibility Criteria

After the initial keyword searches, I then screened the studies by title, abstract and then by full text. Studies included in the review met the following inclusion criteria:

Inclusion

- 1) Study examines at least ONE (1) of the following research questions:
 - a. What types of language barriers exist between patients and staff in hospitals (i.e., spoken, written, academic literacy, health literacy, etc.)?
 - b. How do hospital staff assess a patient’s language proficiency and need for a multilingual communication strategy?

- c. What current tools/strategies do hospitals use to overcome language barriers between patients and staff and provide inclusive communication?
 - d. What are the advantages and challenges to using these tools and implementing inclusive communication strategies?
- 2) Study is in English (the reason being that English is the language I am most proficient in)
 - 3) Study is peer-reviewed
 - 4) Study has been completed and was published between 2018-2023

Studies excluded from the review met the following exclusion criteria:

Exclusion

- 1) Study does not examine at least ONE (1) of the research questions
- 2) Study is, itself, a systematic review or meta-analysis
- 3) Study is not peer-reviewed
- 4) Study is not available as a full text for open access or through Macquarie University Library
- 5) Study is not available in English
- 6) Study is ongoing
- 7) Study is a part of a student's thesis
- 8) Study does not take place in a hospital
- 9) Study only describes training received by hospital staff

3.6 Selection Process & Screening

The selection and screening process involved a number of steps that I followed in order to decide on the studies that would be included in this SLR, and I will detail that process here. As seen in the PRISMA Flow Chart in Figure 1, the keyword searches yielded a total of 542 studies. Of these studies, 182 were excluded based on their titles alone (usually because the titles were describing studies that only looked at medical contexts and had nothing to do with language or multilingual communication). The remaining 360 studies were imported into Covidence, an online screening and data extraction platform used by researchers who are conducting systematic literature reviews, which automatically removed 7 duplicates. Two hundred and fifty-six studies were then excluded based on a lack of eligibility criteria (or an addition of exclusion criteria) found in these studies' abstracts, and the 88 remaining studies were assessed for full-text eligibility. Of those, 38 studies were excluded because no element of the four research questions were addressed ($n = 22$), the study did not take place in a hospital ($n = 12$), the study was not peer-reviewed ($n = 1$), or the study was a narrative and not an independent study ($n = 1$). This left 50 total studies for inclusion in the systematic review, and the full list can be seen in Appendix A.

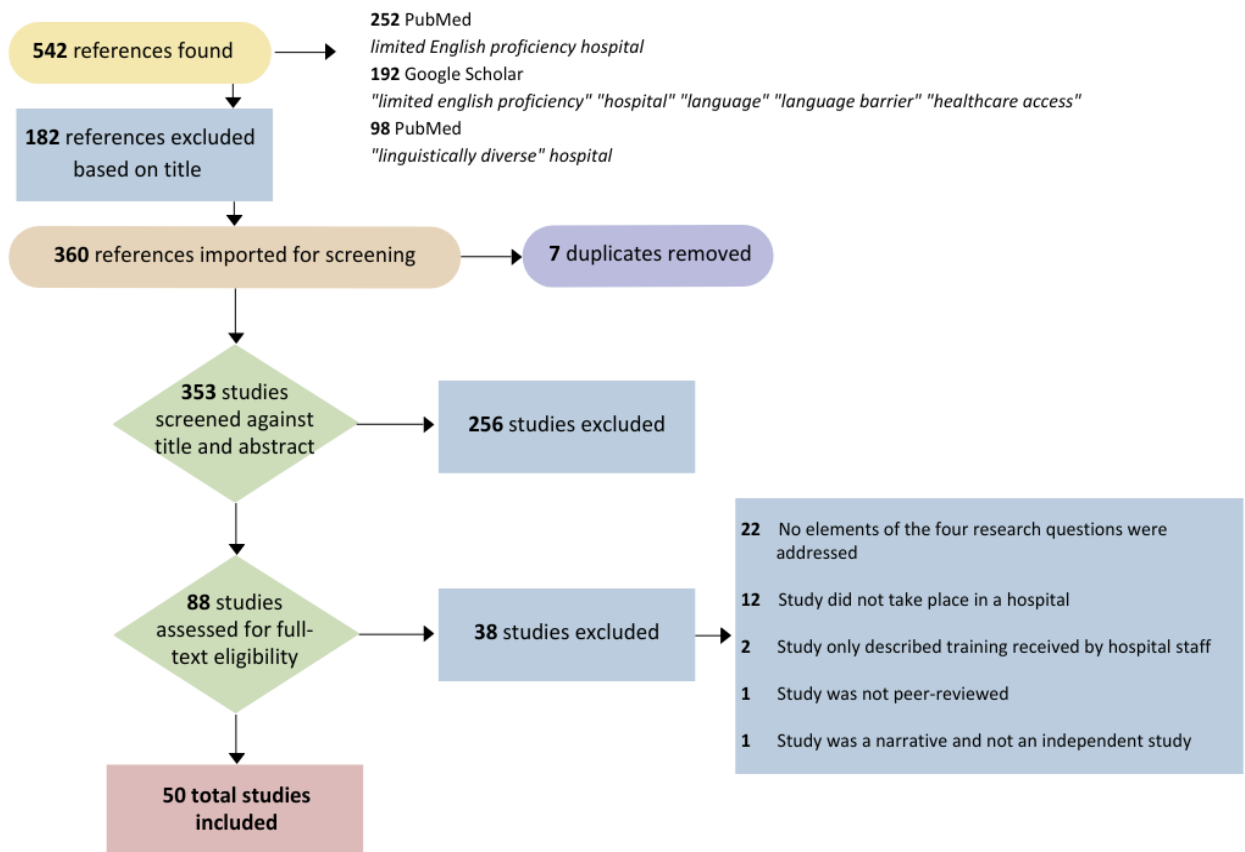


Figure 1
PRISMA Flow Chart

I conducted the screening process in Covidence, and then this process was moderated in a group session with 8 members of the Language on the Move research team (See Appendix B – Minutes of Moderation Session). At the end of the moderation, the panel was in full agreement that all 50 of the articles that the author screened and presented were suitable for inclusion in the systematic review.

3.7 Data Collection Process & Data Items

I read the full texts of the 50 studies and noted all the studies' responses to the research questions in a spreadsheet. The responses to Research Questions 1, 2 and 3 did not require coding but rather quantitative reporting (See Appendix C – Data Extraction

Reporting Example). The responses to Research Question 4 did require coding and were coded as “CHALLENGE” or “ADVANTAGE”. This coding scheme is presented in Appendix D.

The same data was extracted from each study and included: study title, author(s), year of publication, country where study took place, keywords searched, database searched, aim of study, data collection method, inclusion criteria, type of language barrier noted, how hospital staff assessed a patient’s language proficiency and need for a multilingual communication strategy, tool or strategy that the hospital used to overcome language barriers between staff and patients and noted advantages/challenges to using these tools/strategies.

3.8 Data Synthesis and Analysis

Thematic analysis (Braun & Clarke, 2012), an analytical framework that examines patterns of meaning within data points, was used to identify and categorise qualitative data that answered Research Question 4 - *What are the advantages and challenges to using these tools and implementing inclusive communication strategies?* This was done by following Braun and Clarke’s phase approach to thematic analysis:

Phase 1) Familiarising yourself with the data

I read and re-read each of the 50 studies multiple times and took detailed notes on the studies’ observations of any advantages and/or challenges to using the multilingual communication tools they were evaluating. In order to mitigate any data extraction or reporting bias, I directly copied each study’s answers to the four research questions into a spreadsheet and consistently referred back to that when coding within the Covidence template.

Phase 2) Generating initial codes

Using the detailed notes, a number (1-22) was assigned to correspond with the major *challenge* themes that were identified while reading the full texts of all the studies. A letter (A-K) was then assigned to correspond with major *advantage* themes that were identified. This allowed the data to be coded and organised in a systematic way across all 50 studies.

Phase 3) Searching for themes

I then used these codes to create a data coding template in Covidence. The required data was then entered into the template for each of the 50 studies as seen in Appendix E. The number of times that a code appeared for each study was then tallied, allowing overarching themes to emerge. After this data was coded by theme, it was exported from Covidence into a data synthesis spreadsheet so that all data could be organised as shown in Appendix E.

Phase 4) Reviewing potential themes

After the data was organised by study and research question, this spreadsheet was imported into Tableau, an online visual analytics platform. From there, the coded data was checked against the original data extraction spreadsheet for accuracy. After ensuring the accuracy of all research question data points, Tableau was used to visually display results of individual studies and syntheses, the results and analysis of which will be discussed in Chapters 4-6. Overarching themes, based on how many times a code was assigned to a piece of data that described an advantage or challenge of using a multilingual tool, were then able to be corroborated by checking them against the original data.

Phase 5) Defining and naming themes

Finally, overarching themes regarding the advantages and challenges to utilising a multilingual communication service/tool in a hospital setting were identified. These themes will be used in subsequent chapters of this thesis to explain the data that was gathered in Phase 1.

4. Types of Language Barriers That Exist Between Patients and Staff in Hospitals

4.1 Overview

This chapter discusses the findings related to the first research question – *What types of language barriers exist between patients and staff in hospitals?* I will show that spoken language barriers, where patients and hospital staff cannot understand what each other are saying, were the most commonly reported barrier, followed by written language barriers. This chapter will first provide a quantitative overview of the findings before describing the forms that the most common language barriers take. Finally, I will discuss the implications of these results, namely that both spoken and written language barriers in hospitals often co-occur with other lesser-reported barriers, and that all of these combined result in communication breakdowns that negatively impact both linguistic minority patients and their healthcare providers.

4.2 Results

Of the 50 included studies, 86% ($n=43/50$) met the SLR inclusion criteria of describing a type of language barrier that exists between patients and staff in hospitals, with the most common language barrier noted being a spoken one. In this case, “spoken” refers to a barrier in which the hospital staff member, patient or both could not understand what the other person was saying. In many of these cases, the services of an interpreter were required. A spoken language barrier was noted in 42 studies, as seen in Table 1.

The next most noted barrier was a written one. Nine studies found that this barrier existed, with 6 choosing to examine it, 3 examining it in the form of translated hospital discharge papers or written medical instructions to patients. Six studies noted health literacy barriers in which patients were described as having (or being presumed to have)

limited understanding of medical terminology or concepts in any language. Three studies noted the concept of technological literacy, with 2 studies stating that linguistic minorities often lack access to technology like computers and smartphones, and 1 study stating that a communication strategy was easy to use because it did not require the user to be technologically-savvy. Other barriers noted included hospital/healthcare system literacy (the way in which a patient utilises resources to navigate the bureaucracy of a medical system) and academic literacy, each appearing in 2 out of the 50 studies.

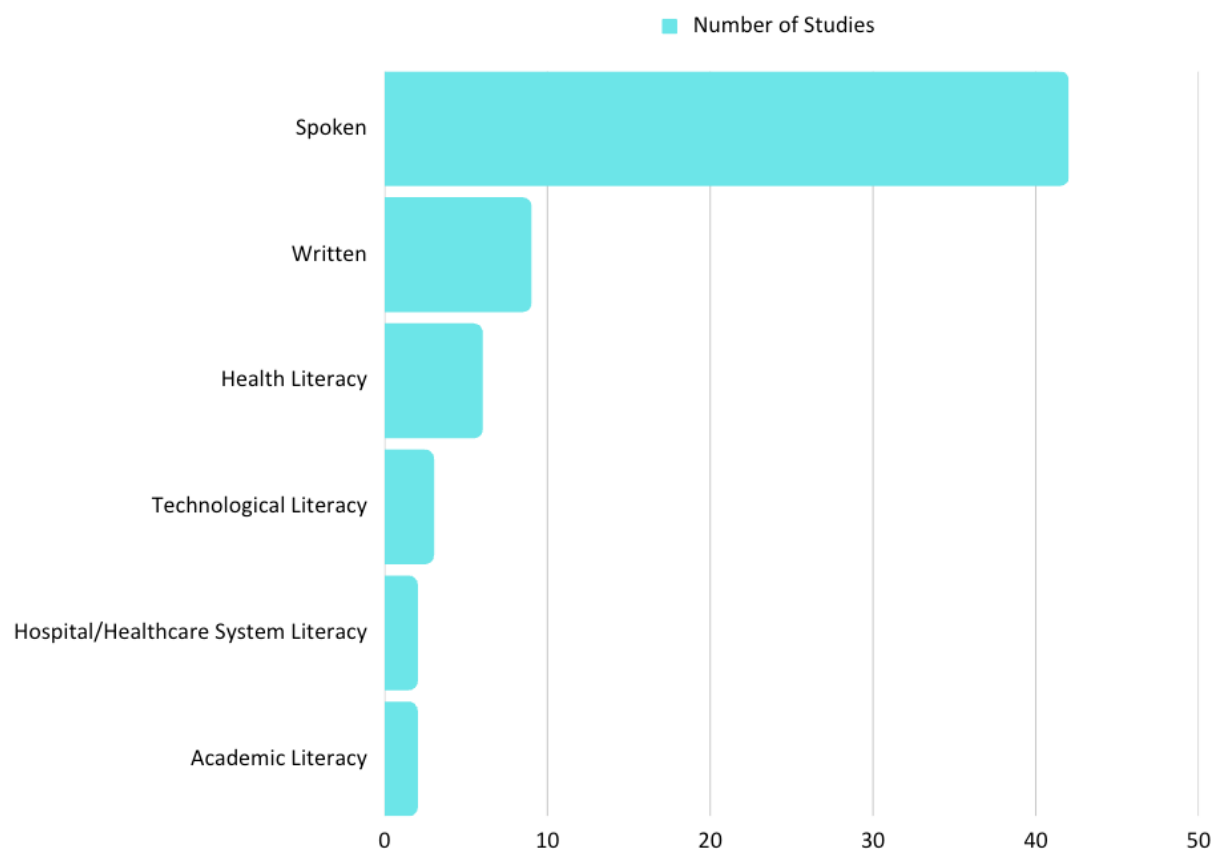


Figure 2
Language Barrier Type

4.3 Discussion

“Communication is the biggest part of our role. Isn’t it? And if you cannot communicate with your patient, it just creates lots of issues and affects patients’ experience of receiving care from caregivers like nurses.”

(Ali & Watson, 2018, p. e1156)

When examining types of language barriers that can occur in a hospital setting, it is important to understand exactly how those barriers can manifest and the effects they can have on both hospital staff and linguistic minority patients. Because the studies in this SLR were published between 2018 and 2023, the types of language barriers they examine are indicative of what hospitals in several countries throughout the world currently encounter on a day-to-day basis. In this section, I will discuss what spoken and written language barriers look like in hospitals as they were the most examined type of language barrier in the SLR studies. I will also discuss less noted but still present barriers and how they co-occur with spoken and written barriers – namely health literacy, technological literacy, hospital/healthcare system literacy and academic literacy.

As stated previously, spoken language barriers occur any time a linguistic minority patient and hospital staff member cannot understand what each other are saying. Spoken communication is vital in a hospital setting as an admitted patient may, according to one study, have contact with up to 18 people in their room over the course of just one hour (Cohen et al., 2012). These people can range from doctors to nurses to allied healthcare professionals to administrative staff and beyond. Spoken information is constantly being exchanged between the patient and hospital staff members during these encounters, including taking medical histories, obtaining informed consent, explaining medical procedures, discussing pain management, ordering meals, managing emergencies,

communicating information with family members, explaining and understanding discharge instructions and much more. It is crucial that patients understand what is being communicated during these events as well as having the chance to be understood themselves. This is because it is already well-documented that poor communication between patients and hospital staff members can lead to negative health outcomes for a patient, including medical mishaps (Sutcliffe et al., 2004), life-threatening complications (Tiwary et al., 2019) or even death (Nagpal et al., 2010).

Not only do patients suffer when they are unable to communicate verbally with their healthcare team, but the healthcare team struggles as well. Doctors, nurses and other allied healthcare team members can often lose valuable time in a fast-paced hospital environment while trying to understand a patient's needs without being able to speak with them. In addition, they may have to resort to ordering time-consuming and expensive medical tests to find out what is wrong with the patient if they are not able to take a detailed history. As stated by a healthcare provider participant in one of this SLR's studies:

"If you don't have the ability to communicate with the patient, it's really hard to even start and we end up over-investigating... and start acting on the results rather than on the patient's symptoms."

(White et al., 2018, p. 6)

Another participant from the same study even acknowledged that healthcare team members must contend with feeling insecure about making medical decisions without full access to spoken communication with a patient:

"So, it's more about being comfortable with that [acting without the full picture] and ...the feelings of risk."

(White et al., 2018, p. 6)

In one of this SLR's studies by Cheng et al., the authors found that when their healthcare provider participants could not engage in spoken communication with their patients, an unexpected consequence had to do with how the healthcare providers judged their patients' health literacy skills:

They shared how while they more easily and reflexively gauge the level of health literacy of English-proficient families, many participants assume the lowest level of health literacy for LEP families. The rationale for this default assumption was that they do not have the benefit of the instant feedback loop that is present with English-proficient families to adjust the communication as an encounter proceeds.

(Cheng et al., 2021, p. 5)

How, then, do linguistic minority patients and hospital healthcare providers engage in spoken communication when a language barrier is present in order to mitigate risks? As will be elaborated on in subsequent chapters, interpreters play a vital role in bridging this communication barrier. Interpreters facilitate direct spoken communication between hospital staff members, patients and the patients' families, and they can provide much-needed reassurance to both linguistic minorities and healthcare providers in a high-stakes hospital environment:

It did help me a lot because that way I was able to communicate through this person. I was able to explain everything. I was able to explain and say everything – everything that was going on with my son. And everything the doctor and the nurse wanted to tell me I was able to understand all of it through this person.

(Zamor et al., 2022, p. 4)

The times [when I don't use an interpreter] are frustrating...when there are a lot of external pressures and then I don't feel like I'm being the doctor I want to be or communicate the way that I typically am able to.

(Garcia et al., 2023, p. 104)

It would seem, then, that the benefits of using an interpreter to facilitate spoken communication would lead to their consistent use. However, in reality, the rates of utilisation of interpreters vary significantly from country to country and even hospital to hospital (Blay et al., 2018). While this SLR's data shows that spoken language barriers are the main type of multilingual miscommunication in hospitals, the literature shows that professional interpreters are not always called upon to manage this barrier (Blay et al., 2018; López et al., 2015). The reasons for this will be explained in Chapter 6 of this thesis, but here it is important to note that without standardised, consistent access to interpreters in hospitals, linguistic minority patients have a greater chance of experiencing negative health outcomes in large part because of an inability to engage with their healthcare providers via spoken communication (Lee et al., 2017).

If an interpreter cannot be present during spoken communication encounters between patients and hospital staff during a hospital stay, could a hospital at least facilitate a video telehealth visit post-discharge with an interpreter present to make sure that the linguistic minority patient has received the correct medical treatment? One of this SLR's studies investigated this idea, but found that their linguistic minority participants were significantly less likely to have access to the technology that would enable this practice:

We noted significant differences by language proficiency in technology access in the past year. Patients with LEP were less likely to report access to a smartphone

(56.3%), to a computer (25.4%), and to our patient portal (9.9%) compared with non-LEP patients (85.0%, 72.5%, and 58.2%, respectively).

(Barreto et al., 2021, p. e223)

Barreto et al. demonstrate that technology is not necessarily the solution to spoken communication barriers if linguistic minority patients cannot access it and do not have the levels of technological literacy required to do so. In a very similar vein, linguistic minority patients do not always possess the level of healthcare system literacy needed to *know* that they have the ability to request an interpreter to facilitate spoken communication. In this SLR's study by White et al., the authors noted this lack of healthcare system literacy in their patient participants:

Participant reports also suggested they were less likely to complain or advocate for their needs given their limited understanding of the Australian health system and awareness of their rights and responsibilities as a patient.

(White et al., 2019, p. 3)

In this case, this often led to unnecessary pain and suffering:

Participants who didn't request an interpreter or indicate when they didn't understand often suffered. This was in part because they didn't want to be a burden to staff. For example, one participant never complained about being in excessive pain and instead relied on seeing a nurse for pain medication at the scheduled time. "I knew when they would come around because they would give me medication, and if I was in pain I will endure it until they arrive."

(White et al., 2019, p. 4)

“Because we are unfamiliar with the hospital protocol and procedure....so, we will just follow what the doctors’ instructions are.”

(White et al., 2019, p. 3)

As seen from the qualitative data above obtained through this SLR, spoken communication barriers are prevalent in hospitals and do not always have an easy solution. Both linguistic minority patients and their hospital healthcare providers suffer when a spoken communication barrier cannot be bridged. What is more, this barrier is often complicated by co-occurring barriers like health system literacy and technological literacy/access.

While a spoken language barrier was the most noted type of communication barrier (and the one that may be the most obvious), the other lesser-known barriers that were commented on in the studies in this SLR should also be considered when seeking to understand the types of language barriers that linguistic minority patients and their hospital healthcare providers encounter. Written language barriers were noted in 9 studies in this SLR, so significantly less than the 42 studies that examined a spoken language barrier. A significant amount of current literature addresses the use of interpreters to alleviate spoken language barriers, but, as is evident from this SLR’s data, written language also plays an important role in facilitating communication within a hospital setting.

The majority of the studies in this SLR that examined a written language barrier discussed it in terms of the challenges of sending patients home with language-discordant written hospital discharge papers. Only 3 of the studies addressed the advantages and challenges to using written hospital discharge papers that have been translated into the patient’s preferred language, even though it is known that understanding and following discharge instructions is a critical part of hospital after-care (Davis et al., 2019; Desai et al.,

2016). One of this SLR's studies pointed out that there is no agreed upon standard of providing translated written discharge instructions, stating the following:

We identified variation and even conflicting guidance across institutions (e.g., regarding the definition of vital documents or the use of interpreters for document translation), indicating that health systems have not yet reached a consensus regarding preferred translation practices.

(Davis et al., 2019, p. 7)

This comes despite the fact that, as discussed in the literature review, several countries have laws and policies that specifically state that minority language speakers must have the same access to services and written materials that majority language speakers have. For example, a US study included in this SLR stated:

Title VI of the Civil Rights Act of 1964.... specifically requires that vital written materials routinely provided in English are also provided in regularly encountered languages other than English.

(Platter et al., 2019, pp. 519-520)

However, this study also found that “further research is needed to determine if hospital discharge guidance should be considered a vital written health care material” (p. 520). If language-concordant written discharge instructions are not classified as “vital” and enshrined in national policy, then their validity and reliability can be just as inconsistent and variable across hospitals as interpreter utilisation. Even in California, the US state that has the highest national percentage of people who report speaking a language other than English at home (44%), Platter et al. discovered that the quality of their hospital's translated written discharge instructions was significantly reduced in Spanish as compared to English.

They further noted:

Furthermore, Spanish is a threshold language at our hospital, and we have robust professional interpreter services, including in-house written translation services. The findings in our study therefore raise concern that other hospitals with lower rates of Spanish-speaking patients might also be providing incomplete discharge guidance to those families.

(p. 519)

It may be logical to conclude, based on the current prevalence of language translation apps and artificial intelligence, that providing patients with language concordant translated written materials would be a simple matter of running the English versions through translation software at a hospital. However, as one of this SLR's studies found, this is not always as simple a process as it may seem. At the hospital in this study, doctors would write their discharge instructions in English and put them through automatic translation software that would then provide the instructions in Spanish. However, this software could not always understand and properly translate abbreviations, medical jargon, or complex English syntax. For example, the study notes that the translation software would read a doctor's "Your US was normal" ("US" in this case meaning "ultrasound") and translate that into the Spanish "Estados Unidos" (meaning "United States" - US). As the authors state in this study:

A 2014 study of the use of Google Translate in medical communication found that it was only 57% accurate overall. There is, however, in our hospital, no other source for on-the-spot written translation for patient specific instructions.

(Taira & Orue, 2019, p. 6)

This study is an example of how hospitals must consider not just the *availability* of translated written discharge instructions, but the *quality* of the translation and how patients may or may not be able to read these documents, even when they are translated into their

preferred language. This potential for discrepancy between the availability of a written resource and its actual readability stems from the way an institution (in this case a hospital) communicates. This communication not only involves language choice (communicating in one language only vs. multilingual options), but also how that language is transmitted (Piller, 2022). This means that the quality and way in which translated written materials are presented to linguistic minority patients is just as, if not more, important than their actual existence. The readability of translated written materials can also intersect with the concept of academic literacy and how much formal schooling a linguistic minority patient has obtained. In one of this SLR's studies, the authors noted that 48% of the participants in their study, linguistic minority caregivers of hospitalised linguistic minority children, reported "their highest educational attainment as grade 8 or less" (Gutman et al., 2018, p. 5). This means that, even if these participants received (high-quality) translated written materials 100% of the time, they might not be able to understand them if there was a discrepancy between their academic literacy level and how easy the translated materials were to comprehend. In the only other study in this SLR to comment on academic literacy, Napoles et al. stated that 13 of their 23 participants, Spanish-speaking Latina breast cancer survivors, "had an elementary school education or less" (Nápoles et al., 2019, p. 6). Like the participants in Gutman et al.'s study, these patients would have needed written information that was not only language concordant but also able to be understood by readers with low levels of academic literacy.

One measurement that is used to calculate how easy or difficult written language may be to read is the Flesch Kincaid Grade Level (FKGL). This calculator examines vocabulary, syntax, jargon and abbreviations in writing to determine what grade level (correlating to years of school completed) a person must have in order to understand a

piece of written information. The American Medical Association and the National Institute of Health recommend that patient-facing materials (any documents that a patient might need to read) have a FKGL of no higher than 6, corresponding to having completed year 6 in school and being approximately 11-12 years of age (Eltorai et al., 2014). In reality, however, hospital discharge papers are often written at FKGL levels between 7 and 10 - pitched at secondary school levels of literacy and being approximately 13-16 years of age (Choudhry et al., 2016). This means that linguistic minority patients who do not have a high academic literacy level can be at a double disadvantage. They are less likely to have access to correctly translated written materials, but even when they do, they may not have the academic literacy level required to understand them.

This SLR's data in response to the first research question - *What types of language barriers exist between patients and staff in hospitals?* – shows that language barriers between linguistic minority patients and hospital staff are multi-faceted and often intertwined with one another. Spoken and written language barriers can be exacerbated by and co-occur with other barriers, and without addressing these barriers holistically, both linguistic minority patients and their hospital healthcare providers can be affected negatively.

4.4 Conclusion

This SLR has found that spoken and written language barriers within hospital settings are known and commented on in current literature. However, the literature does not examine written language barriers nearly as much as spoken barriers. As it is known that properly understanding and adhering to written discharge instructions leads to better health outcomes, ensuring that patients have access to readily available and correctly

translated written documents is crucial to ensuring linguistic minority patients' health and safety. In addition, both spoken and written language barriers often co-occur with lesser-known barriers, such as barriers to health literacy, technological literacy, healthcare system literacy and academic literacy.

5. How Hospital Staff Assess a Patient's Language Proficiency and Need for a Multilingual Communication Strategy

5.1 Overview

This chapter notes the results to the second research question – *How do hospital staff assess a patient's language proficiency and need for a multilingual communication strategy?* I will show that, notably, this SLR discovered that much of the current literature does not answer this question at all. The literature that does examine this question most often points to hospital admission and triage staff as the people responsible for determining a patient's majority language proficiency and if they need a multilingual communication strategy. This finding will be expanded on with qualitative data that answers the research question and an explanation of the one language proficiency assessment protocol that was noted in this SLR.

5.2 Results

Of the included studies, 46% ($n = 23/50$) did not state how hospital staff assess a patient's language proficiency, as seen in Figure 3. Of the studies that did note that some kind of an assessment took place, 59% ($n = 16/27$) explicitly noted that this happened upon hospital admission or triage. 22% ($n = 6/27$) of the studies with some form of language assessment noted that the patient's language preference was listed in the electronic medical health record, but no details were given as to who entered that information. 19% ($n = 5/27$) mentioned that a healthcare provider most likely identified or was expected to identify a patient's need for language services.

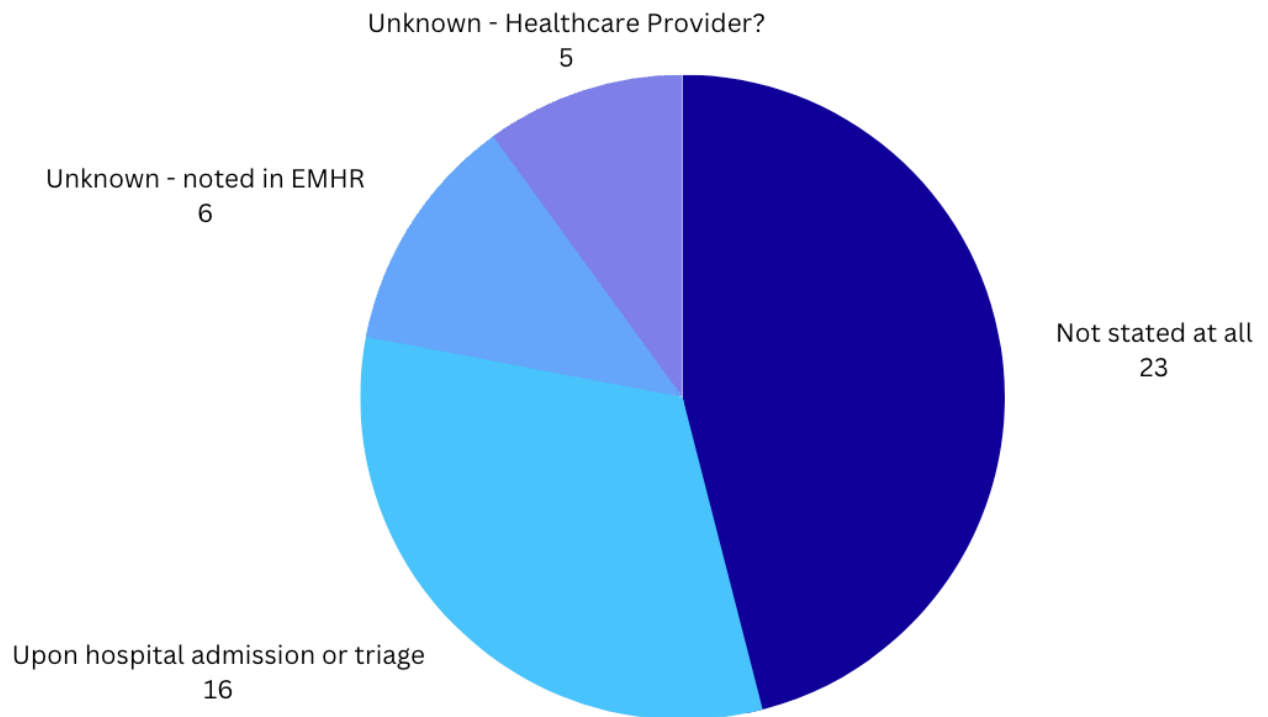


Figure 3
How Hospital Staff Assess a Patient's Language Proficiency

5.3 Discussion

There is no gold standard for defining limited English proficiency.

(Malevanchik et al., 2021, p. 776)

One of the most notable findings of this SLR was that almost half of the examined studies did not comment on how hospital staff assessed a patient's language proficiency and need for a multilingual communication strategy. This data point is noteworthy because it shows that the actual process(es) of identifying a patient's language needs may be currently under-studied or under-reported by scholars in the field, as well as non-standardised or under-reported by hospital staff themselves. This theme is seen in older literature like Karliner et al.'s systematic literature review (2007) which found no consistent data on how hospital staff detect and report a patient's need for language services. The fact that this

thesis' SLR found a similar data point over 15 years later with more recent studies demonstrates that this is an area that continues to need more attention.

If a study in this SLR noted that there had been some kind of assessment of a patient's language proficiency, this notation fell within one of three categories – a hospital receptionist made the observation, a healthcare provider potentially made the observation (though this was not always explicitly stated) or the notation appeared in the patient's electronic medical health record without stating who entered it. Six studies in this SLR noted that there was a language preference in the EMHR, but it was unclear who was responsible for entering that information, as seen in these examples:

All but one respondent reported that their hospital has a mechanism to ensure that information about a patient's preferred language is available to hospital staff throughout the continuum of care (e.g. a flag in the electronic medical record).
(Davis et al., 2019, p. 4)

Patients in the study cohort were defined as having LEP if they met both of the following criteria: (1) self-reported "preferred language" other than English and (2) having the "interpreter needed" variable (in the EMHR) indicating "yes".
(Jacobs et al., 2020, p. 142)

Bilingual-bicultural research assistants identified eligible patients daily by reviewing the floor census lists and preferred language in the medical record.
(Lee et al., 2018, p. 26)

Patients were identified as having English or Spanish language preference based on their response to the question "What is your preferred language to receive healthcare information?" in the medical record.
(Molina, 2022, p. 2)

Language in this study is defined as the preferred language listed in the patient's electronic health record.

(Payvandi et al., 2022, p. 2)

While a notation about a patient's language needs in the electronic medical health record may seem like a solution to identifying patients that need a language service, the fact that an assessment has been made and the notation *exists* does not always mean that a designated staff member then follows up on *booking* a language service. As can be seen in the following example, despite a patient's EMHR containing consent forms in Spanish, the admitting nurse from this study had to do their own investigating to find out if a patient needed a language service:

As soon as I bring them back one of the first things I look at is how did they sign their consents like for treatment not consents for the procedure but consents for treatment in the hospital. They're in Spanish, that's a clue right there that their (sic) Spanish speaking.

(Villanueva, 2022, p. 6)

What is noticeably absent from this example is an interpreter. If the patient's EMHR was updated to reflect a need for Spanish language services, why did the nurse not see an interpreter with the patient upon bringing them "back"? Presumably, the function of a language needs notation being made in the EMHR is to ensure that the patient has access to language services from the beginning and for the duration of their hospital stay. However, as can be seen from the above example, even with some kind of record in the EMHR, successfully assessing a patient's language need does not always translate into ensuring that the patient then gains access to the needed language service.

This idea of the healthcare providers themselves needing to identify a patient's language needs appeared in 5 of this SLR's studies. As can be seen from the following examples, there was often no clear protocol that the providers followed in order to a) actually determine a patient's language proficiency and b) book a language service:

There was consensus that the need for an interpreter was determined by staff perceptions of needs rather than patient expressed needs. In many instances patients were transferred to the ward outside of business hours and admitting clinicians undertook admission and orientation of the patient to the ward without use of a common language or interpreter.

(White et al., 2018, p. 7)

Requests for interpretation are made by patients or at a provider's discretion if any communication difficulties arise, and this is documented in the patients' charts.

(Plocienniczak, 2022, p. 1242)

Physicians' approaches to assessing their patients' LP (language preference) and comprehension included patients' facial expression and body language, adequacy of their responses, presumptions about patients' intellectual capacity, and their individual demeanor.

(Wurth et al., 2018, p. 1887)

The majority of studies in this thesis that *did* note that a patient's need for language services had been identified stated that it was the responsibility of hospital admission or triage staff to notice and report this language need. However, these studies usually did not note *how* a language service was called for and booked if a receptionist recognised that a patient had a need for one:

LEP patients identified at hospital admission as needing an interpreter.

(Blay et al., 2019, p. 820)

When initially registering at the hospital, patients are asked their preferred language, and this is recorded in the medical record and used to determine if a patient requires an interpreter for their care.

(Schulson et al., 2018, p. 2114)

Registration workers asked each patient their preferred language and whether they would like an interpreter.... The exact question asked by the registration worker was 'What is your preferred language?'. If the response was anything other than English, the follow up question was 'Would you like an interpreter during your visit today?'.

(Taira & Orue, 2019, pp. 1-2)

Language barriers were defined as a primary language other than English as recorded in our health network administration database. These data were collected and documented by a hospital clerk at the time of admission.

(Rezania, 2021, p. 2)

When a patient is registered in the ED, the following question is asked to screen for LEP: 'What is your preferred language for care?' The answer to this screening question is recorded in the patient electronic medical record at each encounter.

Registration can occur any time during an ED visit, but usually occurs near the beginning of the visit.

(Hartford et al., 2019, p. 3)

This particular finding is important as it demonstrates that these reception staff members are often the people who are expected to assess a patient's language proficiency, but they do not always have a clear, supportive protocol that will enable them to reliably detect and report patients' language needs. As can be seen in the above examples, the most common

way that a receptionist determines a linguistic minority patient's language proficiency is by asking them, in the majority language, what their preferred language of care is. However, this does not take into account the fact that a patient might not understand that question in the majority language at all and might not be able to respond to it in a way that the receptionist will understand. Furthermore, asking this question of a patient does not guarantee that the patient will respond by stating the language that they need. Two studies in this SLR noted that sometimes a patient believed their level of majority language proficiency to be sufficient for a medical encounter, only to discover later that the patient could not understand everything that was being communicated without the support of a language service (Buser et al., 2022; Wurth et al., 2018). The linguistic minority patients in these studies were at risk of not receiving the language support they needed because the person assessing their language proficiency did not accurately gauge their level of comprehension.

One of the studies in this SLR (Buser et al., 2022) does mention a protocol called the ABC Tool, originally developed in the Western Sydney Local Health District in Australia, that was made to assist receptionists in gauging and assessing a patient's language proficiency. This tool is a flowchart that can be used by admission staff (and, presumably, other hospital staff if necessary) and provides a 3-step process to assessing language needs as well as booking and confirming a language service (see Figure 4). The authors discuss adapting this tool for a Swiss hospital staff, and it is certainly a protocol that could be easily adapted to specific hospitals. However, while it is a good start, the ABC Tool still lacks specific information that would allow a language service need to be identified and met. Steps 1-3 under "Assess" instruct the admitting staff member to ask a patient a series of questions to gauge their level of language proficiency. However, as has already been established by

several studies in this thesis' SLR, patients may have enough majority language proficiency to "get by" in answering basic questions, but they are then often unable to understand more complex medical information without an interpreter (Cheng et al., 2021; Hartford et al., 2019; White et al., 2018). A patient may not know the name of their language in the hospital's majority language and therefore may not be able to provide the necessary information for Step 1 of "Book". In Step 2 of that same category, the admission staff member is directed to either ask the patient (or make the judgement call themselves) if on-site, video or phone interpreting is needed. It is unclear how the patient would know which method is most appropriate, and this tool does not specifically tell the admission staff member when each different type of interpreting service should be utilised and requested. Step 3 "Confirm" states that Health Care Interpreter Services will confirm the booking with the admission staff member, but it does not specify if it is this staff member's responsibility to provide continuous follow-up requests for multiple interpreting events once the patient has been admitted to a ward. This tool also does not specify who is in charge of arranging for any translated discharge papers or post-discharge phone call check-ins for the patient.

The fact that this was the only study in this SLR to include a specific language proficiency assessment protocol is indicative of the need for greater understanding of how this crucial language assessment step actually plays out in hospitals. Without accurate and consistent language needs assessments, patients are at risk for not receiving the language support they need and potentially suffering negative health effects for it.

Do You Need an Interpreter?

A

Assess To assess if a person is able to fully understand and communicate in a health care situation, ask the following questions:

Can you please tell me why you are here?

If the person has difficulty in understanding and communicating in English,
Follow the Flowchart



I need information from you, about any past admissions, medical conditions and treatment!

If **you** experience difficulty in understanding the person's response
Follow the Flowchart



Do you need an Interpreter?

If Yes - Follow the Flowchart

If No, the person's reason for this should be clearly recorded

Book

FLOWCHART

for Booking a Health Care Interpreter 24/7

What language do you speak? e.g.
Cantonese or Mandarin
not Chinese,
Arabic from Sudan or
Lebanon?

Do you need an
Interpreter:

- Onsite
 - Via Video
 - Via the Phone?
- (faster via phone & video)

Do you need a
Male or Female
Interpreter?
(where available)

Call: **9912 3800** or
Fax: **9840 3789**
Email: **wsllhd-hcis-InterpreterBookings@health.nsw.gov.au**
e-Orders (Available for inpatients only)

Urgent requests ARE NOT to be emailed or faxed

Confirm

Record **all** booking details in the person's file /electronic
record e.g. FirstNet, iPM
HCIS will confirm the booking with you.

HCIS is a unit of Western Sydney Local Health District (WSLHD) & 24/7 service

Figure 4

ABC Tool - Western Sydney Local Health District

5.4 Conclusion

This study has found that current literature does not consistently examine and/or report on who within a hospital is responsible for assessing a patient's language proficiency and need for a communication strategy. Of the studies that do report this, admission and triage staff are most often cited as being responsible for this task. However, there is no widely accepted protocol or procedure that instructs admission staff members on how to perform this task in a way that will provide ongoing language support to patients for the entirety of their hospital stay. In the next chapter, I will discuss what this language support looks like and the forms it most often takes.

6. Interpreters

6.1 Overview

This chapter examines this SLR's most-examined type of language support within hospitals - interpreters. I will begin this chapter by showing the quantitative and qualitative data that this SLR found in response to the question *What are the current tools and strategies that hospitals use to overcome language barriers between patients and staff to provide inclusive communication?* I will show that human interpreting services of all kinds are the most utilised way of providing language support, and I will explain how their language services are used within hospital settings.

After this, I will examine the challenge of time constraints that SLR study participants noted as the most-cited challenge to utilising an interpreter. I will then elaborate on how this theme presented across studies that examined all types of interpreters— ad hoc, phone, video or in person. I will then discuss two studies that examined technology-assisted interpreting in the forms of the Vocera SmartBadge and an Interpreter on Wheels program. Then I will examine the most-cited advantage to using an interpreter, which was that interpreters serve as emotional and cultural mediators or patient advocates. Other tools and strategies – most notably, translated materials and translation apps – will be the focus of the following chapter.

6.2 Results – What current tools/strategies do hospitals use to overcome language barriers between patients and staff and provide inclusive communication?

Before proceeding with the results that will be discussed in this chapter and in Chapter 7, it is important to clarify that there were instances where the studies included in the SLR examined multiple types of language/communication barriers that existed, and

some studies also included multiple tools or strategies for overcoming those. Therefore, such studies were allocated multiple data points within a given category.

By far, the most-examined tool or strategy used to provide language services was the work of interpreters, as seen in Figure 5. This included interpreters in general ($n = 19/50$) where it was not specified if the services were in-person or remote, or if the interpreter was a certified bilingual staff member or a professional medical interpreter. Specific forms of interpreting were addressed 35 times, including ad hoc interpreters (hospital staff and/or patient family members) examined in 13 studies, the services of remote professional interpreters via phones examined in 8 studies, in-person professional interpreters discussed in 7 studies, and professional interpreters via remote video conferencing discussed in 7. One study examined remote interpreting via a wearable Vocera Smartbadge device, and this particular study will be discussed in more detail in this chapter for the way in which it overcomes many commonly cited communication obstacles.

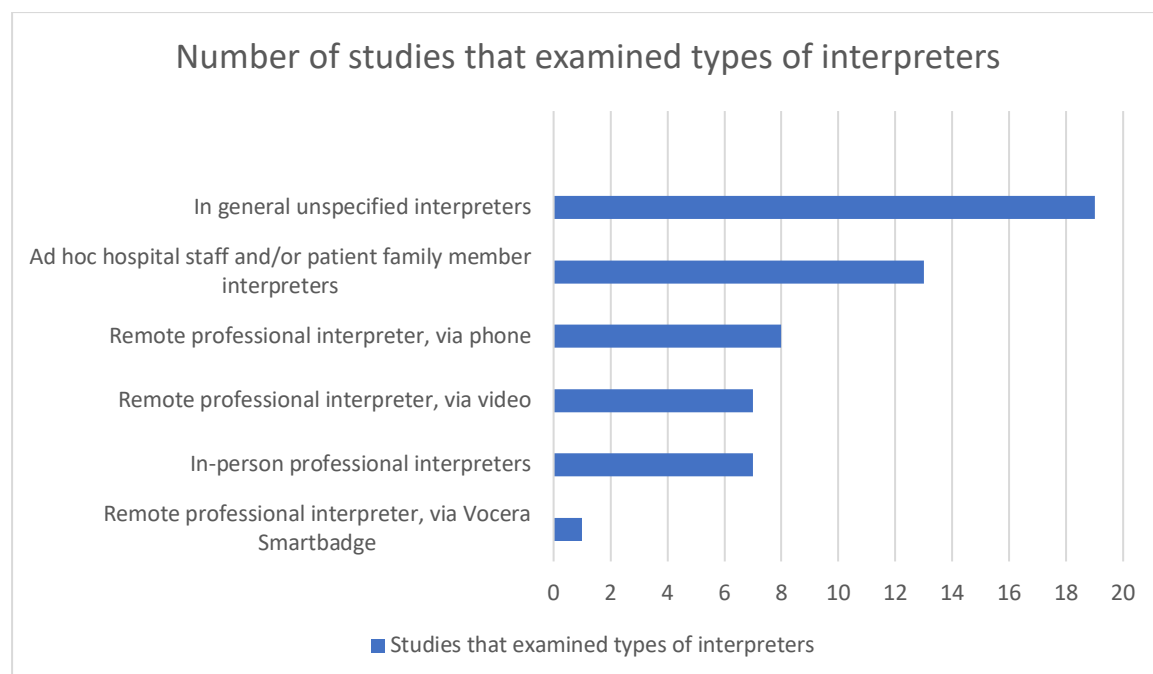


Figure 5
Tool or Strategy Used to Overcome Language Barriers – Types of Interpreters

6.3 The Roles of Interpreters

.....these people who have not learned to speak English here or back in their country of origin,....face many barriers....We have to deal with language barriers in every other shift.

(Ali & Watson, 2018, p. 1156)

As discussed in Chapters 3 and 4, it is known that interpreters play a key role in facilitating multilingual communication within a hospital setting, but here it is important to note the different “hats” that an interpreter might wear as they do this. Jalbert’s typology (1998, as cited in Leanza, 2005) is a useful lens through which to view some of the various roles that an interpreter may take on as they facilitate communication between patients and hospital staff/healthcare providers. Jalbert’s typology distinguishes five roles for interpreters, namely as Translator, Cultural Informant, Cultural Broker or Cultural Mediator, Advocate and Bilingual Professional. This framework provides a basis from which to understand why healthcare providers, patients and hospital staff might request that an interpreter be present during their communication events. The studies in this SLR show that, indeed, these are roles that interpreters often fulfill in hospitals. The following are examples of how several studies’ qualitative data regarding interpreter use map directly onto Jalbert’s typology.

In the role of Translator, the interpreter is a “conduit” for meaning transfer only (Cho, 2023). The interpreter does not add to the conversation between healthcare provider and patient, but only reproduces speech between the two parties:

A substantial majority of both groups (of healthcare provider participants) reported “agreeing” to “strongly agreeing” that medical interpreters act as a conduit to

provide accurate exchange of information and have the role of clarifying medical information.

(Silva et al., 2022, p. 223)

As a Cultural Informant, the interpreter goes beyond meaning transfer and provides relevant cultural explanations or contexts to the healthcare provider or patient as necessary:

Participants also reported that medical interpreters can provide meaningful “insight into non-verbal cues” and “provide a cultural context for understanding the patient and his/her beliefs.”

(Silva et al., 2022, p. 224)

(Interpreters) help a lot. On a few occasions my interpreter as said, uhm, for example, when we started, uhm, idioms for example is a simple thing. Idioms that we used, the interpreter said no, no, no, no. She realised that they find those idioms difficult to understand. She prefers that we use cultural idioms, and then she used three cultural idioms, and you could immediately see the difference for the patients. The moment you use cultural idioms, you can see the sparkle in their eyes, now they know what we are speaking about.”

(Hagan et al., 2020, p. 7)

While acting as a Cultural Broker or Mediator, the interpreter also negotiates between the healthcare provider and patient who may be approaching communication from two conflicting value systems so that the two parties can reach a resolution of care:

Interpreters similarly saw their role as bridging potential patient distrust of medical providers or the medical system by providing “reassurance” and “transparency” about the health-care encounter.... Interpreters took on the role of cultural broker to

help the patient and provider bridge sensitive aspects of healthcare and distinct views of health and wellness.

(Lara-Otero et al., 2018, p. 4)

Interpreters had a role in facilitating communication by serving as a cultural bridge between the patient and counselor. When interpreters anticipated and/or explained points of confusion or ambiguity to the GC (genetic counselor), clarified questions or information for the patient, or voiced personal questions about content or translation, they allowed for more effective communication between the counselor and patient.

(Kamara et al., 2018, p. 164)

The interpreter may act as the linguistic minority patient's Advocate against the linguistic majority hospital institution, as in this example:

Participant 3 described how crucial it was for her to have in-person interpretation, particularly during COVID-19, as her husband and friend were unable to be with her during her cesarian section. Not only did this interpreter ensure that the participant was able to communicate with her healthcare team, but she also acted in lieu of the participant's support people, providing comfort and support.....Other participants even discussed their interpreters acting as advocates for patient safety.

(Stirling Cameron et al., 2021, pp. 5-6)

In the case of acting as a Bilingual Professional, the interpreter might be a healthcare professional themselves, or have enough institutional training to be able to conduct an interview with a patient and then report back to the healthcare provider.

We assisted with the care of a new mother in the ICU who had recently extubated. A few days earlier she had required an emergency caesarean delivery due to COVID-19

respiratory failure, and her premature baby had been transferred to another hospital.... Separated from her family and unable to speak English, she looked at us with confusion and fear. Her first question to us was: ¿Dónde está mi bebé? (Where is my baby?) As neonatologists volunteering in the adult intensive care unit, we found ourselves tasked with evaluating her mental status and reviewing the nightmare she was currently living in in her native language.

(Herzberg et al., 2022, p. 526)

Interpreters working in a hospital setting often fulfill many roles while facilitating multilingual communication. Functioning in these roles can be advantageous to both healthcare providers and linguistic minority patients. However, the utilisation of interpreters does not come without its challenges, and this is what I will discuss in the next section.

6.4 Discussion

6.4.1 The Challenge of Time

Across all studies that examined interpreters, the most-cited challenge of accessing and using any type of interpreting service was that the service itself was perceived as time-consuming, as seen in Figure 6. This most-noted challenge was almost always cited by healthcare providers. For the healthcare providers, understanding that an interpreting session would increase the amount of time they had to spend with a patient meant that they may choose to “forego interpretation for anticipated short communications or updates” (Lion et al., 2021, p. 6), as seen in these studies’ excerpts:

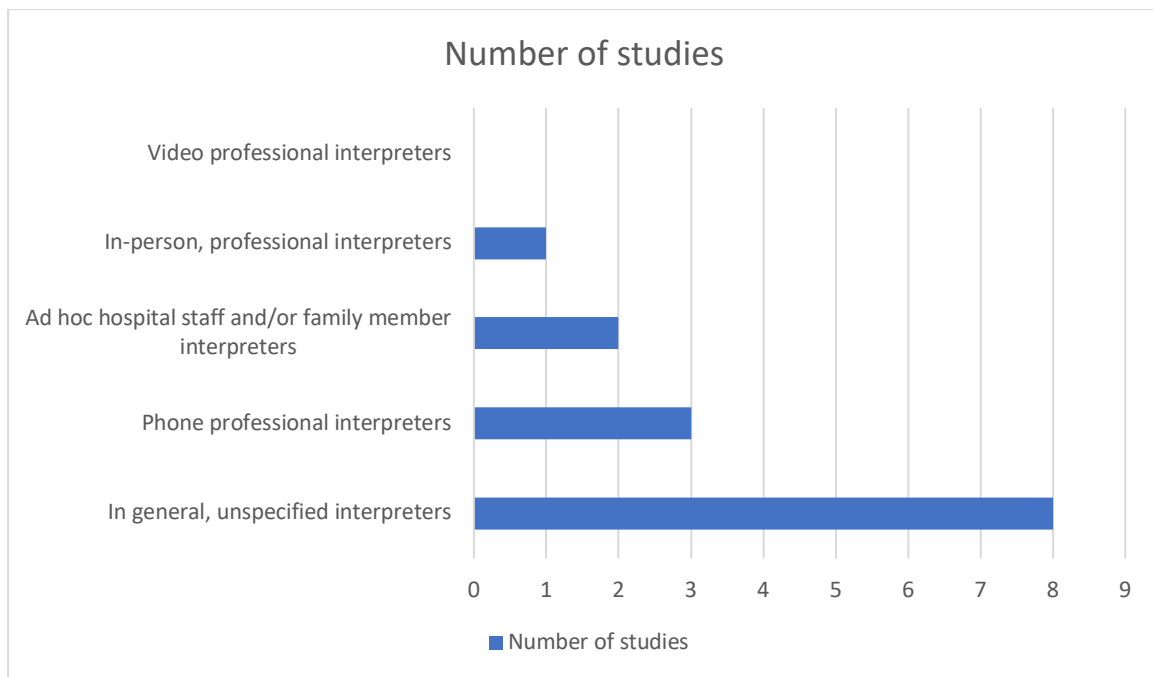


Figure 6
Time Constraints as Cited by Types of Interpreting Services

Communicating through an interpreter can take very long. It's even more complicated when the patient is not fully conscious, how can you ask a semiconscious patient to talk to an interpreter on the phone?

(Ali & Watson, 2018, p. 1157)

Concerns about time-consuming language interpretation were often mentioned by the medical staff during informal discussions in the transcultural training. As shown by pediatric studies from the United States and Sweden, perceived lack of time and high stress levels often hinder staff from using interpreters.

(Buser et al., 2022, p. 9)

Time constraints and concerns about disrupting their schedules can limit physicians' use of interpreting services, although the simultaneously acknowledge the benefit of these services and their potential underuse.

(Wurth et al., 2018, p. 1888)

The time-consuming nature of professional interpreting was often used to justify ad hoc interpreters, as seen in studies in this SLR that specifically examined their use. Asking a patient's family member or a bilingual hospital staff member to interpret in these cases was seen as less time consuming and more efficient than trying to book a professional interpreter. These studies discussed this type of interpreting even though ad hoc interpreting in hospitals technically goes against regulatory guidelines in many countries (Basu et al., 2017; Migrant and Refugee Women's Health Partnership, 2019; Rimmer, 2020). If healthcare providers know that they are not *supposed* to utilise ad hoc interpreters, why do they? The data from these studies points to time as a reason. Two studies that noted advantages to using ad hoc interpreters from the perspective of healthcare providers stated that those advantages were that ad hoc interpreters were more quickly available and easier to organise in a timely manner than professional interpreters (White, 2018, 2019). Healthcare providers may be concerned about time constraints and how this affects their ability to do their jobs and may therefore elect to "get by" with ad hoc interpreting in the interest of time:

Even when they had been booked, interpreters noted that staff preferred to grasp earlier opportunities to start assessments when family were visiting.

(White et al., 2019, p. 5)

If staff think the daughter is here, the cleaner is here, that will be quicker, easier.

(White et al., 2019, p. 5)

Staff have booked an interpreter – but when the daughter comes in before me then they (staff) would prefer to use the daughter rather than wait for me the interpreter.

(White et al., 2019, p. 5)

We rely on family quite a bit.... obviously they are very useful for us because we can get quick information conveyed to the patient and also back from the patient. Not that we wouldn't use (professional) interpreters but I guess it (using the family) makes it a bit more efficient.

(White et al., 2018, p. 6)

As with ad hoc interpreting, this challenge of time was also cited by studies that examined remote phone interpreting. Even though it would be logical to assume that engaging an interpreter by phone would be potentially quicker and easier than engaging one in person, this SLR's data shows that the actual time needed for an interpreting session was still concerning for healthcare providers utilising this type of interpreting service:

Despite the increased ease of access (to dual-handsets for remote phone interpreting), participants remarked on needing extra time for interpreted conversations and occasionally noted greater delays in obtaining a remote interpreter under specific circumstances (e.g., early mornings, weekends, less common languages). While perceived delays were infrequent, participants noted that delays negatively affected their subsequent decisions to use dual-handsets.

(Garcia et al., 2023, p. 103)

Telephone interpretation was preferred over no translation at all, but it was often slow. Participant 7 said, "Before COVID I had an in-person interpreter. But during COVID it was hard. The interpretation over the phone was not efficient."

(Stirling Cameron et al., 2021, p. 5)

Because hospital healthcare providers find time constraints and pressures to be such a consistent concern when deciding to organise for any type of interpreter, some hospitals have turned to technology to assist them in this process. In the next section, I will discuss

two studies that went beyond established remote technologies and made use of novel technologies to facilitate timely interpreting sessions for their linguistic minority patients.

6.4.2 Technology-Assisted Interpreting

One particular study in this SLR examined a novel solution to the challenge of organising and executing phone interpreting sessions in a timely manner. This study by Mulpur & Turner (2021) came about as a direct result of the COVID-19 pandemic. The authors formatted this study as “notes from the field” and examined how Houston Methodist Hospital in the United States adapted a tool that was already in use so that it could be linked with remote language services. In 2020-2021, the healthcare staff at this hospital already wore Vocera Smartbadges on their chests in order to communicate with each other from different parts of the hospital, much like using a hands-free speaker phone (see Figure 7):



Figure 7
Vocera SmartBadge

Once the staff began wearing personal protective equipment (PPE) due to the pandemic, they realised that they could no longer use the dual handset telephones that they had been using to call remote language interpretation services. The protective head

coverings that they wore meant that they could not hold the dual handset receiver up to their ears, and their gloves did not enable them to dial the phone number for the service. Furthermore, they found video interpreting difficult as their bulky PPE meant that several healthcare providers in one room could not fit into the video frame. However, they were still wearing their Vocera Smartbadges on the outside of their PPE, so they linked the device to the phone number that would call the remote interpreting service that was already in place at the hospital. The healthcare providers were then able to say “Vocera, call Language Assistance”, and they would be connected with remote interpreters located in a call centre immediately. Both the linguistic minority patient and any healthcare provider in the room could then hear the interpreter on the Vocera SmartBadge.

As has been seen with several studies in this SLR, healthcare providers can be hesitant to call for any interpreting service (in-person or remote) if they feel that this organisation process will be time-consuming. The benefit of using the Vocera SmartBadge was that this process was consistently streamlined into one sentence that the provider had to say - “Vocera, call Language Assistance”. The provider did not have to “order” an interpreter by finding a dual handset telephone or placing a request through the hospital’s internal system. The organisation of the language service was nearly instantaneous. Another benefit that the authors cited was that the healthcare providers experienced a deeper sense of connection with the linguistic minority patient when speaking through an interpreter on the Vocera SmartBadge due to the fact that the interpreter’s voice was coming from the provider’s “heart”. Healthcare providers wore the badge on their chests, so the remote interpreter’s voice seemed to be coming from the providers themselves. This also broke down the perceived physical barriers that can be present during remote

interpretation sessions, whether those barriers be phone cords, video monitors, dual handsets or glass partitions.

Furthermore, this tool, while not inexpensive itself, enabled the hospital to save money by not having to purchase PPE for in-person interpreters. This had the additional benefit of keeping the interpreters safe from disease during the global pandemic.

The above study is an example of how technology can help to circumvent the potentially time-consuming challenge of organising for an interpreter. In addition to remote phone interpreting, another type of technology-assisted interpreting that can lessen time constraints is remote video interpreting, and 4 studies in this SLR discussed the advantages and challenges to using video interpreting services. One of these studies demonstrated how a video interpreting pilot program was easy enough to organise in a timely manner that use of hospital staff as ad hoc interpreters decreased. Kwok et al. (2021) describe an Interpreter on Wheels (IOW) trial program conducted in an emergency department in a Canadian hospital. The IOW is a tablet mounted on a rolling stand that can be moved to any location in the hospital, including into patients' rooms. As seen in Figure 8, the tablet allows the healthcare provider to select from over 200 languages and instantly be connected with an external interpreting service 24 hours a day, 7 days a week. The IOW allows for both video and audio calls, but many healthcare providers in this study elected to use the video function instead of simply audio.

Kwok et al.'s study notes that, before the trial, baseline data was collected to determine how often hospital staff were being called away from their duties in order to interpret between healthcare providers and patients. Over the course of the 25-day baseline data collection period, bilingual registered nurses (who were *not* certified to act as interpreters) were asked to interpret 49 times during 18 shifts in the emergency room. The

nurses spent an average of 12.8 minutes per encounter acting as ad hoc interpreters. This meant that each bilingual nurse was being taken away from their own jobs in order to



Figure 8
Interpreter on Wheels

interpret for an average of 34.8 minutes per shift. Kwok et al. state that the reason for this diversion of personnel was due to the fact that their phone interpreting service was not easy to use because of poor sound quality, and access to in-person professional interpreters in the needed language (Mandarin and Cantonese) was very limited and therefore difficult to organise.

In contrast, the study found that both linguistic minority patients and healthcare providers found the IOW to be an extremely positive change, and the healthcare providers in particular cited how quick and easy it was to organise. While they had previously needed to rely on staff as ad hoc interpreters, this user-friendly device coupled with *immediate* access to interpreters (based in a call centre) negated this need. This, in turn, allowed the bilingual nurses to dedicate focus to their own duties, and healthcare providers that needed

interpreting services felt more confident in how reliably available interpreters were through the IOW.

The studies' authors point out that, for all of the positive responses from healthcare providers and patients, the IOW did also come with costs. The tablet itself had a monthly cost, and each interpreting session was \$C0.90 per minute (for audio only) or C\$1.60 per minute (for video). However, they point out that this study took place during the early days of the COVID-19 pandemic, so having access to video interpreting services (instead of having to book in-person interpreters) meant that, like the Vocera Smartbadge study, interpreters could be kept safe from infection and the hospital did not need to invest in costly PPE for them.

This study highlights the fact that healthcare providers may need to feel that an interpreting service is easy to organise and quickly available in order to use it instead of relying on ad hoc interpreting or no interpreting at all. The IOW's video component was particularly important as it allowed for better sound quality than phone interpreting. This study and the others in this SLR that examined video interpreting demonstrate that this particular medium of interpreting may be an efficient way to address concerns of how difficult a language service can be to organise in a timely manner.

In the above sections I have discussed the theme of time constraints, the most-cited challenge that this SLR's studies noted to engaging an interpreter within a hospital setting. I also examined how technology assisted in circumventing these time constraints. In the next section, I will move to discussing the advantage to utilising an interpreter that was most-cited by the studies in this SLR.

6.4.3 Cultural and Emotional Mediation and Brokering

While the technology discussed in the above section acted as an aid to booking and facilitating interpreting sessions, it is clear from this SLR's studies that linguistic minority patients see human interpreters themselves, not the technology that may assist them, as the most important part of an interpreting event. This is because these patients are looking for the empathy, advocacy and cultural brokering that human interpreters can provide. This is evident from this SLR's most-cited advantage of utilising interpreters, namely that interpreters are seen to act as a linguistic minority patient's advocate and emotional/cultural mediator (fulfilling the Cultural Broker/Mediator and Advocate roles from Jalbert's typology). As seen in Figure 9, this advantage was cited by studies that looked at all types of interpreters.

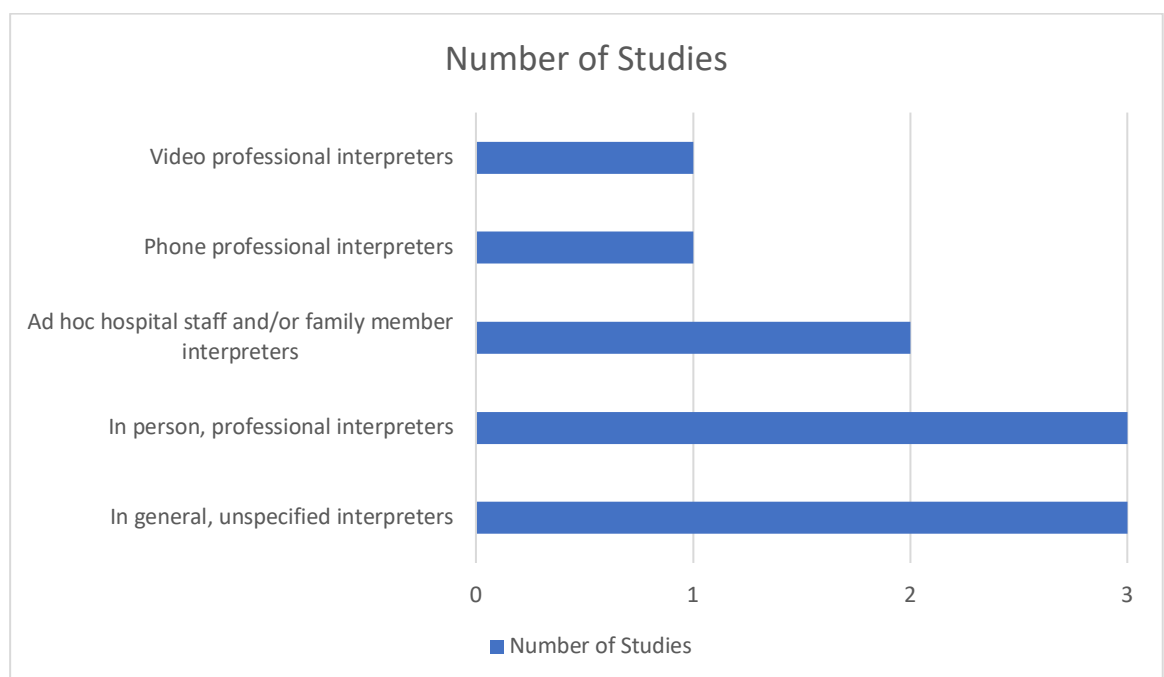


Figure 9
Interpreter as Advocate/Emotional or Cultural Broker as Cited by Types of Interpreting Services

As can be seen from the following excerpts from studies from this SLR, it was often linguistic minority patients who appreciated the extra support that the interpreter provided them while acting as Cultural Broker/Mediator and Advocate:

During the interviews of the participants (patients), relief was concurrent in all four narratives. Relief is described four different ways in four different situations but all four are focused on the interaction with the patients once the interpreter became the broker between the healthcare system and the patient.

(Villanueva, 2022, p. 5)

Some participants (patients) received interpretation services from people related to medical institutions. These “specialists” were perceived as better mediators with the ability to bridge the cultural and linguistic differences.

(Alkhaled et al., 2022, p. 5)

Interestingly, this most-cited advantage of interpreters acting as patient advocates and cultural brokers is an act that goes beyond a professional interpreter’s usual scope of practice. In Australia, for example, interpreters are required to engage in message transfer only as a “neutral conduit” (Cho, 2023) and they do not “allow bias to influence their performance; likewise they do not soften, strengthen or alter the messages being conveyed” (Australian Institute of Interpreters and Translators, 2012). In the USA, translators and interpreters must “convey meaning between people, organizations, and cultures accurately, appropriately, and without bias” (American Translators Association, 2022). Interpreters in the UK must “interpret truly and faithfully what is uttered, without adding, omitting or changing anything” (National Register of Public Service Interpreters, 2016). These interpreting frameworks are clear – interpreters are to transfer meaning between parties and not advocate on behalf of patients. However, despite the clear

guidelines, this SLR's data shows that stakeholders (healthcare providers, linguistic minority patients or interpreters themselves) may appreciate when interpreters *do* step outside of their role of meaning transmitters to advocate and mediate:

Interpreters indicated that they were trained to interpret following the conduit model of interpretation where they are expected to transfer information from one language to another neutrally and faithfully. Nevertheless, most participants believed that to serve the patients' best interest, they needed to enact multifaceted roles as patient advocate, cultural broker, and patients' transient emotional support. (Lara-Otero et al., 2018, p. 4)

One study in particular demonstrated what it looked when an interpreter stepped outside of their conduit role and mediated not only culturally but pragmatically between a linguistic minority patient and their healthcare provider:

I think what was interesting for me with the (bilingual nurse) interpreter, was that they had to, uhm, the Venda's (a language spoken in the northern part of South Africa) speak very symbolically, so the nurse also had to interpret the symbolism. So the patient will come, and they will say the problem is a snake bite, that you search for it and then there is no snake bite... and then the snake bite is symbolic of a pain that is actually an emotional problem, the husband has an affair. So she is speaking about a snake bite, but actually her husband is having an affair and that is actually the problem, and she is upset about this. So that symbolism, what certain things mean, the (bilingual interpreter) nurses had to help with that.

(Hagan et al., 2020, p. 7)

As is clear from this SLR's studies, linguistic minority patients, interpreters themselves and even healthcare providers may want interpreters to step outside of the conduit-only role of

message transfer. As seen in the examples throughout this section, interpreters may play a large part in facilitating not just literal communication but also in providing emotional and cultural support.

6.5 Conclusion

As is evident from the number of studies in this SLR that examined interpreters of all types, interpreters play a crucial role in facilitating multilingual communication in hospitals. This can be done in many ways – through in person professional interpreters, ad hoc interpreters, remote phone interpreters and remote video interpreters. While these different types of interpreters have their pros and cons, the concept of time constraints is the biggest concern for healthcare providers when engaging any type of interpreter. Likewise, all types of interpreters can be seen to have the advantage of acting as a patient's emotional or cultural broker or advocate. These interpreters facilitate communication across spoken language barriers, but not all multilingual communication strategies come in spoken form. In the next chapter I will describe how the second and third most cited tools and strategies that the studies in this SLR examined acted to overcome written language barriers.

7. Translated Documents and Translation Apps

7.1 Overview

This chapter examines tools and strategies that hospitals currently use to overcome written language barriers between patients and staff. While Chapter 6 examined the work of interpreters, in this chapter I will discuss translated hospital documents and translation apps. Importantly, language barriers do not exist in isolation, and in this chapter I will show that written barriers can co-occur with not only spoken barriers but also low levels of academic literacy. I will then explain the roles that these tools and strategies play in facilitating multilingual communication in hospitals as well as the advantages and challenges to using them as cited by the studies in this SLR.

7.2 Results

Following interpreters, written translated hospital documents ($n = 6$) were the second most-examined multilingual communication tool or strategy in this SLR, and these addressed this SLR's second-most noted type of barrier – namely, written language barriers. One study noted written online information that patients could access regarding up-to-date COVID-19 restrictions, and 1 discussed written hospital signs that were not translated into multiple languages. However, most of these studies ($n = 4/6$) investigated translated written discharge instructions that linguistic minority patients received.

After written translated documents, translation apps were the final category of multilingual tools that were examined. Here it is important to note that while the studies referred to these apps as “translation” apps, they were not always used strictly with written language barriers (as the term “translation” would suggest), but rather often straddled both written and spoken barriers with text-to-speech functions. Four studies investigated various

language translation apps including CALD Assist, Talk to Me, Google Translate and RadTranslate. The studies cited challenges equally, with 1 study each noting the following about a translation app: inaccurate or insufficient translation; translations were language/dialect-discordant; translations were not available in all needed languages; apps could be frustrating and confusing for both patients and healthcare teams; and that iPads with a translation app needed to be located more centrally in a hospital wing so that healthcare providers could locate them.

Two studies stated that an advantage of using the examined app was that it was low-cost. All other advantages were cited by 1 study each and included: the app could be used with varying degrees of technological literacy; the hospital staff found the app easy to organise; audio-visual aspects of the app were engaging and assisted in building rapport with patients; the app enabled faster medical assessments; and the app contained translations by certified medical trainers.

7.3 Discussion

7.3.1 Hospital Discharge Instructions

Hospital discharge instructions are a crucial part of a patient's recovery program, and provide them with key medical guidance, including pain management, medication dosing instructions, follow up appointments and emergency contingency plans. However, despite their importance, hospital discharge instructions are not always clear to patients and their caregivers (Harris et al., 2017). In a systematic review of the literature, Glick et al. (2017) found that parents of discharged paediatric patients often make mistakes in reading and understanding these instructions, and this leads to errors in medication dosing and schedule adherence as well as missing follow-up appointments. Another study by Albrecht et al. (2014) found that elderly adults are particularly at risk for not understanding and adhering

to discharge instructions' explanations of medication dosing, follow up appointments and diet recommendations, potentially due to age-related cognitive decline. Both of these studies examined patients who read language concordant discharge instructions, and these patients still had difficulty in understanding and remembering the health guidance. Karliner et al. (2012) compared discharge instruction comprehension among linguistic majority and linguistic minority patients and found that the linguistic minority patients were even less likely than their majority counterparts to understand and recall the type and purpose of their medications. The authors state, "Our findings support that increasing patients' medication understanding in their preferred language is an important component of interventions to prevent medication errors and reduce re-hospitalizations" (p. 7). These studies point to a need to not only provide patients with clear discharge instructions, but to also provide them in the language that patients will be most likely to understand in order to minimise potential negative health outcomes.

This SLR found that the availability and quality of translated written discharge instructions were not nearly as examined in current literature as the language support that interpreters provide. However, the 4 studies that did examine translated written discharge instructions did all point to what a crucial part they play in a patient's safe transition out of the hospital and in keeping them from experiencing negative health outcomes:

Hospital readmissions, emergency department revisits, and life-threatening illnesses are considered negative discharge outcomes. Among interventions for improving pediatric hospital-to-home transitions, discharge education is the most common feature linked to avoiding these negative outcomes. Written discharge guidance is an integral part of that education.

(Platter et al., 2019, p. 517)

When clinical practice patterns do not include the use of appropriate language assistance, as we report, the impact is not just to the individual but also to the entire population and is a feasible contributor to health disparities.

(Taira & Orue, 2019, p. 6)

Clear written communication is particularly important when children are leaving the hospital.... Although research on discharge instructions for LEP families is limited, there is evidence that they are more vulnerable to postdischarge errors than English-proficient families.

(Davis et al., 2019, pp. 2-3)

Of the 4 studies that examined translated written discharge instructions, only 3 commented on the challenges to using them. No overarching theme of challenges emerged as each noted challenge was only cited by 1 study. These challenges were: inaccurate or insufficient translations; hospital staff lacked awareness of the existence of the language service; patients lacked awareness of the existence of the language service; hospital staff lacked clarity on how to organise for translations; a lack of clarity regarding specific roles/scope of practice for healthcare teams and language service providers; the translation service itself was perceived as time-consuming; and translations were not available in all needed languages.

One study in this SLR examined a novel way to communicate discharge information to linguistic minority patients. The tool piloted in Lion et al.'s study (2019) was primarily targeted at linguistic minority patients' parents who needed to hear medical instructions rather than read them. In this case, the tool was a paper-based recordable card, much like ones that play a pre-recorded birthday message or song. This type of card was adapted into audio-recorded hospital discharge instructions that could hold up to three minutes of voice-

recorded information. In the study, staff interpreters worked with nurses to record the paediatric patients' discharge instructions and after-care information, and this card was given to parents along with standard written discharge information. Available interpreters in this study were qualified to interpret Spanish, Russian, Somali, Vietnamese, Ukrainian, Cantonese and Mandarin.

The study's authors noted that parents responded overwhelmingly positively to the recordable cards. Nearly half of the families reported listening to their card more than five times, and many said that they were happy to be able to share this information with family members and other caregivers. The authors further noted that linguistic minority patients tend to have a lower level of understanding of discharge instructions than their linguistic majority counterparts (see also Glick et al., 2017; Harris et al., 2017, as cited above), so the fact that this tool induced multiple rounds of listening may have meant higher levels of information comprehension. In this study's sample, 38% of the enrolled families had not completed more than an 8th grade education, and providing audio rather than written discharge instructions meant that any written literacy gap could be bridged.

In addition to being user-friendly for people with low levels of written literacy, the authors pointed out that this recordable card can also be used by people with low levels of technological literacy. Patients (and in this case, their families) did not need to be able to navigate online patient portals or complex technical information in order to use this tool. Because the card could only hold three minutes' worth of information, nurses were forced to distil their instructions to only the most pertinent, plain-language information. While some patients' families reported that they wished the card could hold more information, most stated that they appreciated not feeling overwhelmed with superfluous instructions or medical jargon.

With its low-tech, low-written literacy characteristics, the audio-recorded discharge card could be a solution for a hospital that is looking to ensure that linguistic minority patients have access to discharge instructions in their preferred language. What is more, this tool addresses the second most-noted language barrier that this SLR found – namely the fact that linguistic minority patients do not always have the levels of written literacy needed to understand majority language written communication. The audio-recorded instructions are an alternative mode of traditionally written information that can be utilised with any patient with low levels of written literacy. This is an example of a multilingual tool that works to address barriers to written literacy by functioning through a spoken, rather than written, medium. This concept is also seen in the final category of tools that were examined in this SLR – translation apps.

7.3.2 Translation Apps

As stated previously, these apps were referred to as “translation” apps by the SLR studies, but in reality they combined both spoken and written communication. The 4 studies in this SLR that examined a translation app mostly did so from the perspective that the text-to-speech format of the app was to be used in lieu of or as a supplementation to the spoken language services of an interpreter:

The ability to convey essential care needs (eg addressing pain, help with hygiene), communicate simple safety messages, and provide orientation cues are essential in health care settings.... However, because of issues related to cost, access, availability, and time constraints, use of professional interpreters in health care is often limited to specific aspects of care, such as comprehensive assessments, procedural consent, diagnosis, and the development of treatment plans....Through the widespread uptake of mobile devices, technology enabling language translation has been

identified as a potential way to improve communication between patients and staff in health care settings when used as an adjunct to professional interpreters.

(Panayiotou et al., 2019, p. 2)

Mobile translation apps that can easily be downloaded onto a smartphone could provide an innovative solution to overcome language differences in risk-free healthcare settings in the absence of an interpreter, particularly in the hospital setting.

(Hwang et al., 2022, p. 579)

The traditional approach to ensuring patient safety and appropriate communication in clinical settings has been to use professional interpreters. This model has worked with much success, but as human migration increases and health service budgets are placed under increasing pressure, interpreters are not always available to assist in a timely manner.... Mobile technology has been recognized as a potential solution to interpreter availability, with Web-based tools and apps available for use.

(Freyne et al., 2018, p. 2)

Language concordance is most commonly achieved through real-time direct translation services using certified medical interpreters....Many LEP interventions, including the use of remote interpreters, may not be operationally feasible for urgent and emergent radiology settings in which there is expected rapid throughput of patients and both interpreters (in person or remote) and imaging equipment are limited resources.....(therefore) a web application was developed (to provide) examination instructions to patients in their preferred language.

(Chonde et al., 2021, p. 1001)

While it would be reasonable to assume that more technological language services like translation apps are on the rise, this SLR demonstrates that they are not as ubiquitous as some might think. It is noteworthy that only 4 studies in this SLR examined translation apps. Even with advances in technology, human interpreters are still heavily relied upon to facilitate multilingual communication in hospitals, and the translation apps are typically used in conjunction with interpreters. Importantly, 2 out of these 4 studies that examined a translation app specifically stated in the above passages that the apps were to be used in “risk-free” or “simple” hospital scenarios when communication could not be facilitated by an interpreter. It is possible that the general public has assumed that apps like Google Translate have made the practice of healthcare interpreting automatic and therefore ubiquitous, but currently available apps are actually much more restricted than this. Most translation apps can only be used in low-stakes medical encounters because they only contain text-to-speech pre-set phrases. They cannot act as human interpreter substitutes in high-stakes medical encounters such as conducting medical assessments, taking a medical history, obtaining consent or discharging a patient because they do not facilitate complex back and forth communication in the way that human interpreters do (Panayiotou et al., 2019).

One app that was examined by a study in this SLR was notable in its strategic use of these pre-set text-to-speech phrases during (importantly) low-stakes medical encounters. RadTranslate is an app developed by the study’s authors (Chonde et al., 2021) that can provide spoken radiology examination instructions in multiple languages. This app was originally developed in the United States after the start of the COVID-19 pandemic. The authors note that the need for chest x-rays had increased significantly at this time, as had the need for remote interpretation services. In order to reduce the workloads of both

interpreters and radiology staff members, the authors consulted radiologists, technologists and operations managers to develop standard “scripts” that linguistic minority patients could listen to before a scan. Certified bilingual staff members then translated those scripts into Spanish. Then, the authors used a synthetic text-to-speech program to “read” and record the Spanish scripts using human-sounding voices. Most of the scripts consisted of examination instructions and guidelines for how the patient should remove clothing and jewellery prior to receiving the chest x-ray. Finally, the voice recordings were added to the RadTranslate app which was then accessed and listened to by the patient on an iPad in the examination room.

The authors found that radiology staff members reported that RadTranslate made their jobs easier by streamlining and standardising their workflow. Even more importantly, Spanish-speaking patients who used RadTranslate had a statistically significant reduction in the variability of imaging appointment duration as compared to patients who did not use RadTranslate. The authors believe that this particular result demonstrates that RadTranslate decreased linguistic minority patient confusion when a language barrier was present by removing the language barrier.

RadTranslate is notable in how relatively inexpensive it is (corresponding to the most-cited advantage that this SLR found to using translation apps), as well as the fact that it can be used with low levels of technological literacy. Two studies in this SLR documented patient or hospital staff concerns about how expensive a language service was or was perceived to be, so while this is not a widely cited concern, it is one that can exist (Kwok et al., 2021; Wurth et al., 2018). Five studies in this SLR noted that either healthcare providers or patients had difficulty using a language service because of a technological aspect, so this general concern is also worth considering (Barreto et al., 2021; Kucirek et al., 2021; Lion et

al., 2019; Nápoles et al., 2019; Payvandi et al., 2022). RadTranslate addresses both of these concerns. The authors state that the app itself is free and can be used on any tablet, computer or phone with a speaker. In the pilot study, the tablet, mobile stand and Bluetooth speaker cost a total of USD \$238 and were used in over 1,200 patient interactions. Neither the patients nor healthcare staff were required to possess high levels of technological literacy in order to use the app. The website can be bookmarked on a device, and the patient simply needs to press the triangular “play” button to listen to each set of instructions. This tool is also useful in that it does not require the patient to be able to read a written language, whether their preferred language or English. Some immigrant populations tend to have lower rates of written literacy than their non-immigrant counterparts (PIAAC, 2017), so this feature is particularly important when these populations need access to healthcare.

Since the pilot study in 2020, RadTranslate has expanded to feature not only Spanish, but also Portuguese, Mandarin, Italian, Korean and Romanian. In addition to chest radiography, it also now offers instructions for mammography, COVID screening, falls risk screening, COVID vaccinations and paediatric examinations for both parents and children.

The study that examined RadTranslate demonstrates that translation apps can be very useful, but they cannot be used in all types of medical encounters. Technology like RadTranslate acts as a database of human-translated and audio-recorded scripts, but this is not the same as language mediation through a human interpreter because there is no possibility for two-way communication. Importantly, a medical encounter must be low stakes enough that an app’s pre-set phrases will be sufficient to give necessary information to a linguistic minority patient. While translation apps cannot currently replace human

interpreters, they can be used in information-giving medical encounters in order to free up interpreters so that they can be more easily available in more high stakes situations.

7.4 Conclusion

Written translated discharge instructions and translation apps followed interpreters as this SLR's second and third most examined tools and strategies used to facilitate multilingual communication in hospitals. In the next chapter, I will conclude this thesis by revisiting the research questions and discussing how this SLR's results could lead to recommendations for future research. Finally, I will conclude by explaining how this SLR will lead to my own PhD research.

8. Conclusion

8.1 Overview

This thesis has analysed current literature that investigated language barriers between linguistic minority patients and linguistic majority hospital staff and healthcare providers. This was done through a systematic literature review of studies published from 2018 to 2023 that examined how hospitals manage linguistic diversity among patients and staff on a day-to-day basis. The responses to Research Questions 1, 2 and 3 were quantitatively reported, and thematic analysis (Braun & Clarke, 2012), an analytical framework that examines patterns of meaning within data points, was used to identify and categorise qualitative data that answered Research Question 4. This study aimed to synthesise and contribute to existing knowledge by examining the types of language barriers that exist in hospitals, how hospital staff assess a patient's language proficiency, the tools and strategies that hospitals use to facilitate multilingual communication between patients and staff, and what the advantages and challenges to using these tools and strategies are.

This chapter concludes this thesis. I will first revisit this study's research questions and answers, and I will identify gaps in the current knowledge. I will then discuss how I plan to continue exploring this research over the course of my PhD.

8.2 Revisiting the Research Questions

8.2.1 What types of language barriers exist between patients and staff in hospitals?

This SLR found that spoken and written language barriers within hospital settings are known and commented on in current literature. Spoken language barriers were examined more than any other type, with 42 out of 50 studies included in this SLR noting a spoken language barrier. As explained in Chapter 3, spoken communication between healthcare

providers and linguistic minority patients is an integral part of managing a patient's care in the hospital – from explaining medical procedures to obtaining consent to managing pain and more.

This SLR also found that the literature does not examine written language barriers nearly as much as spoken barriers. As it is known that properly understanding and adhering to written discharge instructions leads to better health outcomes, making sure that patients have access to readily available and correctly translated written documents is crucial to ensuring linguistic minority patients' health and safety. In addition, both spoken and written language barriers often co-occur with lesser-known barriers, such as barriers to health literacy, technological literacy, healthcare system literacy and academic literacy. As can be seen from this SLR's data, however, the academic literacy levels of patients (and the ways in which that intersects specifically with written language barriers) are not often examined in existing literature. In this SLR only 2 studies examined this topic, and even then, it was only briefly. This finding of a significant gap in the literature is a noteworthy discovery, and a more holistic view of communication barriers is needed (Piller, 2023).

8.2.2 How do hospital staff assess a patient's language proficiency and need for a multilingual communication strategy?

Relatedly, this study found that much of the current literature does not examine this question at all, or at best, that the answer to it is under-reported. Of the studies that did report this, admission and triage staff were most often cited as being responsible for this task. However, there is no widely accepted protocol or procedure that instructs admission staff members on how to perform this assessment in a way that will not only recognise a patient's need for a multilingual communication strategy, but also provide ongoing language support for the entirety of their hospital admission. This points to a clear gap in multilingual

service provision to support admission staff members in not only determining if a patient needs a multilingual communication strategy but also in arranging for a language service that would provide comprehensive support to the patient for the duration of their stay.

8.2.3 What current tools/strategies do hospitals use to overcome language barriers between patients and staff and provide inclusive communication?

In line with the finding that most language barriers are spoken, interpreters are, by far, the most utilised type of language support that hospitals use to overcome language barriers between patients and staff. Types of interpreters include in-person professional, remote video, remote phone and ad hoc hospital staff or a patient's family member. The interpreters in this SLR's studies could be categorised as performing "roles" that Jalbert identified in his typology – they acted as Translator, Cultural Informant, Cultural Broker or Cultural Mediator, Advocate and Bilingual Professional.

Just as written language barriers were the second most-noted type of barrier examined in this SLR, written translated hospital documents were the second most-noted multilingual tool/strategy that was examined. However, translated hospital discharge instructions, one of the most crucial ways of communicating healthcare information with a patient, were only examined by 4 out of 50 studies. What this shows is that much more research needs to be done into examining not only the availability but the quality of these translated instructions.

Translation apps were the final category of multilingual tools to be examined, and they straddled both spoken and written language barriers with their incorporation of both text and speech functions. Most of these apps acted more as a database of translated phrases rather than true translation tools, and while it may be easy to assume that their

utilisation is on the rise in the digital age, the fact that few studies in this SLR examined them showed that this is not yet the case.

8.2.4 What are the advantages and challenges to using these tools and implementing inclusive communication strategies?

In terms of interpreters, the theme of time constraints in organising and participating in an interpreting session appears to be a major factor in a healthcare provider's decision to utilise an interpreter or to try to "get by" without one. Understanding more about how time pressures affect this decision will be an important area of future research. Technologically-mediated interpreting via the Vocera SmartBadge and the Interpreter on Wheels were novel ways in which healthcare providers could circumvent time constraints to access an interpreter quickly, and more research into these types of technology could play an important role in allowing healthcare providers and linguistic minority patients to access interpreters more quickly in the future.

While no single overarching challenge was cited with the utilisation of translated hospital discharge instructions, this SLR found that linguistic minority patients' written literacy levels must be considered when providing them with instructions, even when translated into their preferred language. The study that examined the audio-recorded (rather than written) discharge instructions was indicative of the direction that future research could take when seeking to understand how to provide hospital discharge instructions to linguistic minority patients with low levels of written literacy.

Finally, the studies that examined translation apps demonstrated that they are useful in supplementing low-stakes spoken information typically given by an interpreter, but they cannot be used to convey information in a high-stakes medical environment because they are not capable of two-way communication between healthcare provider and patient.

The study that examined the use of RadTranslate demonstrated how this low-stakes information could be conveyed via an app in order to free up human interpreters to facilitate more high stakes communication.

8.3 Directions for Future PhD Research

One of the most notable (and surprising) discoveries that I made while conducting this SLR was the current distinct lack of any comprehensive language proficiency assessment protocol and language service booking procedure in hospitals. To fill this gap, my PhD research will examine how hospitals assess their patients' English language proficiency and integrate any required language supports into their processes and procedures for the duration of the patient's hospital stay. As seen in Chapter 5 of this thesis, this is a particularly understudied part of hospital language support, and my PhD research will utilise a sociolinguistic ethnographic methodology, including single and focus-group interviews and participant observations. I intend to co-design this research together with key stakeholders, for instance by conducting a Group Level Assessment. A Group Level Assessment is structured much like a focus group and is a "structured qualitative participatory method that allows participants to directly produce and analyse data in an interactive group session" (Choe et al., 2019). I would like to conduct this with the people most likely to be responsible for assessing proficiency and booking language support services – namely, hospital receptionists. The aim of my future PhD research will be to contribute to better support for linguistic minority patients, and ultimately to more equitable healthcare access for this population.

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9. APPENDIX A

List of SLR Studies

1. Ali, P. A., & Watson, R. (2018). Language barriers and their impact on provision of care to patients with limited English proficiency: Nurses' perspectives. *Journal of Clinical Nursing*, 27(5-6), e1152-e1160. <https://doi.org/10.1111/jocn.14204>
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10. APPENDIX B

Minutes of Moderation Session

In order to satisfy Section 8 of the systematic literature review PRISMA checklist (PRISMA, 2020), the author met with her research team (eight researchers from *Language on the Move*) to determine the eligibility of the fifty studies over the course of a moderation session. The author led the moderation with a presentation of her data-gathering methodology. This included explaining the PRISMA flow chart and the inclusion and exclusion criteria that led to the final selection of the 50 articles for study inclusion.

The team then went through all criteria used for the selection of the first three studies, Alkhaled 2022; Baretto 2022; Blay 2018 (ordered alphabetically) and discussed how they each met the criteria for inclusion. The panel agreed on their inclusion. The panel then proceeded to the next seven articles (listed alphabetically) with a focus on the inclusion criteria with the author explaining and clarifying details about how those were met. Panel members asked clarifying questions, and the author explained how each study met the inclusion criteria.

For the remainder of the data, the panel approved of any study where two, three or four inclusion criteria were met. After this, five studies remained that only satisfied one inclusion criteria. Starting with Plocienniczak 2022, the panel screened them for their inclusion. Upon a rigorous discussion based on the inclusion criteria, the panel agreed that all five studies should be included in the systematic review.

11. APPENDIX C

Data Extraction Reporting Example - Ali & Watson, 2018

Authors	Ali, P.A. & Watson R.
Title	<i>Language barriers and their impact on provision of care to patients with limited English proficiency: Nurses' perspectives</i>
Year	2018
Keywords Searched	<i>limited English proficiency hospital</i>
Country	<i>England</i>
RQ1 What types of language barriers exist between patients and staff in hospitals?	Verbal - Communication between nurses and patients Written - Participants felt that LEP patients might not comprehend the reason for their appointment, even when the information is sent to them via a letter. They considered that the ability to speak English is related to the ability to read English and a person who cannot speak English is not likely to be able to read information written in English.
RQ2 How do hospital staff assess a patient's language proficiency and need for a multilingual communication strategy?	Not stated
RQ3 What current tools/strategies do hospitals use to overcome these barriers and provide inclusive communication?	Interpreters (in general)

12. APPENDIX D

Data Coding Scheme

RQ4 What are the advantages and challenges to using these tools and implementing inclusive communication strategies?

*“Participants acknowledged the usefulness of interpretation services in dealing with language barriers and the provision of safe care to LEP patients. However, the majority of the participants recognised limitations associated with use of interpretation services. These include **CHALLENGES** arrangement difficulties, availability and accessibility of interpreter services, convenience, confidentiality and privacy-related issues and impact on the patient’s comfort.*

*Participants mentioned that the situation requiring communication with a patient could also be very complex. Most organisations prefer to use telephone interpretation services; however, there were various issues associated with it. For instance, it requires **CHALLENGE** extra time by a clinician as well as a patient as Danny stated, ‘Communicating through an interpreter can take very long. It’s even more complicated when the patient is not fully conscious, **CHALLENGE** how can you ask a semiconscious patient to talk to an interpreter on the phone?’*

*Participants thought that **CHALLENGE** interpreters do not always understand the medical terminology and this result in misinterpretation resulting in miscommunication of the information, which is neither cost-effective nor efficient.”*

13. APPENDIX E

Covidence Data Coding Template

1) Study title	
2) Study authors	
3) Keywords searched (Tick one)	☐ limited English proficiency hospital ☐ “linguistically diverse” hospital ☐ “limited English proficiency” “hospital” “language” “language barrier” “healthcare access”
4) Database searched (Tick one)	☐ PubMed ☐ Google Scholar
5) Country in which the study was conducted	
6) Aim of study	
7) Data collection method	
8) Inclusion criteria (at least one) (Tick all that apply)	☐ Tool or strategy used to overcome language barriers ☐ Advantages and challenges to using tools to overcome language barriers ☐ Type of language barrier ☐ How hospital staff assess a patient’s language proficiency and need for multilingual communication strategy
9) What types of language barriers exist between patients and staff in hospitals? (Tick all that apply)	☐ Spoken ☐ Written ☐ Technological literacy ☐ Health literacy ☐ Academic literacy ☐ Hospital/Healthcare system literacy
10) How do hospital staff assess a patient’s language proficiency and need for a multilingual communication strategy? (Tick one)	☐ Not stated at all ☐ Upon hospital admission or triage ☐ Not explicitly stated - the healthcare provider potentially identified the need for language services ☐ Not explicitly stated - the language preference is listed in the EMHR, but it is unclear who entered that information

11) What tool or strategy does the hospital in this study use to overcome language barriers and provide inclusive communication? (Tick all that apply)

- ☐ Interpreters (in general, unspecified)
- ☐ Interpreters (in-person, professional)
- ☐ Interpreters (phone, professional)
- ☐ Interpreters (video, professional)
- ☐ Interpreters (ad hoc hospital staff and/or patient family members)
- ☐ Translated written discharge instructions
- ☐ Translation app
- ☐ Interpretation app
- ☐ Other (specify)

12) What are the advantages and challenges to using the specified tool(s) and implementing inclusive communication strategies? (Tick all that apply)

1. Challenge - Language service not available at all hours
2. Challenge - Too few language service providers
3. Challenge - Patient/Patient's family does not want to use the language service
4. Challenge - Language service is language/dialect-discordant
5. Challenge - Language service is expensive
6. Challenge - Confidentiality and/or privacy concerns
7. Challenge - Language service itself perceived as time-consuming
8. Challenge - Time constraints in organising language service
9. Challenge - Language service providers untrained in specific medical terminology
10. Challenge - Language service not available in all needed languages
11. Challenge - Need to book the language service far in advance
12. Challenge - Lack of clarity on how to organise language service (patients)
13. Challenge - Lack of clarity on how to organise language service (hospital staff)
14. Challenge - Lack of clarity regarding specific roles/scope of practice for healthcare team and language service providers
15. Challenge - Overestimation of language proficiency (patients)
16. Challenge - Overestimation of language proficiency (language service provider)
17. Challenge - Lack of trust between healthcare providers and interpreters
18. Challenge - Lack of awareness of the existence of the language service (patients)
19. Challenge - Lack of awareness of the existence of the language service (hospital staff)
20. Challenge - Lack of access to technology (patients)

21. Challenge - Language or situation deemed too complex for any service other than in-person interpreter

22. Challenge - Inaccurate or insufficient translations/interpretations

Challenge - Other (specify)

A. Advantage - Interpreter as patient advocate/cultural broker

B. Advantage - Family member as patient advocate/cultural broker

C. Advantage - More confidentiality and/or privacy compared to other types of language services

D. Advantage - Language service can cater to a wide variety of languages

E. Advantage - Language service is low-cost

F. Advantage - Language service is easy to organise (patients)

G. Advantage - Language service is easy to organise (hospital staff)

H. Advantage - Language service is quickly available

I. Advantage - Language service is available all or most hours

J. Advantage - Language service is easy to use

K. Advantage - Language service can be used with varying levels of technological literacy

Advantage - Other (specify)

14. APPENDIX F

Data Synthesis with Coding Example - Ali & Watson, 2018

Authors	<i>Ali, P.A. & Watson R.</i>
Title	<i>Language barriers and their impact on provision of care to patients with limited English proficiency: Nurses' perspectives.</i>
Year	<i>2018</i>
Keywords searched	<i>limited English proficiency hospital</i>
Database searched	<i>PubMed</i>
Country in which the study was conducted	<i>England</i>
Aim of study	<i>To explore nurses' perspectives of language barriers and their impact on the provision of care to patients with limited English proficiency from diverse linguistic background.</i>
Data collection method	<i>Interviews/Focus Group Discussions</i>
Inclusion criteria	• <i>Advantages and challenges to using tools to overcome language barriers</i> • <i>Tool or strategy used to overcome language barriers</i> • <i>Type of language barrier</i>
Types of language barrier(s)	• <i>Spoken</i> • <i>Written</i>
How hospital staff assess a patient's language proficiency and need for a multilingual communication strategy	<i>Not stated at all</i>
Tool or strategy that hospital uses to overcome language barrier between staff and patients	<i>Interpreters (in general, unspecified)</i>

***Advantages and Challenges -
Interpreters (in-general, unspecified)***

- 1. Challenge - Language service not available at all hours***
- 2. Challenge - Too few language service providers***
- 6. Challenge - Confidentiality and/or privacy concerns***
- 7. Challenge - Language service itself perceived as time-consuming***
- 9. Challenge - Language service providers untrained in specific medical terminology***
- 21. Challenge - Language or situation deemed too complex for any service other than in-person interpreter***

15. APPENDIX G

PROSPERO Systematic Review Registration

This study was registered with PROSPERO (International prospective register of systematic reviews) on 22 May 2023.