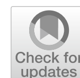
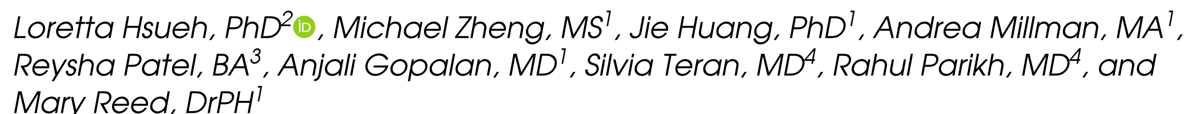
"Complete and Accurate, and Warmhearted Too": Telemedicine Experiences and Care Needs of Mandarin-Speaking Patients with Limited English Proficiency

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ABSTRACT

BACKGROUND: Despite greater care needs, patients with limited English proficiency (LEP) are less likely to use telemedicine. Given the expansion of telemedicine since the COVID-19 pandemic, identifying ways to narrow the telemedicine care gaps experienced by people with LEP is essential.

OBJECTIVE: Examine the telemedicine experiences of Mandarin-speaking adults with LEP, with a focus on perceived differences between in-person care, video, and telephone telemedicine.

PARTICIPANTS: Random sample of Kaiser Permanente Northern California (KPNC) members who completed at least one primary care telemedicine visit in August 2021, aged 40 years or older, and had electronic health record-documented need for a Mandarin interpreter. The sample was stratified by telemedicine visit type (video or phone).

APPROACH: Semi-structured Mandarin-language telephone interviews with a bilingual and bicultural research assistant collected patient experiences with telemedicine in general and telemedicine visits assisted by interpreters. Two coders used rapid qualitative analytic techniques to capture themes.

KEY RESULTS: Among 20 respondents (n = 12, 60% women) age 41–81, all had prior experience with telephone visits and 17 (85%) had experience with video visits. Patients reported three major themes: (1) communication, language skills, and how patience impacts care quality; (2) the importance of matching patient preferences on communication modality; and (3) the need for comprehensive language services throughout the continuum of healthcare delivery.

CONCLUSION: Mandarin-speaking adults with LEP see telemedicine as a convenient and necessary service. Issues with healthcare providers' and interpreters' communication skills and impatience were common. The lack of wrap-around language-concordant care beyond the visit itself was cited as an ongoing and unaddressed care barrier. Healthcare provider and interpreter training is important, as is availability of personalized and comprehensive language services in promoting patient autonomy, alleviating the burden on patients' families, and thus ensuring equitable healthcare access.

KEY WORDS: telemedicine; limited English proficiency; health disparities; Chinese Americans; qualitative

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Telemedicine became a vital care tool in response to the COVID-19 pandemic and continues to be a mainstay of current clinical practice. Telemedicine can improve care access and support patient satisfaction while meeting in-person treatment standards.[1–3] Despite such strengths, ensuring that telemedicine's adoption does not exacerbate existing health disparities is vital.

Patients with limited English proficiency (LEP) engage with telehealth less than proficient English speakers.[4,5] Over 25 million people living in the USA have LEP.[6] These individuals have a limited ability to read, speak, write, or understand English, constraining their ability to interact effectively with their healthcare providers.[7] Due to language barriers, providers may be unable to deliver high-quality care to LEP patients, resulting in patients' limited comprehension of diagnoses or follow-up instructions, lower adherence to treatment, and higher outpatient drug complications.[8–10]

These observed disparities are especially prevalent for the 1.6 million Chinese immigrants living in the USA with LEP.[11] Because Chinese immigrants are the fastest growing immigrant group in the USA,[12] a growing number of Chinese-speaking LEP patients will rely on interpreter services

in healthcare. While interpreter services raise the quality of care delivered to patients with LEP,[13,14] research to date on the quality of interpreter-mediated care has been limited to in-person services,[15,16] leaving a knowledge gap regarding the telemedicine care experiences of this group. In a large integrated healthcare system, this study sought to examine the telemedicine experiences of Mandarin-speaking adults with LEP, with a focus on perceived differences between in-person care, video, and telephone telemedicine.

METHODS

Design and Study Setting

In August of 2021, we conducted telephone interviews with 20 adult members of Kaiser Permanente Northern California (KPNC), a large integrated healthcare delivery system racially and ethnically representative of the northern California population.[17] Since 2016, KPNC patients initiating a visit with their PCP could directly choose an in-person, telephone, or video visit for any clinical condition except for routine physical examinations. All clinicians had equivalent access to patients' full inpatient/outpatient electronic health records (EHR) including patient interpreter need. KPNC implemented a telemedicine-first approach during initial 2020 COVID-19 shelter-in-place orders. Alongside full continued telemedicine availability, in-person visits returned to full availability for primary care appointments for any clinical condition in April 2021. Clinicians could request an interpreter to join in-person or by phone for in-person visits, or by phone for telephone/video visits since 2016. Interpreters could join by video for video visits since 2020.

The study was approved by the KPNC Institutional Review Board. Participants provided written informed consent and received a $25 gift card for completing the interview.

Participants

Participants meeting the following inclusion criteria were identified using electronic health record (EHR) data: (1) a documented need for Mandarin interpreter services; (2) completed one primary care telemedicine visit within the past month (if more than one completed visit, the most recent was considered the index visit); and (3) aged > 40 years. This age criterion was included to capture a sample with a range of digital literacy levels. Recruitment materials were sent via letters in Mandarin to a stratified random sample of 20 patients per modality (telephone, video) until recruitment goals were met. All potential participants who did not contact the study team to decline participation were contacted by a Mandarin-speaking, bicultural, bilingual, trained research assistant via phone. During the initial recruitment call, the research assistant confirmed with the participant the need for the use of interpreters during healthcare visits.

Interview Content and Procedures

The interviews followed a semi-structured script covering four domains: (1) what makes an in-person and telemedicine care experience high-quality and/or positive, (2) what factors influence the choice of one care modality over another (in-person, video, telephone), (3) personal experiences with in-person and telemedicine interpretation services, and (4) perceived overall unmet care needs as an LEP patient.

Interviews were conducted between August and October 2021 by a Mandarin-speaking, bicultural, bilingual, trained research assistant via telephone. These audio-recorded interviews were transcribed verbatim in Mandarin and then translated into English by an external translation service provider certified by International Organization for Standardization (ISO 17100 Translation Services), which sets minimum international standards for reliable, consistent translations.

Using rapid qualitative analytic techniques,[18] two coders used a priori codes to capture themes corresponding to the interview questions. Emergent codes were generated to summarize data not captured by the priori coding scheme. Code definitions were discussed until consensus is achieved. We then conducted a matrix analysis by organizing participants by rows and interview guide topics to identify response trends. Themes were identified using well-established strategies including repetition and emphasis.[18] Data were organized using Dedoose software.

RESULTS

Of 255 potential participants, 35 declined via email or postcard, and 32 consented via email or postcards, among which 8 met criteria and completed interviews. A research assistant then conducted outreach in Mandarin to the remaining 188 potential participants via telephone until the targeted number of 20 total participants were consented. Interviews lasted between 25 and 40 min. One interview was conducted with the help of the participants' family member; Table 1 presents the characteristics of the 20 study participants.

Three overarching themes in telemedicine experiences were identified (see Table 2).

Theme 1: Care Quality

Many participants emphasized that no single factor guaranteed a positive telemedicine care experience. However, factors important in general care were considered to also be important in telemedicine care: (1) differences in communication skills (including language proficiency) across the provider, interpreter, and patient and (2) provider and interpreter patience with the patient.

Subtheme 1: Communication Skills Impacts Care Quality. Many participants noted issues with providers' and interpreters' language proficiency. While many participants

Table 1 Participant Characteristics of 20 Mandarin-Speaking Adults with Limited English Proficiency

	N, %
Women	12 (60)
Age (years [SD])	62.3 (10.1)
Origin	
China	18 (90)
Taiwan	2 (10)
Years in USA	
0–5	2 (10)
5–10	1 (5)
10–20	9 (45)
20+	5 (25)
No data	3 (15)
Dialect used at home	
Mandarin	9 (45)
Shanghainese	3 (15)
Guangdong/Cantonese	1 (5)
Changsha	1 (5)
Chaoshan	1 (5)
Fuzhou	1 (5)
Henan	1 (5)
Hubei	1 (5)
Kaifeng	1 (5)
Wuhan	1 (5)
Self-reported English proficiency	
Very well	0 (0)
Well	5 (25)
Not well	11 (55)
Not at all	4 (20)
Index visit	
Video	12 (60)
Telephone	8 (40)

Index visit refers to telemedicine visit type (video vs. telephone) participant was sampled from

had a bilingual primary care provider, some noted instances in which, despite listing Mandarin as a spoken language, the provider had low Mandarin proficiency. Additionally, participants noted errors by interpreters. One woman stated, "He turned the phone loudspeaker on. I had to use body language […] I waved my hands to tell the doctor [the interpreter] didn't correctly translate what I said, and it's wrong. Then the doctor showed me his helplessness on his face."

Some participants also noted the importance of the interpreters' skills, specifically training in medical knowledge: "[The interpreter] is not very excellent with medical expertise. […] I have some English skills, so I know the translator didn't translate what I meant. But there are some people who have no English skills at all. They may not know that the translators distorted their original intention."

In some instances, interpreters' poor communication skills impacted patient understanding care quality. Recalling one negative interaction, one participant said, "The specialist said to the interpreter, 'Why do I repeat it three times, but you still don't understand'. [The interpreter] asked the doctor again and again, the doctor may not have much patience, or she is busy to see the next patient, I am afraid she is not happy about it. […] I am the one looking for an interpreter, so it affects her time, so I am embarrassed. I have some questions I dare not ask."

Some patients with higher levels of English proficiency expressed a desire for a more flexible encounter interpretation approach in which the interpreter primarily focused on medical language while letting the patients communicate directly with providers in English when they are able. One participant noted that despite this desire, she felt it would be impolite to circumvent the interpreter: "You'd not criticize him immediately, right? [The interpreter] would think, 'How could a person who doesn't know English at all, like you, blame me?'".

Another participant, when asked whether the interpreter interpreted his words accurately, simply stated, "It's hard to say. I express myself in English just to save time."

Table 2 Themes, Subthemes, and Example Quotes

Theme 1: care quality
Subtheme 1: communication skills impacts care quality
"Quite complete and accurate, and warmhearted too. The translator knew that I was in there alone without family's accompany, and I can't understand what others said, so he comforted me and told me not to be nervous. On this point, I think it's very considerate for the patients."
"I just wanted to answer the doctor's questions directly, but I could not […] How can I let the translator know that there is no need to translate this sentence? […] Because the translator translates every sentence, I will have a sense of barrier and will forget what to tell the doctor."
Subtheme 2: patience impacts care quality
"Some are Cantonese or less standard Mandarin, we sometimes have a little trouble understanding it, you know? You have to say it a few times to understand it."
"I suspected this doctor was a little discriminatory. He asked me to perform an MRI. He didn't speak Chinese. I asked, 'What is MRI?' He said, 'You don't even understand MRI, then I can't help you. [Laughter] Ah, this is our biggest difficulty.'"
Theme 2: care modality considerations
"But I prefer to go to the office if the translation is needed… it is better to be face to face. It gives me a feeling that I might be treated kindly, or carefully."
"I prefer by phone, because it's a little embarrassing when the interpreter and I are face-to-face and we know little about each other."
Theme 3: ongoing need for comprehensive language-concordant care
"I hope that every time the message can be sent to me in Chinese, it will be more convenient and there is no need to bother my family."
"For telemedicine, before seeing the doctor, there's someone asking your conditions. It's the [medical assistant]. I think it'd be better if they could speak Chinese, because I don't know much about English and my family doctor can speak Chinese too."

Subtheme 2: Patience Impacts Care Quality. Many spoke of the importance of clear communication and patience in the context of language barriers, reporting that some clinicians seemed impatient when caring for LEP patients. Even when using interpreters, participants described interpreters' and providers' impatience associated with LEP and preferred having a bilingual provider or having family or friends interpret on their behalf. One participant noted, "The interpreter thought my words were not brief enough, not clear enough, and he gets impatient."

Although not asked about in the interview guide, many participants described having difficulty understanding interpreters' regional dialect or accent when speaking Mandarin. Some reported confusion and discomfort when having difficulty understanding interpreters with a strong regional accent. Citing the longstanding history of regional discrimination within China, which can manifest as discrimination against specific regional dialects and accents, some participants described feeling that interpreters were "impatient" or "discriminatory" when speaking Mandarin, especially if the interpreter seemed to be a native Cantonese speaker. One participant recalled, "They have a kind of inner mentality of regional discrimination […] They will be very impatient when they work as interpreters, probably because they have to listen to Mandarin."

Theme 2: Care Modality Considerations

Participants described both challenges and strengths in using telemedicine. Challenges included difficulty describing symptoms via telemedicine, especially telephone visits; lack of visual (for telephone) and physical examinations (both telephone and video); and suboptimal rapport with clinicians, especially during telephone visits, as illustrated by one participant: "A disadvantage of [telephone] telemedicine, you would feel that the doctor was in a hurry […] that he was trying to hang up."

Participants also noted major advantages of video telemedicine, namely that video telemedicine facilitates nonverbal communication (e.g., gesturing) and more closely mimics an in-person visit, while advantages of phone visits were simpler technology. Nonetheless, participants were generally satisfied with telemedicine's convenience and predicted they would continue using telemedicine for minor complaints and chronic condition management.

Theme 3: Expanding Language-Concordant Care Resources and Support

Participants most frequently cited the need for comprehensive language-concordant care, both for in-person services and written communication. As one participant pointed out, "We all know how to access the internet, but the problem is that [the hospital] doesn't have a Chinese page to choose from."

For in-person services, participants commonly expressed a need for bilingual support staff, including nurses and medical assistants, as interpreters were rarely called in to facilitate these interactions. For written communication, participants wanted emails, after-care summaries, prescription medication instructions, text message reminders, and other vital forms of written communication to be in Chinese. In addition, many wanted the ability to reply to written communication in Chinese.

DISCUSSION

The rise in telemedicine use in response to the COVID-19 pandemic provided a unique opportunity to increase care access to underserved patient groups, like those with LEP. We sought to examine telemedicine care experiences of Mandarin-speaking adults who use interpretation services and coded emergent themes cross-cutting in-person and telemedicine experiences. Three major themes emerged. First, communication, language skills, and patience impacts the patient care experience. Second, high-quality care requires considering the distinct reasons why LEP patients might prefer one care modality over another (e.g., visual cues and physical exams may be particularly important for LEP patients). Third, there is a recognized need for comprehensive language-concordant care resources beyond the patient-provider encounter to promote effective communication in all aspects of care.

Numerous prior studies document alarming disparities in medical care for populations with LEP, including misunderstanding diagnosis and instructions, suboptimal treatment adherence, and outpatient drug complications.[8–10] These study results offer contextual insights into potential pathways underlying those disparities. For example, we found that providers' and interpreters' impatience contributes to potential for errors in communication and decreased patient engagement. Additionally, mismatch with patient preferences for interpretation needs interferes with fluid communication and building rapport with providers. This study also highlights the impact of cultural issues, specifically dialect mismatch and associated perceived discrimination, in complicating care delivery and disempowering patients.

This study also highlights promising and long-needed strategies to mitigate such disparities. First, hospital systems should offer providers and interpreters additional training to better handle the unique communication challenges in interpreter-mediated care for Mandarin-speaking patients, in general and telehealth. Training content might address strategies for addressing misunderstandings or conflict between providers and interpreters or offer education on the potential impact of the discrimination context within China, where each region may hold discriminatory views of other

regions, on patients' care experience. Additionally, it may be beneficial to provide opportunities for interpreters to work on accent reduction in Mandarin for improved clarity. However, to avoid stigmatizing accents, it is crucial to emphasize that accents are a part of linguistic diversity and cultural identity when implementing such an intervention. On the patient side, hospitals might consider allowing flexibility by empowering patients to use English when they can. Empowering patients to use English when they can must be balanced with the risk of miscommunication (e.g., if a patient misunderstands and answers incorrectly in English, leading to confusion and potential harm), and carefully controlled studies would be needed to inform guidelines on balancing patient empowerment with accuracy and understanding before implementing this suggestion. Second, care delivery can be personalized by matching the care modality to patient preferences. Finally, comprehensive language services are needed throughout the healthcare delivery process in both verbal and written communication. These considerations are important in the context of recent innovations in interpretation, specifically those supported by artificial intelligence (AI). AI translation tools, such as Google Translate, have been shown to inaccurately translate medical content (e.g., discharge instructions) in potentially harmful ways.[19] We raise the possibility that AI translation tools, if not carefully designed and tested, might perpetuate biases against ethnic minorities by inaccurately translating culturally specific terms or contexts, thereby reinforcing stereotypes and misrepresenting these communities.

In terms of research, study results urge further research on how well providers' self-rated language skills correlate with patients' expectations and what interventions can be put in place to validate providers' language skills. Such interventions validating providers' language skills have been developed for Spanish-speaking providers,[20] but similar interventions for providers speaking Chinese dialects (including Mandarin and Cantonese) are lacking. It would also be interesting to formally investigate whether empowering patients to use English when they can impacts care quality, including how patients might experience situations where interpreters step in to correct the patient.

The results of this study must be interpreted within the context of the study, which was conducted with members of the same healthcare delivery system in a linguistically diverse service area. Therefore, our findings may not generalize to Mandarin-speaking LEP patients that live in areas with more sparse healthcare language services. Given study participation, findings may reflect the perspectives of a more activated patient population. Nonetheless, with the advancement of technology such as AI, further research on interpreter-mediated telemedicine delivery is urgently needed to bridge the gap in health disparities for LEP patients.

While Mandarin-speaking adults with LEP see telemedicine as a convenient and necessary service, they nonetheless offered insights for improvement. Importantly, these insights have the potential to improve all types of care, including in-person consultations. In particular, healthcare providers and interpreters should continuously improve on their communication and interpersonal skills. Hospital systems should also increase the availability of personalized and comprehensive language services to promote patient autonomy and alleviate the burden on patients' families. Acting on these insights will help ensure that all patients, regardless of language proficiency, receive high-quality and accessible healthcare.

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Declarations:

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