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# An investigation of healthcare communication with patients with disability: The case of medical practitioners

Yasser Moussa[1], Fahad Alzahrani[2], Radwa Elshemy[3], Shereen Fawzy[4*]
[1]Psychology at the National Center for Social and Criminological Research (NCSCR), Associate Professor of Psychology at The University of Tabuk, Saudi Arabia.
[2]AI and computer vision, Department of Information and Computer Science, College of Computing and Mathematics, King Fahad University of Petroleum and Minerals, Saudi Arabia.
[3]The University of Tabuk, Tabuk, Saudi Arabia.
[4]Department of Medical Microbiology, Faculty of Medicine, The University of Tabuk, Tabuk , Saudi Arabia; sh_ibrahim@ut.edu.sa (S.F.).

**Abstract:** In today's healthcare landscape, effective communication is essential for delivering patient-centered care, especially to individuals with disabilities. Despite existing efforts, many gaps remain in physician-patient communication, underscoring the need for alternative solutions such as remote or in-person sign language interpreters and inclusive training programs. This study seeks to understand healthcare providers' perspectives and experiences in communicating with patients with disabilities. Adopting a mixed-methods approach, the research includes survey responses from medical practitioners, observation of clinical interactions, and thematic analysis of six unstructured interviews. By highlighting the perspectives of practitioners across specialties, the study contributes to addressing structural gaps in policy and practice. Its recommendations are positioned to support national health strategies focused on equitable access and professional development. The findings aim to inform the development of targeted interventions that promote inclusive and effective communication in clinical settings. For instance, technology-based platforms such as LiveCare, which offer real-time access to sign language interpreters and other accessibility tools, demonstrate the potential of scalable solutions to bridge these gaps and enhance patient-provider interactions.

***Keywords:*** *Disability, Healthcare communication, Inclusive care, Medical practitioners, Patient-centered communication, Saudi Arabia.*

## 1. Introduction

Effective communication is critical to ensuring high-quality health outcomes, particularly for individuals with disabilities. However, practitioners often lack the necessary training and confidence to communicate effectively with patients who are deaf, blind, or have intellectual or developmental disabilities. This communication gap impairs rapport building and informed decision-making. A promising approach involves targeted training programs that empower healthcare providers to engage inclusively with patients.

In alignment with Saudi Vision 2030, which emphasizes "Providing Equal Opportunities" and maximizing workforce potential, it is imperative to equip practitioners with the tools to communicate effectively with all patients, including those with disabilities. As highlighted by the World Health Organization & World Bank [1], common concerns include physicians' failure to listen to patients' needs or engage them in shared decision-making processes. Recent findings underscore that individuals with communication disabilities prefer tailored strategies, such as written communication, gestures, or digital tools, to overcome these gaps [2].

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* Correspondence: sh_ibrahim@ut.edu.sa

## 2. Literature Review

Over the past two decades, research has consistently emphasized the complexities and shortcomings of communication between healthcare professionals and patients with disabilities. Numerous studies Agaronnik et al. [3] and Iezzoni et al. [4], highlight a lack of preparedness and confidence among providers, further exacerbated by inaccessible healthcare environments and institutional shortcomings.

Barriers to effective communication are multifaceted. Many providers lack formal training in disability-specific communication, leading to difficulties in providing appropriate care. In a meta-analysis by Weerapol and Leelakanok [5], ineffective communication with patients with hearing loss was associated with poor health outcomes, heightened patient dissatisfaction, and diagnostic errors. Structural barriers, such as the absence of communication protocols and a lack of interpreter services, further contribute to disparities in care. Shady et al. [6] emphasized how institutional limitations and cultural stigma surrounding disability create significant hurdles for adults with intellectual and developmental disorders.

Various communication strategies have been proposed to mitigate these challenges. Techniques such as active listening, simplified language, and the use of visual aids and assistive technologies have been shown to improve communication effectiveness. Hickey et al. [2] advocated for multiple communication modalities tailored to patient preferences. Moreover, Molefe et al. [7] emphasized the critical role of caregivers as facilitators of communication and recommended structured support mechanisms for both caregivers and providers.

Healthcare accessibility is a multifaceted concept that includes several interdependent dimensions: affordability, accessibility, availability, accommodation, and acceptability. These dimensions collectively shape an individual's ability to obtain the healthcare services they need in a timely and effective manner [8, 9]. Within this framework, communication between healthcare providers and patients, particularly those with disabilities, plays a central role in shaping access to and quality of care.

Numerous studies Agaronnik et al. [3] and Iezzoni et al. [4], have explored the challenges of healthcare communication involving patients with disabilities. Consistently, these studies have reported a lack of preparedness and confidence among providers. Many facilities also lack appropriate accommodations, such as sign language interpreters or assistive technology. This exacerbates barriers for patients who are deaf or hard of hearing, blind, or have cognitive disabilities.

Healthcare professionals have employed various communication methods for individuals with hearing impairments, including written communication, speech-to-text applications, and the use of third-party interpreters [10]. While speech-to-text apps have shown promise in reducing stress and isolation in patients, their application remains inconsistent across clinical settings. Similarly, family members are often used as ad hoc interpreters, yet this practice may lead to healthcare professionals addressing the family member directly while excluding the patient from key parts of the interaction [11].

Assistive technologies have been identified as valuable resources for facilitating communication. These include hearing aids, cochlear implants, and an array of telecommunication solutions, such as video relay services and video remote interpreting [12, 13]. Although cochlear implants provide more invasive but effective support for severe hearing loss, their availability remains limited globally [14]. Smartphone-based apps and Internet-enabled platforms have also emerged as effective tools that allow two-way communication without the need for physical interpreters.

Communication barriers are pervasive in healthcare settings. A review of a wealth of research revealed that patients with hearing loss, especially those who are deaf, frequently experience communication difficulties. The most commonly used methods for direct communication between healthcare professionals and patients with hearing impairment are lip reading and writing [15, 16]. While these methods are helpful, they are not always reliable and may place undue cognitive and emotional strain on patients.

Furthermore, the presence of a third party, such as an interpreter, does not automatically guarantee effective communication. Healthcare professionals may unintentionally bypass the patient and direct communication solely to the interpreter or accompanying person, undermining patient autonomy and engagement [17].

However, despite the advancement of such technologies, access remains limited. Institutional support, practitioner training, and systemic policies are often lacking. These gaps are compounded by societal and cultural attitudes, time constraints, and a lack of inclusive communication protocols. The present study builds on these findings by investigating the lived experiences of practitioners and offering evidence-based insights into policy and training interventions in the Saudi context.

## 3. Research Objectives

This study aims to examine healthcare providers' communication with patients with disabilities through four key objectives. First, it seeks to identify the prevalent challenges experienced during interactions with patients with disabilities. Second, it aims to assess the impact of communication on the quality of care and health outcomes. Third, this study explores practitioners' perceptions and current practices. Finally, the study proposes practical and policy-level interventions that can enhance inclusive communication in healthcare settings.

## 4. Methodology

This study employed a mixed-methods research approach using a sequential explanatory design. This design integrates quantitative data collection and analysis as an initial step, followed by qualitative methods to contextualize and deepen the interpretation of survey results. This approach allows for a comprehensive understanding of both the scale and nature of communication barriers faced by healthcare professionals.

### *4.1. Setting*

The study was conducted across a network of urban hospitals, primary healthcare centers, and private clinics in Riyadh, Saudi Arabia. These healthcare settings provide a representative sample of the diverse medical environments in which patient-provider communication occurs.

### *4.2. Study Population and Sampling Strategy*

The population included licensed physicians and healthcare practitioners with at least two years of professional experience. A purposive sampling technique was used to select participants based on their experience treating patients with disabilities. This ensured that data collection focused on professionals with relevant exposure. Participants were invited via institutional email lists, and informed consent was obtained before participation.

### *4.3. Quantitative Component: Survey Questionnaire*

A structured online questionnaire was developed to assess the challenges faced by medical practitioners in communicating with patients with disabilities. The instrument was constructed based on existing research [18-22] and reviewed by subject-matter experts. The survey was administered in Arabic and comprised two sections: demographic data and a series of Likert-scale items across five thematic domains. These domains included institutional challenges, accessibility barriers, social and attitudinal factors, technology and skill gaps, and perceptions of disability inclusion. Reliability testing using Cronbach's alpha yielded an internal consistency of $\alpha \geq 0.726$.

### *4.4. Qualitative Component: Interviews*

To supplement the quantitative findings, six unstructured interviews were conducted with healthcare professionals who had direct experience treating patients with disabilities. Interview questions were designed to elicit information on practical communication strategies, perceived barriers,

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emotional readiness, and suggestions for system improvements. Thematic analysis, as outlined by Braun and Clarke, was employed to identify recurring patterns in the narratives.

### *4.5. Observational Component*

Twelve clinical consultations were observed using a structured checklist that documented verbal and non-verbal communication, use of assistive tools, and engagement with caregivers. The observations were guided by frameworks from Molefe et al. [7], highlighting the relational and contextual elements of provider-caregiver-patient interactions. Observational data were analyzed using qualitative content analysis techniques.

### *4.6. Data Collection*

Unstructured interviews were used to collect qualitative data. Questions were not predetermined but arose spontaneously in free-flowing conversations. Interviews were held in the participants' offices at their convenience. These took place between March and April 2024 and lasted 20 to 45 minutes. Participants included professionals from various specialties such as physicians, nurses, physiotherapists, and therapists, ensuring representation across different clinical roles and genders. The demographic data of interview participants were collected to ensure ethical compliance and relevance.

### *4.7. Data Analysis and Procedures*

Quantitative data were analyzed with SPSS v27 using descriptive and inferential statistics. Qualitative data were analyzed using content analysis and ATLAS.ti. Content analysis is a technique used to identify the presence of specific words, themes, or concepts within data to explain a phenomenon [23]. All four researchers of the current study were involved in the analysis process. Following Creswell's [24] six-step process, the audio recordings were transcribed and reviewed. Each transcript was analyzed individually. Transcripts were imported into ATLAS.ti, and codes were generated to capture meaningful concepts. These codes were refined and organized into broader themes and sub-themes. The final coding framework was established through a consensus meeting among the authors to ensure rigor and consistency.

## 5. Results and Findings

This section presents the findings from the quantitative and qualitative components of the study. In addition to the descriptive statistics previously outlined, further analyses were conducted to examine whether responses varied according to key variables such as gender, type of disability encountered, and clinical setting.

### *5.1. Survey Results*

Table 1 summarizes the frequencies and percentages related to training, availability of communication tools, and overall confidence in communicating with patients with disabilities. These results reflect general trends among the surveyed practitioners.

**Table 1.**
Frequencies and Percentages of Training and Availability of Communication Tools Among Healthcare Practitioners.

| **Scope** | **Frequency (n=100)** | **Percentage (%)** |
|---|---|---|
| Insufficient training | 68 | 68% |
| Lack of tools/preparation | 74 | 74% |
| Regular use of assistive tools/interpreters | 22 | 22% |
| Received formal training | 18 | 18% |

Respondents who had received formal training demonstrated higher self-reported confidence and effectiveness in communicating with patients with disabilities (Mean = 4.2, SD = 0.8 on a 5-point scale), compared to those without such training (Mean = 2.8, SD = 1.1).

To assess differences by variable, a one-way ANOVA was conducted. For example, when comparing the confidence level scores across different types of disabilities encountered by providers (e.g., intellectual, visual, hearing, physical), statistically significant differences were observed.

**Table 2.**
Differences in Practitioners' Confidence Levels When Communicating Across Types of Disabilities.

| Type of Disability Encountered | N | Mean Confidence | Std. Deviation | F | Sig. |
|---|---|---|---|---|---|
| Intellectual | 25 | 3.85 | 0.84 | | |
| Visual | 22 | 3.72 | 0.95 | 4.26 | 0.021 |
| Hearing | 28 | 3.25 | 1.01 | | |
| Physical | 25 | 3.60 | 0.89 | | |

These results indicate that practitioners report greater confidence when interacting with patients with intellectual (M = 3.85, SD = 0.84) or visual disabilities (M = 3.72, SD = 0.95) compared to hearing impairments (M = 3.25, SD = 1.01). The overall one-way ANOVA was statistically significant, $F(3, 96) = 4.26$, $p = .021$, partial $\eta^2 = 0.12$, indicating a medium effect size.

Gender-based analyses also revealed notable findings. Female practitioners (M = 3.91, SD = 0.82) reported higher confidence in using assistive communication methods than male practitioners (M = 3.51, SD = 0.98). This difference was statistically significant, $F(1, 98) = 3.98$, $p = .034$, partial $\eta^2 = 0.04$, reflecting a small-to-medium effect.

Additional analysis by institutional setting (hospital vs. private clinic vs. primary health center) confirmed that providers working in hospital environments had significantly greater access to training and tools, with correspondingly higher confidence scores.

To further examine how communication confidence varies across healthcare specialties, a one-way ANOVA was conducted using the professional role of the participant as the independent variable. The dependent variable was the self-reported confidence level in communicating with patients with disabilities, encompassing scenarios such as lack of training, preparation, and access to communication tools. Results revealed a statistically significant difference among groups, $F(3, 96) = 4.73$, $p = .008$, partial $\eta^2 = 0.13$. This suggests that a professional background had a meaningful influence on confidence levels.

Table 3 presents the group means and standard deviations. Physicians reported the highest mean confidence (M = 3.95, SD = 0.78), followed by nurses (M = 3.62, SD = 0.91), physiotherapists (M = 3.41, SD = 1.02), and speech therapists (M = 3.27, SD = 0.86). These results suggest that physicians, potentially due to greater exposure or institutional support, feel more equipped to handle communication challenges. In contrast, speech therapists, despite their specialization, reported the lowest levels of confidence, possibly reflecting structural or training limitations in clinical settings.

**Table 3.**
Summary of key findings based on participants' professional roles.

| Professional Role | N | Mean Confidence | Std. Deviation | F | Sig. |
|---|---|---|---|---|---|
| Physicians | 30 | 3.95 | 0.78 | 4.73 | 0.008 |
| Nurses | 28 | 3.62 | 0.91 | | |
| Physiotherapists | 22 | 3.41 | 1.02 | | |
| Speech Therapists | 20 | 3.27 | 0.86 | | |

These findings suggest the need for tailored communication training modules, particularly for allied health professionals who may encounter fewer communication-diverse scenarios in their daily routines.

### *5.2. Interview Themes*

The primary purpose of conducting interviews was to answer the research goal regarding the lived experiences and professional challenges practitioners face when communicating with patients with disabilities. Through careful thematic analysis, three overarching themes became apparent. These themes provide insights into the knowledge gaps, adaptive behaviors, and institutional needs as reported by practitioners. The main themes are shown in Table 4 and are discussed in detail below.

**Table 4.**
Main Themes of Interview Transcripts Analysis.

| No | Main Theme | Frequency |
|---|---|---|
| 1 | Communication Gaps Due to Lack of Training | 6 |
| 2 | Improvised and Adaptive Strategies | 6 |
| 3 | Demand for Systemic Support | 6 |

### *5.2.1. Theme 1: Communication Gaps Due to Lack of Training*

Participants consistently described a lack of structured training in communication strategies for patients with disabilities. This resulted in uncertainty, reduced confidence, and, at times, miscommunication. These findings echo prior studies showing that healthcare curricula inadequately address disability-focused communication [2, 6].

### *5.2.2. Theme 2: Improvised and Adaptive Strategies*

In the absence of training, practitioners relied on improvised methods such as using gestures, written notes, or relying on family members for interpretation. While these adaptations reflected dedication, they also highlighted a dependency on informal means that can undermine patient autonomy.

### *5.2.3. Theme 3: Demand for Systemic Support*

Interviewees voiced the need for broader institutional support, including policy reform, structured onboarding for new practitioners, and dedicated resources for communication accessibility. Similar calls for systemic reform are emphasized in Shady et al. [6] and Molefe et al. [7].

### *5.3. Observational Results*

Field observations revealed that family members frequently acted as primary communicators. The use of visual aids or written materials was minimal. Consultations were generally brief, with limited time allocated to addressing communication challenges. Few clinics displayed accessibility signage or offered printed resources in Braille or large font.

## 6. Discussion

The study findings highlight persistent and systemic barriers in healthcare communication with patients with disabilities. The gaps in training and infrastructure limit the ability of even well-intentioned practitioners to deliver inclusive care. These results align with earlier work by Iezzoni et al. [4] and Lagu et al. [25] more recent analyses by Weerapol and Leelakanok [5], all of which point to significant disparities in healthcare access due to communication failures.

While some practitioners have developed creative methods to bridge communication gaps, this reliance on improvisation is neither scalable nor consistent. Moreover, depending on caregivers for communication introduces ethical concerns regarding autonomy and privacy. These findings underscore the urgent need for institutional reforms that prioritize inclusive communication.

The role of digital technologies such as LiveCare platforms emerges as a promising solution. As Anawade et al. [26] suggest, telemedicine platforms, when integrated with features like live captioning and screen readers, can enhance accessibility. However, such technologies must be implemented with attention to patient preferences and cultural context, as emphasized by Hickey et al. [2].

## 7. Study Implications

In light of the communication barriers identified in this study, digital solutions such as LiveCare may offer a promising avenue to enhance accessibility and inclusivity in healthcare communication. When tailored to accommodate patients with various disabilities, such as through screen readers, sign language interpretation, or text communication options, these platforms could significantly improve the effectiveness of patient-provider interactions. As such, integrating LiveCare-like services into mainstream healthcare delivery can serve as a complementary strategy to in-person interventions.

## 8. Ethical Considerations

Ethical approval from any relevant institutional review board was not needed. This study did not require Institutional Review Board (IRB) approval because it did not involve interventions, sensitive data, or procedures that fall under mandatory ethical review according to the regulations of the funding body and the authors' institution. Participants provided informed consent prior to their involvement. All data were anonymized and stored securely, in accordance with ethical standards for research involving human subjects.

## 9. Limitations

This study was limited to urban healthcare institutions in Saudi Arabia, which may not reflect the broader national context, especially in rural settings. The sample, while diverse in terms of specialty and setting, was modest in size. Additionally, this research focused solely on the providers' perspective. Future research should incorporate patient voices and examine communication challenges across various regions and healthcare systems.

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## Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

## Copyright:

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