

Experiences and Perceptions of Telehealth Among Rural Dwelling Senior Citizens

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Rural areas in the United States face increasing challenges in accessing healthcare due to an aging population and a declining rural healthcare workforce. Telehealth has been widely adopted as a strategy to reduce geographic barriers to accessing healthcare; however, limited research has examined how rural older adults personally experience and perceive telehealth and its services. This qualitative study explored the experiences, perceptions, barriers, and facilitators that participants shared while residing in a rural county in West-Central Minnesota.

The participants were interviewed in person via a semi-structured interview process. Using audio recordings and a verbatim transcript, thematic analysis enabled further examination of the themes and trends experienced by participants.

Many advantages have been acknowledged, including the ability to consult specialists who may not be locally available, reduced travel for appointments, and shorter wait times for urgent consultations. Telehealth was considered particularly beneficial when discussing hospital and clinic closures in rural communities. Despite these advantages, most participants expressed a strong preference for in-person care, emphasizing the importance of face-to-face interaction and relationship-building. In addition to technology-related challenges, many participants reported that navigating digital platforms and unreliable internet access posed barriers, and that they relied on family and friends to overcome these barriers.

Overall, rural senior citizens viewed telehealth as a helpful supplement rather than a replacement for traditional in-person care. These findings highlight the importance of implementing patient-centered telehealth, which prioritizes support, usability, and human connection.

Introduction

The population of senior citizens in rural areas across the United States has grown in recent years. From 2023 to 2024, the national adult population aged 65 and older increased by 3.1% to over 61.2 million. [1] Conversely, the population of rural medical professionals has continued to decline. Between 2010 and 2017, large metropolitan areas had a mean physician density of 125.3 physicians per 100,000 residents, an increase of 39.9 physicians per 100,000 residents during those seven years. In comparison, rural counties had a physician density of only 59.7 physicians per 100,000 residents, which decreased by 35.5 physicians per 100,000 residents during the same period [2]. In addition, the density of primary care physicians in rural areas decreased by 50.3%. The combination of declining physician density and the increasing number of older adults residing in rural areas has created barriers to consistent, adequate medical care.

While primary care physicians and healthcare systems may not be readily available for many residents, technological advancements have been developed to address this disparity. To address rural healthcare disparities, many healthcare systems have increasingly adopted technological innovations, such as telehealth, which is defined as "the use of electronic information and communication technologies to provide and support healthcare when distance separates the participants" [3]. Telehealth delivery typically includes three primary modalities: (1) live video consultations with healthcare professionals, (2) access to and storage of health information via patient portals, and (3) remote patient monitoring. The SARS-CoV-2 pandemic accelerated the adoption of these tools. A 2021 survey revealed that older adults continued to use telehealth services even after the discontinuation of isolation and social distancing precautions in 2020 [4]. The survey respondents reported that 46% of older adults were able to

receive medical care while staying at home, whereas 41% stated that telemedicine eliminated the need to travel for appointments. The growing acceptance of telehealth and the potential to mitigate geographical barriers have revolutionized the medical field, with continuous improvements enhancing access, ease of use, and affordability.

The utilization of telehealth has been studied across a wide range of populations and situations. A 2023 study by Wardlow and Roberts investigated the perceptions and uses of telehealth among medical providers in the care of older adults. Among the more than 7,000 respondents, the majority practiced in either geriatric medicine or primary care in hospitals, long-term care facilities, or outpatient settings [4]. The results of this study suggested that barriers, such as patients' physical or cognitive impairments, may hinder effective telehealth use. In addition to concerns about low technological literacy, care fragmentation, and privacy, these issues may deter many older adults from adopting modern medical practices. Nearly 40% of the medical professionals who responded identified internet privacy as a major barrier to telehealth participation, findings supported by another 2022 study [5]. Fears of malware, data breaches, and unauthorized sharing of private information online prevented many senior citizens from using modern technology. A study published in 2025 sought to describe the demographics and telehealth use of rural-dwelling adult patients by exploring the relationship between patients' level of rurality and the modality of their most recent telehealth encounter. This study revealed that older adults and racial minorities in rural settings face greater obstacles in accessing and effectively using telehealth platforms. Further evidence suggests that healthcare facilities should develop policies to address patient-level barriers by providing additional supportive measures, including navigation resources and digital education [6].

While studies have investigated provider perspectives and general patterns of telehealth use, few have examined the firsthand experiences and perceptions of rural older adults. Most existing literature relies on quantitative measures of telehealth utilization or clinician-based assessments,

leaving a gap in understanding how older adults personally experience, interpret, and navigate telehealth as potential patients. To address this gap, this study aimed to gather information on senior citizens' experiences and perceptions of telehealth use in rural areas. The findings of this investigation are intended to increase the utilization of telehealth among this population.

This study was reviewed and approved by the University of Minnesota Institutional Review Board.

Methods

Settings

This study was conducted in Pope County, a rural area in Minnesota's West Central Region. Pope County has a population of 11,308 as of 2023, with a land area of 717 mi [7]. According to the U.S. Census Bureau, 96.7% of Pope County residents are White/Caucasian, with an average annual income of \$72,205 in 2023. Among the 11,308 residents, 25.9% were 65 years or older.

Recruitment

The primary investigator posted recruitment flyers containing their contact information in public locations throughout Pope County. Locations included churches, grocery stores, and a post office. The only eligibility requirements were that individuals have to reside in Pope County at the time and be 65 years of age or older. A convenience sample of 10 participants was recruited for the study. Informed consent was obtained before the interview.

Data collection

When the PI was contacted, an interview was scheduled with potential participants. The interviews were conducted in person via a semi-structured interview template that included closed-ended demographic questions and open-ended questions intended to elicit narratives. The questions focused on participants' experiences and perceptions of telehealth and technology, as well as their residency history and involvement in the local community.

The interviews were recorded via an audio recording application, with participants' consent. The audio recordings were transcribed verbatim via

a commercial transcription service. The transcripts were reviewed for accuracy and de-identified to maintain participant confidentiality and comply with ethical standards.

Data Analysis

The transcribed audio recordings were downloaded as Microsoft Word documents for further data analysis. The student investigator and faculty advisor independently coded transcripts from participant #1. The codes were compared, discussed, and reconciled to develop a codebook. The student investigator used the codebook to code the remaining transcripts, further developing new codes when they encountered excerpts for which none of the previously generated codes fit. Claude AI, a subscription-based artificial intelligence (AI) tool, was then used to electronically recode the transcripts by extracting participant excerpts and coding them from the codebook. The output was transferred to Microsoft Excel for ease of thematic analysis across transcripts. Excerpts with the same code(s) were compared across transcripts, and themes emerged on the basis of the respondents' experiences and perspectives. These themes were grouped into four categories: Telehealth Use, Experiences and Perceptions, Barriers and Concerns, and Facilitators.

Results

Demographics

Ten participants, all aged 65 years or older and residing in Pope County at the time of the study, were interviewed via a semi-structured interview guide. All participants identified as White/Caucasian; six identified as female, and four identified as male. Nine of the ten participants held advanced degrees beyond high school, and five reported annual incomes exceeding \$100,000. All the participants reported being retired from their primary career, with five stating that they still work part-time. Eight individuals reported living with family members, with only two living alone (see Table 1).

Table 1. Demographic characteristics of the study participants.

Demographic Characteristic [N=10]	Frequency (%)
Race: <i>White</i>	10 (100.0)
Sex <i>Male</i> <i>Female</i>	4 (40.0) 6 (60.0)
Age <i>65-75</i> <i>76-85</i>	4 (40.0) 6 (60.0)
Highest Educational Attainment <i>High School Diploma</i> <i>College Degree</i> <i>Master's Degree</i>	1 (10.0) 4 (40.0) 5 (50.0)
Employment Status <i>Retired</i> <i>Part-Time/Retired</i>	5 (50.0) 5 (50.0)
Annual Household Income (USD) <i>40,000-49,999</i> <i>50,000-59,999</i> <i>60,000-69,999</i> <i>70,000-79,999</i> <i>80,000-89,999</i> <i>90,000-99,999</i> <i>>100,000</i>	1 (10.0) 0 (0.0) 1 (10.0) 1 (10.0) 2 (20.0) 0 (0.0) 5 (50.0)
Housing Status <i>Living with Family Members</i> <i>Living Alone (Own)</i> <i>Living Alone (Rent)</i>	8 (80.0) 1 (10.0) 1 (10.0)

Characteristics of Rural Residency

Although the interviews were designed to focus on telehealth, the participants' narrative responses also revealed meaningful insights into rural residency. Rural senior citizens emphasize the importance and value of *strong community connections, consistent support systems, and familiarity with their community.*

One participant reflected on the culture of their rural community:

I just think this part of the state is one that fosters, uh, relationships. We're not as isolated as maybe individuals in metropolitan areas. It'd be, and, um, the communities themselves, I think, it's really cool when we have communities that'll help, uh, when they see a family needs some help. And again, that's not something I think is as common in metropolitan areas. [Participant #9]

Similarly, another participant highlighted the importance of both professional and faith-based roles in establishing community connections.

I think, first off, because of the position I had out at the school. Um, secondly, um, because of my position in church. Um, and, um, this is a community that helps each other.

That's the-that's the biggest thing. This is a community that does help each other. [Participant #10]

In addition to forming relationships, many participants emphasized their appreciation for the support systems available in their community. Several described how retirement, long-term residency, and shared history contributed to their feelings of connection and belonging.

I thought it would be fun to retire out here and do something. I was done working. I said, "You know, I'd love to do something where I'm helping people and work for the community." [Participant #3]

Because some of 'em are former students, [laughter], I've had their children in class, I've grown up with people, you know, that we know. I socialize with some of the—some of the physicians in the area. So, I mean, from that standpoint, I almost—well, I do feel that a lot of the physicians here are friends of mine. [Participant #9]

Telehealth Use - Experience and Perceptions

The findings of this investigation illustrate both the perceived benefits and limitations of telehealth and technology within this rural population. Themes emerging from narratives about experiences with telehealth and perceptions of telehealth included: *Preference for in-person appointments; Provider availability; Access to specialist care; and Convenience of reduced travel and wait time.*

Preference for In-Person Appointments

Nine out of ten participants stated that they preferred in-person appointments with their medical providers, despite acknowledging telehealth as an available option.

I like the in-person. I'm a people-person. I like being around people. Always have [Participant #10]

I'm a little old school. I like face-to-face. Even here in school, if I have a choice of seeing somebody face-to-face or sending an email, I'll go and see them. I think it's just the old school. I like to be able to talk to them and chat with them about things that may not necessarily involve health, or whatever is going on. I am a social being. [Participant #9]

For some, phone communication was viewed as more convenient than traveling for routine care. As one participant noted:

Why would I wanna get all showered up and cleaned up and drive to the hospital just to sit there and have him tell me the same thing he could tell me over the phone [Participant #8]

Despite these preferences, three participants reported using telehealth for their own healthcare needs, whereas two others described witnessing it in emergencies. One participant recalled turning to telehealth for specialized dermatology care because of limited local resources.

I had a health problem where I needed a dermatologist, and, um, the local hospital had a dermatologist that visits but didn't have a full-time one. So I consulted with a county hospital for a dermatologist that was able to, or I could get online, or I could get face-to-face via Skype or Zoom [Participant #9]

We walked into the emergency room, and they had a doctor, a neurologist, hooked up to the screen when we walked into the ER. She was walking them through telling him what to do, gave him the clot-buster drug, went in for CT scans, and he was having a stroke [Participant #7]

Provider Access

The participants unanimously agreed that telehealth improves access to healthcare providers in rural communities, often referred to as medical deserts. They pointed to the shortage of primary care physicians and the closure of smaller hospitals as factors that make telehealth particularly valuable.

I-I think a lot of times rural areas in my—in my opinion, can become medical deserts where it's very difficult to seek the treatment that you actually need. And we have less and less, uh, primary care physicians that are willing to work in rural areas. And I think we've also seen that the consolidation of hospitals and the expenses that hospitals incur, which aren't, uh, reimbursed by insurance, are driving a lot of smaller, uh, community hospitals out of business. And as a result of that, I think we do have to have a opportunity to get some telehealth into rural areas because I think it—ultimately, it will benefit, uh, the population, especially the older population. [Participant #9]

Um, and you read about this all the time. And so where there is a place where there is a medical desert, then I can see the definite benefit to a telehealth there. [Participant #10]

Access to Specialist Care

Participants also highlighted that telehealth expands access to specialists who are often unavailable in rural and remote areas. They acknowledged the impracticality of every community hospital employing full-time specialists, and telehealth was viewed as an effective solution.

You know, in the rural areas, I think telemedicine is the only answer because we can't all have specialists in every dang hospital. You know that's impractical. [Participant #8]

One participant reflected on the personal benefit of being able to consult specialists without extensive travel.

I know there are specialists in <Hospital>, and I know that if I needed to, I could see those people despite the proximity. Let's say I was too sick to make the trip, I can still get a consultation without having to get in a car. And I think that's, that's a major benefit as well. [Participant #9]

Convenience of Reduced Travel and Wait Time

Participants emphasized the convenience of reduced travel and shorter wait times when using telehealth. In rural areas where provider availability is limited, telehealth enables patients to be seen more

quickly and conveniently. One participant described their experience:

One of the major benefits is that you can get care immediately. Uh, you don't have to wait. In a rural setting. Sometimes, because of the lack of medical professionals, you may have to wait three or four days for an appointment. And with telehealth, at least the experience I had is I called in the morning and by, uh, two o'clock in the afternoon I was seeing a doctor. So I think that's a major benefit. [Participant #9]

For additional participant quotes on the perceived benefits of telehealth, see Table 2.

Table 2. Additional participant quotes regarding the perceived benefits of telehealth.

Perceived Benefits		
Quote	Theme	Participant #
<i>I also think it's a major benefit, uh, from—for having, um, access to specialists because in rural areas we don't often have specialists and or we don't have as many specialists as the population probably needs.</i>	- Access to Specialist Care	9
<i>- you know, uh, I could have health concerns that are immediate. I could have health concerns that keep me from traveling. I could have health concerns that are chronic and in those cases, uh, you know, maybe a screen would be a better way to handle it.</i>	- Provider Access - Convenience	9
<i>Well, I think you named one of 'em, if you live a long distance away, uh, distance would—or you can't get there. That would be another, where you don't have a system to help you get there. Um, so you—you have no choice.</i>	- Convenience	3
<i>It would save them time, me time.</i>	- Convenience	5
<i>Then I would wanna go in because you don't want wanna—uh, but if it's something that is kind of routine, like do I have a strep or is it just a sore throat.</i>	- Provider Access - Convenience	6

Barriers and Concerns

The findings of this investigation revealed both perceived barriers and concerns regarding telehealth and its associated technologies in rural areas. Themes emerging from participant narratives include *Privacy Concerns*; *Technology-related challenges*; and *Preference for in-person interaction*.

Privacy Concerns

The participants were asked to share their concerns about telehealth and its associated technology. Privacy did not emerge as an issue. Several participants emphasized that their health

outweighed concerns about personal information security. One participant stated:

When we need it, we need it, whether the security is there or not. You know, if it gets out, it gets out, I guess. [Participant #8]

Others expressed confidence in the healthcare system and trust that medical professionals follow federal privacy guidelines, including HIPAA (Health Insurance Portability and Accountability Act).

I didn't have any concern about privacy because I know I'm dealing with a health professional. I know that health professionals are very good about keeping private things private, especially patient information. [Participant #9]

Technology-related challenges

While internet access was available to all participants, technology itself was presented as a potential barrier to participation. The participants noted that rural areas often lag behind urban areas in both technological infrastructure and connectivity.

The only concern I would have would be, does technology keep up? Because being in a rural setting, that's the biggest fight we have out here is technology compared to <City>. We finally have fiber optic. [Participant #8]

Preference for In-Person Interaction

The most consistent barrier reported was not technological, but personal preference. Many participants reported favoring in-person visits due to habits, social interaction, or comfort with traditional care models.

Yeah, I don't know. I think just traditionally, um, I'm a social person. Not that I go there to socialize, but, you know, and I think sometimes when you live alone, and not that I'm lonely, but living alone, you know, it's more of an issue if you don't have human contact. [Participant #6]

Other participants echoed this statement, highlighting the value of human interaction in healthcare encounters.

I'm a little old school. I like face-to-face. Even here in school, if I have a choice of seeing somebody face-to-face or sending an email, I'll go and see them. I think it's just the old school. I like to be able to talk to them and chat with them about things that may not necessarily involve health, or whatever is going on. I am a social being. [Participant #9]

For additional participant quotes on potential barriers to and concerns with respect to telehealth, refer to Table 3.

Table 3. Additional participant quotes regarding perceived barriers to and concerns with telehealth.

Perceived Barriers & Concerns		
Quote	Theme	Participant
<i>I like the in-person. I'm a people-person. I like being around people. Always have.</i>	- Preference	Participant #10
<i>Oh, that's my appointment now. So sometimes it's a little much, or says, "Here's your messages. Go to your portal." I have no idea what they're talking about when they give you all your medicines and what your percentages are and—it's kinda confusing.</i>	- Technology	Participant #2
<i>- my God. And I-I use two-factor authentication for everything. And-and then there's ways they can get around that. And, oh, my God. But it is. It's—everything is so complicated.</i>	- Technology	Participant #4
<i>- I have a hard time hearing.</i>	- Preference	Participant #2

Facilitators

While participants highlighted both the potential benefits and barriers of telehealth, many mentioned facilitators of telehealth that could improve their experience when using its services, including Reliable internet access and Technology support.

Reliable Internet Access

Participants emphasized that having reliable internet access has become a key facilitator of telehealth use in rural areas. All the participants reported consistent access to the internet both at home and while traveling, using either Wi-Fi or mobile data. Several participants have noted improvements in connectivity in recent years, particularly with the expansion of fiber-optic networks.

I think rural America is becoming more and more connected. That's one of the – one of the great things about fiber optics, and a lot of money came outta <City> in the last four years to make that possible. I hope in the next four years they'll continue that process of getting help out into the

rural areas because we were left behind for a long time. [Participant #9]

Other participants agreed with this statement, highlighting the importance of a high-quality internet connection in rural areas.

We got that fiber optic out at the farm now. So I have better reception out there than I do here. And for rural people, that's gonna be fabulous for communication. [Participant #3]

Technological Support:

In addition to infrastructure improvements, participants mentioned the importance of support systems for navigating technology. Many reported that family, neighbors, or peers could assist them when needed. For some, this confidence stemmed from the growing technological literacy within their generation.

And a lotta people I know are pretty, you know, savvy. 'Cause I know quite a bit of people that are my age and probably down to 65, that age group. And they're all really good with technology, so—I think that'll get better as it goes. [Participant #4]

Outside of their own generation, some participants mentioned the importance of younger individuals who were more familiar with technology.

Most of the time, I asked the kids, "Okay. What, uh-What do I need to do now?" [Participant #1]

In some cases, participants themselves provided support to others in their community, drawing from their professional or educational backgrounds.

What I taught at <Tech School> was computer technology. So I taught computer tech support specialists. [Participant #4]

When help was required to navigate technology, many participants valued receiving step-by-step instructions that allowed for independent processing. However, if in-person help was needed, they expressed little hesitation about welcoming support in their homes.

Coming to my home, you mean? Yeah. No, I'm—I'd be totally open to that. [Transcript #6]

One participant stated that they provide technological support for neighbors within their local community because of their educational and professional background.

What I taught at <Tech School> was computer technology. So I taught computer tech support specialists. [Participant #4]

When technology is required, many appreciate specific instructions on how to navigate the device themselves. If instructions are unavailable, most are not concerned about allowing someone to come to their home to provide support.

She would need me to be around to help interpret. [Participant #3]

Discussion

This study aimed to understand how rural senior citizens perceive and experience telehealth, addressing a gap in existing literature that has primarily focused on provider perspectives or quantitative trends [8]. Given national concerns about the declining number of physicians in rural areas and the growing population of older adults, participants viewed telehealth as a practical solution to the decreasing availability of local healthcare services. Their narratives supported previous research indicating that telehealth can improve access to primary and specialty care in medically underserved areas [9]. However, this study adds depth by showing how older adults in rural areas interpret these services based on their personal experiences and preferences.

All ten participants acknowledged that telehealth could enhance access to specialists, reduce travel, and shorten wait times for medical appointments. These findings align with earlier studies demonstrating that telehealth helps overcome geographical barriers for older adults [10]. Interestingly, unlike previous research suggesting that privacy concerns are a major barrier to technology use among seniors [11], the participants in this study largely dismissed privacy concerns, emphasizing that healthcare is more important than the risk of their information being online.

Technology challenges, however, remained a notable barrier. Participants described limitations in rural infrastructure and expressed confusion about navigating patient portals and setting up devices. Most participants mentioned having support systems within their rural communities, including family members and friends who could assist with technology. The most noted barrier identified in this study was the preference for in-person care. While earlier literature often depicted older adults as resistant to technology due to low technological literacy, the findings here contradict that view [12]. Participants expressed a strong preference for and appreciation of face-to-face interactions, as well as the importance of forming long-term relationships with local healthcare providers. This preference was not rooted in fear of technology, but rather in a desire to maintain the human element of healthcare. This distinction offers a more nuanced understanding of why telehealth adoption may remain limited despite reduced technological barriers.

Overall, this study reveals that rural senior citizens recognize telehealth as beneficial, but many view it as a supplementary option rather than a replacement for traditional in-person care. These findings suggest that effective telehealth implementation in rural settings should focus on improving user interface accessibility, expanding reliable internet options, and educating patients about telehealth as a viable alternative.

Limitations of the Study

This study has some limitations. The primary investigator is a former resident of Pope County, MN, and many participants were personally familiar with the investigator through local connections, such as the church, school, or community. These prior relationships may have altered the participants' responses, either consciously or unconsciously, to present their perspectives favorably to align with the investigator's expectations. Therefore, there may have been some response bias.

Additionally, the study's participant pool was limited to Pope County, where a local hospital provides healthcare services, including a walk-in clinic, a Level IV trauma center, physicians, and a limited range of specialists. The level of healthcare access in this location does not align with what is commonly found in most rural areas. Hence, the

findings may not be generalizable to other rural elderly populations.

Recruitment was conducted primarily through publicly posted flyers, which required interested individuals to contact the primary investigator by phone, text, or email. Recruitment via self-selection may lead to an unrepresentative population, as participants volunteered their time and efforts, as not all rural senior citizens have regular access to public spaces. As a result, the views expressed in this sample may not be representative of rural populations across Minnesota or the broader United States. Furthermore, all ten participants identified as White/Caucasian, and 90% had attained advanced degrees beyond a high school diploma.

Conclusion

This study suggests that rural senior citizens view telehealth as a useful but imperfect substitute for in-person medical care. Participants clearly recognized benefits, including improved access to primary care and specialists, reduced travel, and shorter wait times. However, strong preferences for face-to-face interaction and consultation, along with technological challenges, keep telehealth in a supportive role rather than the gold standard for rural-dwelling older adults. These findings highlight the need for telehealth systems to be easy to use, supported by reliable internet infrastructure, and complemented with clear guidance. As rural physician shortages persist nationwide, telehealth can help fill critical gaps, provided that the implementation of technological services fulfills the social, relational, and traditional priorities of the older adults it aims to serve.

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