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REVIEW

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Impacts of language barriers on perceived quality of care in physical therapy: a systematic review

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Abstract

Introduction Language barriers are prevalent across growing societies and are likely to become a larger issue with further population growth. Language barriers impair communication between patients and physical therapists. This systematic review addresses how language barriers between patients and physical therapists impact clinicians' perceived quality of care.

Methods A stepwise search of databases based on key terms was conducted, followed by abstract and full-text screenings with inclusion and exclusion criteria. Eight articles were included in the final review.

Results Screening processes resulted in the inclusion of eight articles from which abstracted information was sorted into six different categories. In total, six articles addressed overall clinical perception, four articles spoke of interpretive services, seven articles detailed methods of communication in practice, five articles on tests and measures, four articles on establishing rapport, and two articles factored cultural components.

Discussion Collected information was analyzed within topics of patient interactions, interpretive services, visit mechanics, and clinician's perception of self. These themes demonstrated that language barriers can negatively impact clinician-perceived care quality. Examples include limiting the collection of patient history, usage of standardized tests, and other aspects of best practice, ultimately hindering clinician autonomy.

Conclusion There are benefits and disadvantages to communication methods used within clinical settings for therapists when negotiating language barriers. Legislation often states that interpretive services must be provided to patients but does not delineate specific guidelines. Governing bodies in physical therapy could provide more formalized guidelines and education to address language barriers in practice.

Keywords Physical therapy, Language barriers, Care quality, Perception, Interpreter, Communication, Rehabilitation

Introduction

Language barriers are communication deficits between individuals who do not speak a common language, resulting in a reduced ability to exchange information. Language barriers inherently present challenges in many fields; however, this can be particularly significant in healthcare, when information provided by a clinician is pertinent to patient wellbeing [12]. In the USA, 1 in 5 households spoke a language other than English at home in 2011 [13], and 63.7 million individuals spoke a language other than English at home in 2018 [16]. Projected population growth anticipates rising numbers of US residents who do not speak English as their primary language, as the percentage of individuals with language proficiency in a language other than English is expected to increase from 2005 to 2050 [11]. Healthcare professionals

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must be prepared to encounter and effectively manage patients in the presence of a language barrier as the number of individuals with limited English proficiency (LEP) in the US continues to rise [9]. Given the significance of quality communication to healthcare outcomes, legislation has been enacted requiring the implementation of appropriate interpretive services for patients with LEP [9]. Title VI of the Civil Rights Act, and the Affordable Care Act, prohibit federally funded health care facilities from discriminating against individuals based on national origin, mandating that those with LEP be offered appropriate language services to enable meaningful access to healthcare [9]. However, language barriers and limited access to language resources persist despite federal requirements [9]. Frequently cited barriers to the use of language services are expense, and availability and relatively high costs and inconsistencies in the quality of interpretive services may impose barriers to many physical therapy practices in implementing such services [10]. Thus, language barriers often pose challenges in healthcare environments despite legislative attempts to remedy the situation [1]. For the purposes of this review, language barriers are defined as communication deficits between individuals who do not speak a common language resulting in a reduced ability to exchange information, and quality of care is the degree to which desired outcomes are achieved by clinical interventions.

Physical therapy involves a great deal of patient-provider communication to produce optimal outcomes, and a lack of effective communication due to language barriers may be detrimental to the quality of care [2]. Physical therapy involves extensive patient education in terms of movement patterns, weight-bearing precautions, exercise and prognostic guidelines, disease management, and lifestyle modifications, which must be well-understood by the patient to attain optimal outcomes [2]. With the presence of a communication barrier, patients risk further injury if they do not fully understand the measures required to maintain safety in postoperative or post-injury scenarios. Without a proper understanding of exercise form, particularly with home exercise programs in an unmonitored environment, patients may not achieve the same level of benefit as a patient with a full understanding of instructions from their provider. Without effective communication regarding pathology or lifestyle management associated with a particular diagnosis, patients will not know how to effectively manage their condition following the cessation of their episode of care, and thus, their prognosis is negatively impacted. In addition, patients must inherently trust their physical therapist to adhere to provided instructions, and language barriers can create difficulty in establishing rapport between a patient and their provider, ultimately reducing participation and engagement in treatment [10]. To achieve maximal clarity of education, encourage adherence to provider recommendations, and attain optimal outcomes, effective communication is pertinent [2]. Any detriment to the clarity of communication, such as a language barrier, could cause negative impacts on physical therapy care quality [10] and patient health outcomes.

With rising numbers of individuals with LEP, healthcare professionals will continue to be faced with language barriers when communicating with patients. In rehabilitation professions, such as physical therapy, that necessitate a high level of communication between provider and patient for optimal outcomes, language barriers could be anticipated to have a negative impact on outcomes and quality of care. With little research that provides a direct, objective assessment of the impacts of language barriers on physical therapy outcomes [10], this systematic review aims to investigate the perceived impacts of language barriers on the quality of care in physical therapy and answer the question, how do language barriers between patients and physical therapists impact clinician's perception of provided care quality? Collection and review of available information on this topic are pertinent to developing a better understanding of this issue and establishing plausible approaches to addressing language barriers in physical therapy. Once the impacts of language barriers on physical therapy practice have been clarified, more focus can be placed on the optimization of interpretive services and modification of legislation and corporate policies to ensure high quality of care in the presence of a language barrier, ultimately working to resolve discrepancies in rehabilitation outcomes.

Methods

This qualitative systematic review involved a predetermined, stepwise search of databases based on key terms. A preliminary abstract screening process was utilized to determine the relevance of articles located during the initial search process, and then more detailed, full-read inclusion, and exclusion criteria were employed to select articles to be included within the systematic review. Once articles were selected, they were thoroughly read and evaluated for inclusion in the completed systematic review.

Members of the research team utilized the Lebanon Valley College Vernon and Doris Bishop Library search engine to explore databases, including PubMed, MEDLINE, and Google Scholar, for article availability. Upon initial informal searching for articles pertaining to language barriers and physical therapy, these three databases were found to contain the largest body of results in this area. Focusing the systematic search on a limited number of relevant databases served to reduce extraneous search

results. A research librarian was consulted on the use of databases and assisted two research team members in the development and performance of the searches. Search strategies were tracked with a chart system to ensure organization, thorough documentation of specific search terms implemented, and results yielded from each search. All searches were conducted between September 15 and October 15 of 2023.

A subset of the research team, comprised of three independent reviewers, performed a screening process to determine which articles yielded from the initial searches were to be included in the systematic review. Inclusion and exclusion criteria were established to perform preliminary abstract screenings of articles located during the search. Abstract inclusion criteria consisted of articles using the terms physical therapy, language barrier, communication, rehabilitation, and quality. This aided in the localization of articles that specifically addressed the research question and key points of this systematic review. Abstract exclusion criteria ruled out articles including the terms healthcare, student, and physician. This served to eliminate articles containing extraneous information regarding other healthcare providers beyond physical therapists, as well as student works or research related to unlicensed student physical therapists, to maintain the scope of the review and ensure the reliability of the content contained within selected articles.

Once abstract screenings were performed and a collection of relevant articles was developed, more specific full-read inclusion and exclusion criteria were employed to determine which articles effectively addressed the established research question. Full-read inclusion criteria required the inclusion of articles with content pertaining to physical therapy, limited English proficiency (LEP), language proficiency, communication barriers, language barriers, quality, communication, rehabilitation, and terms indicative of content "pertaining to clinician's perspective." This ensured the selection of articles with a high level of relevance to the research question with the usage of key terminology pertaining to this review. Full-read exclusion criteria required the exclusion of articles containing content related to healthcare, health literacy, student, provider, and physician. This specification, much like the abstract exclusion criteria, worked to limit articles pertaining to healthcare professions besides physical therapy and ultimately reduce extraneous results. Table 1 summarizes the search terms utilized to locate articles—only those chosen for inclusion in the review have been displayed in this graphic. Figure 1 provides a visualized flowchart of the results of the implementation of inclusion and exclusion criteria for both the abstract and full-text screening, and Fig. 2 is a pie chart displaying the search engines from which these selected articles were derived. All articles collected from this process utilized qualitative methodological approaches, largely due to the relatively subjective nature of the research question.

Once articles were selected based on full-read inclusion and exclusion criteria, the Mixed Methods Appraisal Tool (MMAT) [6] was implemented to quantify the reliability and quality of the selected articles' qualitative methodological approaches (Fig. 3). The MMAT was specifically selected as it is a well-rated and reliable critical appraisal tool for application in articles with mixed methods or qualitative approaches [6], and the criteria offered within its rating process were highly applicable to the literature selected within this review. Following the performance of the MMAT on the selected articles, three independent reviewers thoroughly re-read the selected articles for a collection of content to be included in the systematic review. The reviewers organized summaries of article content into a shared document, and once summaries of article content were organized, the information was reviewed and discussed by the research team. Reviewed information culminated in the completed systematic review to answer the research question: do language barriers between patients and physical therapists impact clinician's perception of provided care quality? Table 2 depicts key information regarding the contents of the selected articles.

The authors declare that they have no pre-existing affiliations or monetary gain associated with any of the publishers or authors selected for inclusion in this systematic review.

Results

After a thorough search, eight articles met inclusion criteria for both the abstract and full-text screenings and evaluations. Figure 1 details the criteria used in the selection process. Across the eight included articles, five articles included data directly sourced from a total sample of 2078 physical therapists from across the USA and Europe. The remaining three articles collected data through scoping processes or case reports. Several common themes emerged from the included literature and thus have been grouped together for clarity.

Overall clinical perception

Sources from our review shared similar sentiments regarding the overall clinical perception of language barriers and their impact on quality of care. Physical therapists noted that when language barriers were present, treatment was less effective [5] and that the ability to give instructions and information to patients with language barriers was impaired [3]. Therapists perceived that patients and caregivers experienced service limitations related to language barriers and limited resource

Table 1 Search criteria for selected articles

Line in search field (1)	Line in search field (2)	Line in search field (3)	Database	Number of results yielded	Article title
"physiotherapy*" OR "physical therapy*"	"communication barrier*" OR "limited English proficiency" OR "limited English" OR "non-English" OR "language barriers"	confidence OR perception OR perceive OR opinion	MEDLINE complete	53	Walking the talk: Understanding how Language barriers affect The delivery of Rehabilitation service Indicators of Quality Rehabilitation Services for Individuals with Limited English Proficiency: A 3-Round Delphi Study
"physical therap*" OR physiotherapy*	"communication barrier*" OR "limited English proficiency" OR "limited English" OR "non-English"	confidence OR perception OR perceive OR opinion OR attitude	MEDLINE complete	79	Physical Therapists' Perceptions Regarding Language and LanguageRelated Barriers in Clinical Settings Perceptions of Spanish Speaking Individuals Regarding the Impact of Language Barriers on Physical Therapy Interventions: A Pilot Study
("Physical Therapy") AND "Communication Barriers"[Majr]			PubMed	14	Tackling the language Barrier to implementing Research into practice: A Survey of usage of the Physiotherapy Evidence Database
"communication barriers"[MeSH Terms] OR communication barriers[Text Word] AND "language differences"			PubMed	39	Overcoming language barriers to provide telerehabilitation for COVID-19 patients: a two-case report
Derived from "Walking the Talk.." article references				58	Barrier and facilitators to cultural competence in rehabilitation services: a scoping review Lost in translation: exploring therapists' experiences of providing stroke rehabilitation across a language barrier

Table 1 depicts the search criteria that were utilized to initially locate each of the articles from this systematic review. Headers describing lines 1–3 within the table refer to a search field utilized within the search engine, and the database and number of search results are also included within this table

availability [3]. Therapists believed that patients understood less during and after treatment, that their outcomes were not as robust, and that less could be achieved during their sessions [5] when language barriers were present. Working with patients with language barriers caused frustration and "affected clinicians' job satisfaction, how they perceived themselves as professionals, and the quality of services they provided" [10]. Furthermore, language barriers are not limited to spoken language and encompass other elements that are crucial to communication including culture, cognition, hearing ability, and nonverbal communication [15]. Physical therapists stated that the use of interpreters with fluent Spanish-speaking patients during treatment sessions increased the perceived quality of care provided [4]. Clinicians' access to databases in different languages reportedly improved

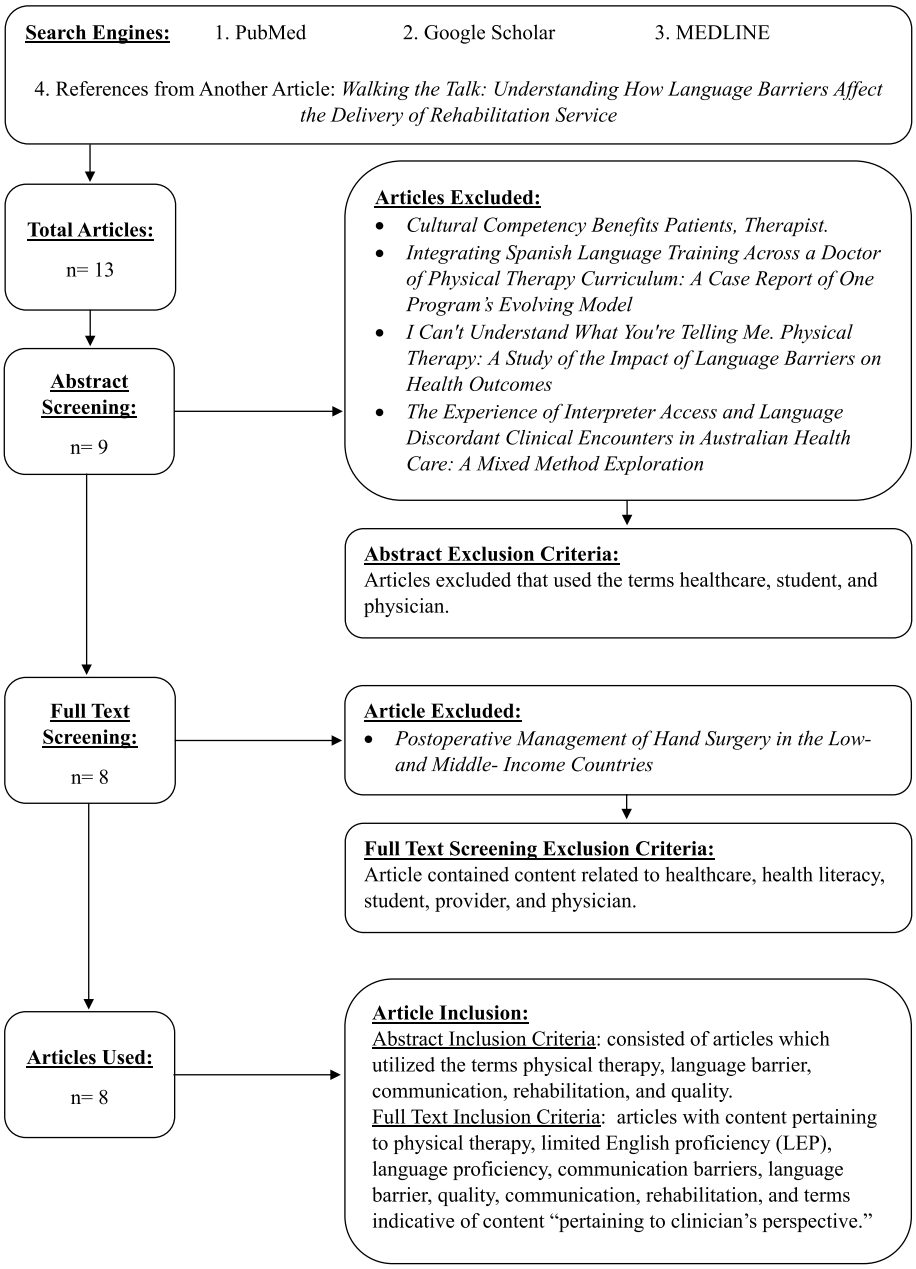

Fig. 1 Abstract and full-text screening criteria

their ability to reduce the language barrier. Having access to resources in different languages improved clinician confidence, their perceived ability to interact with patients, and their perceived quality of care [7].

Interpretive services

Therapist's experiences with the use of interpretive services within the clinical environment vary [3, 9, 10, 15], including feeling untrained in how to collaborate with interpreters and having no established protocols to follow [10]. According to Mirza et al. [9], interpreters are typically not trained in rehabilitation terminology or clinical scenarios. Interpreters' minimal knowledge of rehabilitation jargon was a common challenge reported by clinicians, leading to decreased trust in interpreters and their services [3]. Clinicians expressed that they questioned the credibility of interpreters [10] and that the use of interpreters often led to longer, less productive sessions [3, 10, 15]. Therapists also reported that needing an interpreter for a session resulted in patients

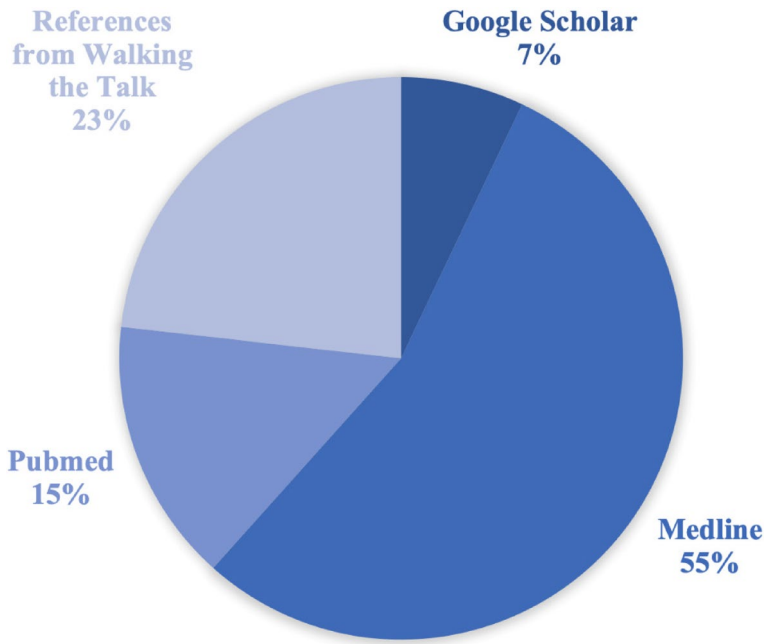

Fig. 2 Article derivations

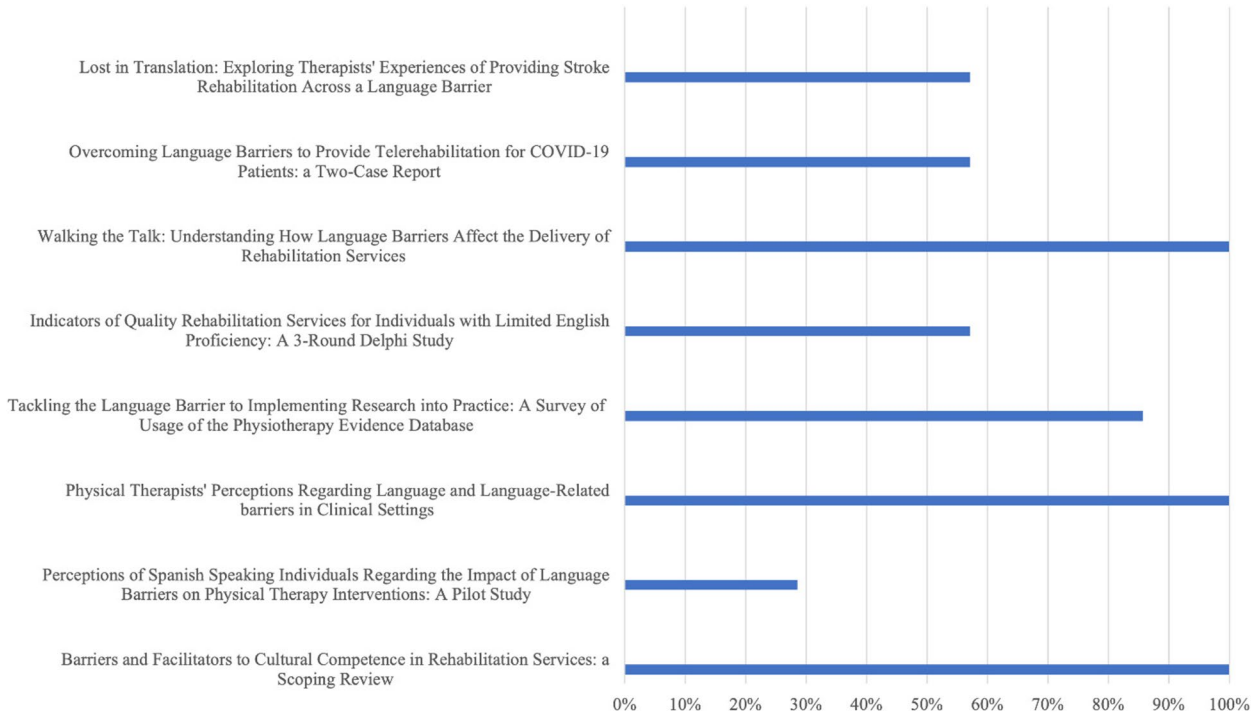

Fig. 3 Analysis of qualitative methodological approaches based on MMAT score

being seen less frequently, posed scheduling difficulties, and decreased their perceived efficiency and effectiveness of care [15]

Interpreter availability is limited for less common languages and dialects, which results in therapists being unable to assess or adequately manage this subgroup

Table 2 Overview of included articles

Study	Medical/rehab field	Location	Design of study	Number of participants	Study goals
[3]	Audiology, SLP, physiotherapy, and OT	Canada, USA, Malaysia, Austria, Germany, Australia, England, Netherlands, Scotland, Bangladesh, Oman, Singapore, and UK	Scoping review	4303 articles narrowed down to 31 eligible articles	Evaluate the current knowledge of barriers and facilitators related to cultural competency in rehabilitation services
[4]	PT	USA	Cross-sectional survey	30 patients whose primary language is Spanish	Examine if care quality for limited English proficiency patients is adversely affected by language barriers. Also identified Spanish-speaking patients' perceptions of their healthcare system encounters with rehabilitation services
[5]	PT	USA	Descriptive	2000 PTs who were members of the APTA and practiced in California counties with high populations of language minorities	Describe several different aspects pertaining to physical therapists' perceptions of care. These included clinicians' preferred methods of interpretive services and the effect of the interpretive services utilized on care. The physical therapist's overall perception of language-related barriers to patient interactions and outcomes was also Investigated
[7]	Physiotherapy	Unknown	A survey of usage of the physiotherapy evidence databases	2,828,422 pageviews were included in the analyses	To quantify use of the Physiotherapy Evidence Database (PEDro) website in different languages when retrieving research-backed resources and watching training videos on various physical therapy topics. This included the use of the online translation tool embedded within the website
[9]	OT, PT, nurses, psychology, and medicine	USA and Canada	Three-round Delphi study	30 experts	Gather rehabilitation experts' opinions on factors that are important to incorporate within rehabilitation services to provide optimal and accessible care for patients With limited English proficiency

Table 2 (continued)

Study	Medical/rehab field	Location	Design of study	Number of participants	Study goals
[10]	OT and PT	USA	Qualitative study	7 Spanish-speaking patients and 13 English-speaking OT and PT clinicians	Collect and evaluate English-speaking rehabilitation clinicians' experience related to decision-making processes, selection of communication strategies, and noted impacts on care when working with patients with a language barrier
[14]	PT	Japan	A simple three-item questionnaire or tele-medicine satisfaction questionnaire with five additional items	2 patients, one who did not speak the therapists' language and the other presented complete deafness	Evaluation of two different patient cases where telerehabilitation was determined to be successful in the face of a language barrier between the physical therapist and the patient
[15]	Physiotherapists, OTs, speech, and language therapists and a psychotherapist	UK	Qualitative study using focus groups	13 total participants consisting of physiotherapists, OTs, speech and language therapists, and a psychotherapist	Explore the experiences of English-speaking therapists when providing rehabilitation care to non-English-speaking patients

Table depicting the articles included in the systematic review, which medical/rehab field is represented, location of study, design of the study, number of participants, and study goals from each article. Different aspects of the systematic review articles were detailed within the table to create an overview of each source. Included aspects are the study's main author, the medical/rehab fields discussed in the article, the location of the study, the design of the study, the number of participants, and the goals of the study

of individuals [15]. Clinicians reported that they often viewed an interpreter as a "third person" in the session [15] and that additional personnel caused a loss of control of interactions, affected the therapist's ability to engage therapeutically with individuals, and reduced the perceived quality of rehabilitation [15]. This sentiment was exacerbated if therapists lacked trust in the accuracy of the interpretation provided [15]. Implementation of interpretive services varied based on context. Clinicians preferred to use interpreters during conversation-heavy sessions such as initial examinations, education sessions, and discharge sessions [10]. Under some circumstances, therapists chose not to utilize professional interpreters in favor of using family members, claiming that patients were less communicative during interactions with formal interpreters [10].

Methods of communication in practice

There are a variety of interpretive services that physical therapists can use to enhance the quality of care. Articles reported use of colleagues, virtual services, trained interpreters, and family members, among other means of communication, to overcome language barriers [3–5, 9, 10, 14, 15]. While the US federal laws mandate language-supportive services for care, it is reported that clinics do not fully utilize necessary interpretive services [4, 5, 9]. The method of interpretive service utilized during treatment sessions is at the discretion of the practicing clinician if no organizational policies are in place [5]. Some physical therapists reported not using formal interpretation services and favoring reliance on their own knowledge of the patient's primary language to efficiently treat patients [10]. While patients reported feeling appreciative of the efforts put forth by the practicing clinician, physical therapists have reported self-doubt when language discrepancies are present [10]. Some therapists use colleagues to assist in interpretive services as a convenient way to save time [10] because they may be more familiar with medical terminology than formal interpreters [5]. Other physical therapists, however, acknowledged that due to a lack of formal training in interpretive services, the use of colleagues as interpreters is not generally advised [3].

While some sources claimed discontent with the use of interpretive services, others had a different perspective [5, 10]. Services provided by trained interpreters are viewed as unbiased, as the conversation directly pertains to the patient's ailments without neglecting pertinent information [5]. Trained professionals encourage a better relationship between the physical therapist and their patients by acting as "cultural brokers" ([10], p. 307). With the help of in-person interpretation, clinicians reported their treatment sessions being seamless and efficient and helped to create a better communication dynamic between patient and provider [10].

Interpretive services can also be provided virtually. While these services are provided by trained professionals, concerns exist regarding the potential for inaccurate interpretation due to a variety of factors [10]. Devices such as cell phones and video monitors commonly used for remote interpretive services made the completion of certain therapeutic activities, like balance activities and toileting, challenging [9]. Although some physical therapists reported virtual interpretation services to be effective when communicating with patients using a different primary language, clinicians often resorted to yes/no questions to communicate [14], thus reducing the quality of the communication experience.

If the physical therapist is unable to provide effective and efficient interpretive services, patients may be accompanied by family members who serve as interpreters. The benefit of family members is that they are typically familiar with the patient's history, chief complaints, and additional factors like home environment and occupation [5]. While family members can help to resolve the communication barrier, some clinicians have limited confidence in the accuracy of the information provided and are unsure if family members influence or modify the patient's responses [5]. Although convenient, there is no guarantee that the information provided by a family member is reliable or accurate [10]. Family members may be too emotionally involved, or may not have the medical vocabulary necessary, to provide verbatim and unbiased interpretation [15] and have been identified as being more likely to answer questions from their own perspective than from the patient's [5, 15]. These factors may result in clinician frustration and impaired outcomes due to the omission or modulation of pertinent information [15].

Non-verbal communication facilitates establishing a therapeutic relationship with all patients, including those who speak a different primary language [15]. Therapists noted increased reliance on subtle forms of communication, like gestures, to efficiently provide rehabilitative services when a language barrier was present [15]. Although a valuable tool, physical therapists must be aware that non-verbal communication may have different meanings for individuals from different cultures [15]. Therapists noted instances where they found it challenging to pick up on non-verbal cues from patients who spoke a different primary language, which significantly affected the therapist's ability to assess for the presence of impairments, appropriately treat their patients, and negatively impact quality of care [15].

Tests and measures

There are insufficient educational materials and standardized rehabilitation assessment tools available for use when a language barrier is present [3, 10]. Physical therapists often perceived that the services provided to patients with LEP were "of a lower standard compared to what they were offering English proficient patients" ([10], p. 309). Most physical therapy assessment tools, outcome measures, and terminology have English derivation, including 80–90% of published research used to support the use of therapeutic interventions [7]. When working with patients with a language barrier, the terminology required to complete assessments often does not translate well into the patient's designated language or cultural context [3, 15]. However, assessments that could be translated and interpreted were noted to not be standardized [15], resulting in clinicians being unable to properly perform certain evaluations and treatments [5] or compare the results to established norms. Others noted "challenges with providing appropriate assessment materials, treatment planning, treatment materials, and treatment goals" ([3], p. 7) and an inability to effectively assess and treat two of the most common areas of assessment, pain, and sensation, due to language barriers [15].

Language barriers have led some physical therapists to employ a different approach to assessment, using a functional model rather than an impairment-based model [15]. Language barriers have prevented physical therapists from thoroughly discussing the patient's wants and needs and negatively impacted the establishment of goals after examinations [15]. Education and negotiation, strategies identified by physical therapists as part of collaborative goal setting with patients, presented a challenge to implement when language barriers were present [15], resulting in therapist perception that established goals were more likely to be therapist-derived [15]. Also, the decreased ability of therapists to establish an accurate functional baseline for the patient resulted in reduced ability to monitor progress over time [5]. Education in self-management, home exercise programs, and other written summaries were also difficult to provide to patients with language differences, hindering their ability to independently work toward health improvement [15].

Establishing patient rapport

When clinicians were unable to adequately communicate with patients who spoke different languages, it was challenging to develop effective relationships and took longer to establish rapport [3]. Sessions commonly lacked "'chit chat,' which could usually be used to reinforce the principles of rehabilitation and to understand the life goals individuals would find meaningful" ([15], p. 2130). Clinicians felt skilled in their ability to educate, engage, and promote autonomy within a session, but found it difficult to use subtle means of communication to build relationships when faced with language barriers [15]. Therapists expressed differing experiences when using interpreter services to develop rapport with patients. Some physical therapists indicated that lacking interpretive services was linked to less bonding with patients and increased clinician frustration [5]. Providing materials only in English negatively impacted the "relationship-building opportunities" [3] during a clinical session. Other clinicians shared sentiments on how interpreter services decreased the ability to develop therapeutic relationships [10] and inhibited the development of a therapeutic partnership [15].

Cultural components

When considering methods of communication with the presence of a language barrier, a potential complication could result from the clinician's lack of understanding of the patient's cultural beliefs [5]. Therapists reported that a limited understanding of a patient's culture posed difficulties regarding the ability to encourage and promote participation in physical therapy services [15]. In some cultures, the preferred approach is to wait for symptoms to resolve rather than engaging in rehabilitation [15], which may reduce patient participation and outcomes. Patients must have a thorough understanding of the importance of physical therapy to enhance motivation and outcomes, however, certain cultural attributes pose a challenge to this process [15].

Discussion

This systematic review addressed the question of how language discrepancies between physical therapists and patients impact the clinician's perception of care quality. While this question has not been previously researched extensively, synthesized information from the articles detailed above can be utilized to form several inferences related to clinician perception of care when working in the presence of a language barrier. Themes related to patient interactions, different modalities of interpretive services, mechanics of physical therapy appointments, and the clinician's perception of self all can be further explored to support the main research question.

Patient interactions are a cornerstone of communication within the clinic, allowing therapists to collect information relative to examination, evaluation, and plan of care, while also establishing rapport. There are various impacts on the ability of physical therapists to facilitate patient interactions when faced with a language barrier [3, 5, 10, 14, 15]. Clinicians experience frustration and a lack of control during these sessions, despite being provided opportunities to obtain information and resources

in different languages [5, 14, 15]. Language differences have also been found to lead physical therapists to experience self-doubt [10], which can impact time management and a clinician's ability to select and perform appropriate assessments, tests, and measures. Treating patients with a language difference may affect clinicians' job satisfaction, how they perceive themselves as professionals, and the quality of services they provide [10]. The negative emotions therapists have reported in these situations could be attributed to therapists being untrained to work with interpreters and how to handle situations when patients speak a language other than their own [10]. A clinician's first use of interpretive services may be during a patient session, influencing the amount of time the patient interactions will take and impacting the establishment of rapport. Therefore, patient interactions may become less fluid and may reduce the development of therapeutic relationships. However, by gaining experience and practice in the appropriate use of interpretive services, efficiency and effectiveness may improve over time. The responsibility lies within the organization employing the therapist to provide access to appropriate interpretive services and education specific to best practices in the use of interpretive services.

The type of interpreter service used is another crucial element that can impact communication when faced with a language barrier. Practicing physical therapists displayed varied opinions regarding the effectiveness of interpretive services [5, 10]. When an interpreter was used for sessions where a language barrier was present, the therapist-perceived quality of care was higher, possibly due to the interpreters' unbiased interpretation, formal training, or ability to culturally mediate [4, 5, 10]. However, there are limitations to the use of a formal interpreter that resulted in some clinicians declining their use or preferring to use family members instead [5]. These limiting factors include a lack of trust in the accuracy of the interpretation [3], possibly due to insufficient training in rehabilitation terminology and procedures [3, 9], sessions taking significantly longer due to the need for interpretation, and a decrease in session productivity [3, 15, 10]. Decreased understanding can negatively impact the patient's ability to actively participate in their rehabilitation. These points, in combination with the reduced flexibility and difficulties in scheduling interpretive services, could result in patients being seen less frequently and causing reduced compliance and progression.

Patients may be less communicative when formal interpreters are present [10], which caused some physical therapists to prefer family members to serve as interpreters for the sake of familiarity and convenience [5, 10]. Family members serving as interpreters, however, have similar drawbacks as professional interpreters, as there is no way to verify verbatim interpretation, plus lack of family member training in rehabilitation and medical terminology [5, 10, 15]. Additionally, family as interpreters may complicate the situation due to emotional involvement, sometimes making decisions for, or speaking on behalf of, the patient [5, 10, 15]. Using other employees as interpreters was convenient but inadvisable, due to a lack of formal interpretive training [3, 5, 10] which may impact the ability to correctly interpret vital health care information and may unintentionally offend patients due to linguistic and cultural variances. Virtual and over-the-phone interpretation has limited ability to adapt to the dynamic clinical setting [10], which compounded by a lack of rehabilitation-specific training, could result in inaccurate or improperly timed communication and may pose safety risks [9]. A virtual interpreter may be unable to see the entire clinical scene due to limitations with the virtual interpretive technology, may not recognize when an emergent situation is unfolding, and could cause therapists to refrain from completing certain interventions due to safety concerns.

Utilizing an appropriate interpretive service is essential, as the ability to effectively communicate with patients is paramount to maximize the patient's rehabilitation potential. Side conversations and small talk provide opportunities for clinicians to learn about their patients and gain information that is imperative for individualized care. However, when a language barrier is present, there is reduced ability to communicate through "subtle means" [15]. Reduced personal connection is compounded by decreased ability to communicate, and therefore, there is less likelihood of fully developing relationships and clinical partnerships [10, 3, 15]. The inability to gather subtle information from patients and apply it directly to the clinical decision-making process hinders the ability to provide minute-by-minute care and quality interactions. Without the means to develop a strong clinical relationship with patients, clinician autonomy decreases and may result in impaired provision of quality patient care.

Physical therapy sessions have a similar framework that is utilized across patient visits and may be negatively impacted by the presence of language differences. While therapists in the USA are legally required to use interpretive services for all visits, the use of an interpreter for initial visits, education sessions, and discharge sessions was noted to be imperative [4, 5, 9]. These visits necessitate a larger exchange of information between the patient and the clinician to ensure the patient's needs are addressed. Resources in different languages can be found across a myriad of locations, which may increase the amount of clinician time required to locate resources and facilitate appropriate communication with patients. Increased

time needed for resource identification detracts from clinician-patient interface time and can negatively impact the amount of time clinicians have to discuss subjective information, participation, functional limitations, and address impairments. Extended session duration impacts clinic productivity, a concern in many healthcare environments. Physical therapy is not unlike the rest of the health care system in that it is a business, and businesses monetarily compensate their employees according to the time worked. In physical therapy, the time and number of patients treated are often reflected in productivity standards which are frequently established. In corporately owned outpatient clinics, therapists treat on average 16–20 + patients within an 8-h day to meet productivity standards [8]. A physical therapist must meet the expectations of their clinic in addition to the added complexity of navigating a language barrier, increasing the overall burden on a physical therapist within the clinical environment. This burden can impact the extent of care provided, thus decreasing clinicians' perception of care quality. The problem may not lie with the therapists themselves but with the clinic or health organization and their various expectations. When a clinic accepts a patient, they accept that patient with the understanding that they need to fully meet their needs. By serving a patient, they are entering into a contract whereby they are promising to provide best practices and optimal care, which necessitates accounting for language differences and providing appropriate accommodations in both time and resources necessary to fulfill that covenant.

Best practice in physical therapy includes the use of research-based outcome measures to provide objective information to assist with diagnosis and prognosis. Many outcome measures are validated within the English language and lack standardized translations to other languages and cultures [3, 7, 15] potentially limiting their reliability and validity. It is incumbent upon members of the rehabilitation professions to develop reliable and valid tools using standardized procedures in a multitude of languages. While some online physical therapy resources exist to provide translation capabilities, these sources are minimal [7]. Lacking standardized non-English outcome measures negatively impacts a component of the clinical reasoning process, thus decreasing clinicians' ability to apply best practices. Therapists can utilize patient-stated goals as a subjective measure to assist with the development of a treatment plan, but language differences can limit therapists' ability to gather patient-stated goals and hinder the collaborative goal-designing process [3, 15]. Without collaboration, goals become more therapist-oriented [15] and less meaningful to the patient's wishes and needs. When there is reduced subjective and objective information available to the clinician, the ability to design an individualized plan of care may be adversely impacted. When negotiating a language difference, clinicians may choose generalized interventions over more specific and tailored interventions that may more appropriately address the patient's needs, thus reducing clinician-perceived quality of care.

Limitations

Several limitations to this systematic review must be considered. There is minimal research conducted investigating the impact of language barriers on physical therapy outcomes and physical therapists perceived quality of provided care. Several articles included in this systematic review were not exclusive to physical therapists and physical therapy's role in treating patients with language barriers. For this reason, it is possible that some included data pertained to other forms of therapy, as several included articles simply stated "therapists" [15, 10, 3]. This review was restricted to articles written in English, so an all-encompassing worldview cannot be achieved. Of the included articles, each utilized a different methodology for information retrieval, and some had a small sample size. As a result, fewer definitive conclusions could be reached. The systematic search was limited to the use of three databases, which may have negatively impacted the number of available articles for study inclusion. This study viewed language barriers through the lens of therapist-perceived quality of care but did not address patient perceptions of quality of care or objective measures of outcomes. While the included articles addressed therapists perceived quality of care in the setting of language differences, we cannot definitively state that all differences in quality of care in these studies were solely due to the language differences present. Finally, the themes of culture and education play recurring parts in the quality of care a therapist can provide for a patient, but the authors chose to exclude articles dedicated entirely to these themes as they were deemed to be outside the scope of the research question.

Conclusion

Language barriers negatively affect clinician perceived care quality, and different individual aspects of care are impacted by the presence of language barriers. However, these factors do not exist in isolation in the clinical setting and clinicians must navigate the cumulation of effects when addressing the care quality that is provided. This systematic review is unable to determine the single best approach to the management of patients with language barriers, and it appears that there are risks and benefits associated with currently available interpretive service options. Limited physical therapy resources are available in languages other than English,

impacting a therapist's ability to treat patients throughout their plan of care. Language barriers complicate the process of establishing clinician-patient rapport, and lack of interpretative services results in reduced therapist-perceived quality of care and patient outcomes. Interpreters may not have formal training related to interpreting within the healthcare environment; therefore, enhanced interpreter education specific to the healthcare setting would be beneficial to enhance the clinician-interpreter relationship.

Presently, official guidelines do not exist that delineate how interpretive services should best be used in physical therapy practice beyond that interpretive services should be provided to all patients. Due to this, the type of interpretive service utilized is left to the discretion of the treating physical therapist. More formalized guidelines and education from governing bodies in physical therapy, like the American Physical Therapy Association or the World Confederation for Physical Therapy, and other healthcare professions, could help to clear up confusion and ultimately enhance the quality of care and patient outcomes. When a standardized approach to care in the presence of a language barrier is employed, perceptions of care quality could increase due to uniformity and equality of access. Culture, education, and other variables impact the quality of care provided to patients with a language barrier. Further research on these associated topics in relation to physical therapy is needed to help determine the most suitable approach for effectively treating patients when a language barrier is present. Ultimately, failure to appropriately utilize interpretative services results in decreased clinician perception of the quality of care delivered. It is necessary, both legally and ethically, for providers to ensure optimal care and outcomes for all patients seeking physical therapist services, not just those who share a common primary language.

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Availability of data and materials
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Declarations

Ethics approval and consent to participate
Being a systematic review, this research was exempt from human subjects IRB review.

Competing interests
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References

1. Al Shamsi H, Almutairi AG, Al Mashrafi S, Al Kalbani T. Implications of language barriers for healthcare: a systematic review. Oman Med J. 2020;35(2):e122. https://doi.org/10.5001/omj.2020.40.
2. Ahlsen, B., & Nilsen, A. B. (2022). Getting in touch: communication in physical therapy practice and the multiple functions of language. Frontiers in Rehabilitation Sciences, 3, 882099. https://doi-org.proxy-lvc.klnpa.org/10.3389/fresc.2022.882099.
3. Grandpierre, V., Milloy, V., Sikora, L., Fitzpatrick, E., Thomas, R., & Potter, B. (2018). Barriers and facilitators to cultural competence in rehabilitation services: a scoping review. BMC Health Services Research, 18(1), 23. https://doi-org.proxy-lvc.klnpa.org/10.1186/s12913-017-2811-1.
4. Greene RA, Karavatas SG, Cooper J, Zamorano-Torres N. Perceptions of Spanish speaking individuals regarding the impact of language barriers on physical therapy interventions: a pilot study. J Natl Soc Allied Health. 2013;10(1):75+.
5. Hickey CJ. Physical therapists' perceptions regarding language and language-related barriers in clinical settings. HPA Res. 2012;12(3):J1–12.
6. Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, et al. Mixed Methods Appraisal Tool (MMAT) version 2018. Registration of Copyright (#1148552). Canadian Intellectual Property Office, Industry Canada: McGill University Department of Family Medicine; 2018.
7. Melman, A., Elkins, M. R., Kamper, S. J., & Moseley, A. M. (2020). Tackling the language barrier to implementing research into practice: a survey of usage of the Physiotherapy Evidence Database. Brazilian Journal of Physical Therapy, 24(6), 524–531. https://doi-org.proxy-lvc.klnpa.org/10.1016/j.bjpt.2019.10.003.
8. Mesnick, D (2016). Understanding the outpatient orthopedic physical therapy marketplace. PT360. https://www.pt360atl.com/wp-content/uploads/2016/01/Understanding-the-Outpatient-Physical-Therapy-Marketplace-1.pdf.
9. Mirza, M., Harrison, E. A., Miller, K. A., & Jacobs, E. A. (2021). Indicators of quality rehabilitation services for individuals with limited English proficiency: a 3-round Delphi study. Archives of Physical Medicine and Rehabilitation, 102(11), 2125–2133. https://doi-org.proxy-lvc.klnpa.org/10.1016/j.apmr.2021.04.020.
10. Mirza, M., Harrison, E. A., Roman, M., Miller, K. A., & Jacobs, E. A. (2022). Walking the talk: understanding how language barriers affect the delivery of rehabilitation services. Disability and Rehabilitation, 44(2), 301–314. https://doi-org.proxy-lvc.klnpa.org/10.1080/09638288.2020.1767219.
11. Passel, J. S. (2008). U.S. population projections: 2005–2050. Pew Research Center. Retrieved Dec 20, 2022, from https://www.pewresearch.org/hispanic/2008/02/11/us-population-projections-2005-2050/#:~:text=Between%202005%20and%202050%2C%20the,during%20the%202005%E2%80%932050%20period.
12. Slade, S (2023) Language barrier. StatPearls Publishing. NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK507819/.
13. Squires A. Strategies for overcoming language barriers in healthcare. Nurs Manage. 2018;49(4):20–7. https://doi.org/10.1097/01.NUMA.0000531166.24481.15.
14. Tatemoto T, Mukaino M, Kumazawa N, Tanabe S, Mizutani K, Katoh M, Saitoh E, Otaka, Y. Overcoming language barriers to provide telerehabilitation for COVID-19 patients: a two-case report. Disabil Rehabil Assist

Technol. 2021;17(3):275–82. https://doi.org/10.1080/17483107.2021.2013962.
15. Taylor, E., & Jones, F. (2014). Lost in translation: exploring therapists' experiences of providing stroke rehabilitation across a language barrier. Disability and Rehabilitation, 36(25), 2127–2135. https://doi-org.proxy-lvc.klnpa.org/10.3109/09638288.2014.892636.
16. Zeigler, K (2019). 67.3 million in the United States spoke a foreign language at home in 2018. Center for Immigration Studies.https://cis.org/Report/673-Million-United-States-Spoke-Foreign-Language-Home-2018. https://www.ncbi.nlm.nih.gov/books/NBK507819/10.5001/omj.2020.40. https://doi-org.proxy-lvc.klnpa.org/10.3389/fresc.2022.882099

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