Rural Cancer Survivors' Perceptions of a Nurse-Led Telehealth Intervention to Manage Cancer-Related Distress

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OBJECTIVES: To understand rural survivors' experiences of participating in a nurse-led telehealth visit designed to address cancer-related distress.

SAMPLE & SETTING: 25 rural-dwelling, post-treatment adult survivors of head and neck cancer recruited from a cancer center clinic affiliated with an academic health system serving a rural catchment area in the southeastern United States.

METHODS & VARIABLES: A descriptive multimethod approach using semistructured qualitative interviews and the Telemedicine Satisfaction and Usefulness Questionnaire.

RESULTS: Three primary themes emerged from the qualitative interviews, related to trust, access to information, and technology barriers. Quantitative findings indicated high satisfaction with the nurse–patient relationship through telehealth and lower satisfaction with using telehealth equipment to connect to a visit.

IMPLICATIONS FOR NURSING: Despite facing technology barriers, rural cancer survivors prioritize speaking with an oncology certified nurse through telehealth. Although they may be willing to be open and vulnerable with an oncology nurse about their distress, rural survivors are less likely to accept a referral to another provider of psychosocial care. Nurses can incorporate warm handoffs to increase psychosocial referral uptake for rural survivors.

KEYWORDS rural; cancer-related distress; cancer survivors; telehealth; survivorship
***ONF*, *50*(2), 173–184.**
DOI 10.1188/23/ONF.173-184

Rural cancer survivors travel an average of 60 minutes to access specialty oncology care (Onega et al., 2008). High travel burden to specialty care affects rural cancer survivors' health-seeking behaviors, treatment decisions, and health outcomes (Segel & Lengerich, 2020), with rural survivors often forgoing necessary care because of long travel distances (Lavergne et al., 2011; Pesut et al., 2010). In addition, survivors may delay care to stack multiple health appointments in one visit to the hospital or may have to decline psychosocial care to prioritize medical care (DeGuzman et al., 2017). Travel burden may contribute to increased mortality and morbidity rates for rural cancer survivors (Haddad et al., 2015) and lead to greater levels of cancer-related distress in rural cancer survivors compared with urban cancer survivors (Burris & Andrykowski, 2010). Cancer-related distress refers to psychological, social, spiritual, and physical symptoms affecting survivors' quality of life (Holland et al., 2013). Although rural cancer survivors may be willing to travel long distances to receive specialty care, they may be unable to physically travel because of new-onset disability resulting from cancer or its treatment, may struggle to afford travel costs, and may lack access to transportation because many hospitals do not offer transportation assistance programs (Segel & Lengerich, 2020).

One way to increase rural cancer survivors' access to specialty oncology care is through the use of telehealth. Telehealth includes live, interactive care via videoconferencing, telephone, or remote patient monitoring, as well as the exchange of messages between patients and clinicians (American Telehealth Association, n.d.; Health Resources and Services Administration, 2022). Since the implementation of stay-at-home orders because of the COVID-19 pandemic in 2020, there has been a rapid uptake of telehealth practices to provide safe, distanced care to patients (Burbury et al., 2021; Patt et al., 2021).

Telehealth interventions have been found to be feasible, acceptable, and effective for patients managing chronic disease, mental health illness, and palliative care, including patients living in rural communities (Chávarri-Guerra et al., 2021; Hsiao et al., 2021; Thomson et al., 2021). Telehealth services are increasingly being used to provide supportive care services to rural cancer survivors (Spelten et al., 2021). Healthcare systems' rapid adaptations to provide distance-based care through telehealth are changing how nurses provide care to rural survivors. Telehealth is becoming integrated into nursing practice. For example, some oncology practices have established a nurse-led telehealth assessment before an in-person appointment and have nurses follow up with patients through telehealth after an in-person appointment (Dayan et al., 2021).

Although these studies highlight telehealth as an acceptable and feasible way to increase rural cancer survivors' access to care, they largely focus on survivors' perceptions of receiving medical care from a licensed independent practitioner, such as a physician. At this time, little is known about how rural patients perceive a nursing telehealth intervention (Hirko et al., 2020; Rouleau et al., 2017). Therefore, the purpose of this study was to understand rural cancer survivors' experiences participating in a telehealth videoconferencing visit with a nurse to address cancer-related distress.

Overview of the Parent Study Intervention

Data presented in this article are findings from a substudy of a larger intervention study. The purpose of the parent intervention study was to establish the feasibility and preliminary efficacy of an oncology nurse–led distress screening, education, and referral intervention delivered over a telehealth videoconferencing call. An oncology certified nurse guided participants in the Comprehensive Assistance: Rural Interventions, Nursing, and Guidance (CARING) intervention, which included (a) assessment of participants' distress using the National Comprehensive Cancer Network Distress Thermometer and Problem List, adapted for patients with head and neck cancer (Nguyen & Ringash, 2018); (b) education about management strategies for domains in which participants were experiencing distress (e.g., the nurse discussed stretches to help patient with postoperative muscular pain); and (c) referrals for further supportive care, such as a referral to the cancer center's oncology social worker. An oncology certified nurse delivered the CARING intervention via a Health Insurance Portability and Accountability Act (HIPAA)–compliant telehealth videoconferencing platform. Thirty participants received the intervention about six weeks after they completed treatment. All interventions were conducted between April 2019 and September 2020. When participants described significant impacts of distress, the nurse offered a referral to a social worker. If the participant declined the referral, the nurse followed up with a telephone call within a week. Further details regarding the intervention have been previously reported (DeGuzman et al., 2020, 2022).

Theoretical Framework

This study was informed by the Social Ecological Model (SEM), a public health framework that explores the complex relationships between intrapersonal, interpersonal, community, and societal factors that influence health (Sallis et al., 2008; Wallerstein & Duran, 2003). The SEM is centered on how internal and external factors influence an individual's behaviors (Glasgow et al., 2004; McLeroy et al., 1998). The authors used the SEM to better understand the internal and external factors that motivated participants' behaviors to engage with technology to speak with the oncology nurse and to develop a therapeutic relationship with the oncology nurse using technology. The SEM guided the development of the authors' research question and influenced the semistructured interview guides.

Methods

Design

The authors used a multimethod approach to address the study's aim (Brewer & Hunter, 2006). Qualitative data from semistructured interviews were triangulated with quantitative survey data by comparing participant answers to interview questions with their survey responses (participant survey responses were linked to participants' interviews). This was a substudy, and data presented in this article were collected as part of a larger oncology nurse–led telehealth intervention study designed to reduce cancer-related distress of rural head and neck cancer survivors (DeGuzman et al., 2020, 2021). The parent study focused on head and neck cancer survivors, who experience high levels of distress because of new-onset disfigurement and disability resulting from cancer treatment. Head and neck cancer survivors are twice as likely to die of suicide as survivors of other cancers (Nugent et al., 2021). All study procedures were approved and overseen by the University of Virginia Institutional Review Board for Health Sciences Research.

Sample and Setting

Participants were recruited from a cancer center clinic affiliated with the University of Virginia Health System, which serves a rural catchment area in the southeastern United States. Adult head and neck cancer survivors who had completed active treatment within the previous six months and lived in a rural area were eligible. A resident of a rural area was defined as an individual living in a county classified by the National Center for Health Statistics as small metropolitan or micropolitan and requiring at least 45 minutes of travel to reach the cancer center (Ingram & Franco, 2014). Clinic staff helped screen potentially eligible participants, and purposive sampling techniques were used to identify participants (Etikan et al., 2016).

Qualitative Data Collection and Analysis

Of the 30 participants who completed the parent study, 25 participated in the qualitative aspect of this study, and 15 also completed the quantitative survey. Of the survivors who completed the qualitative interview, 10 did not respond to the quantitative survey.

Qualitative data were collected from 25 participants through semistructured interviews and field notes collected over the same videoconferencing platform (HIPAA-compliant Webex) used for the intervention. Semistructured interviews were conducted immediately before the intervention and again six weeks after the intervention. Interview questions were designed to capture participants' perspectives about the nurse–patient relationship experience over a videoconferencing visit. The semistructured interview guide was informed by the SEM and literature about rural cancer survivors' use of technology and experiences with virtual access to care (DeGuzman et al., 2020). During the first interview, the authors used a 12-question interview guide to ask participants about their typical daily use of technology (community), goals for the telehealth appointment (intrapersonal), plans for connecting to their telehealth appointments (setting), and perspectives on developing a relationship with the nurse (interpersonal). During the second interview, the authors used a 12-question interview guide to ask about any challenges participants faced during the intervention (setting) and what aspects of the intervention they found helpful (interpersonal and intrapersonal). The 24-question guide was iteratively revised during data collection based on the emerging themes. Of note, because data collection spanned the onset of the COVID-19 pandemic, two questions were added to the post-telehealth intervention guide to ask about the impact of difficulty accessing supportive care services, given the reduction in in-person services available during the initial months of the pandemic. Ten participants who were recruited after the onset of the pandemic answered these two additional questions. Examples of pre- and postintervention interview questions are presented in Figure 1.

Interviews were conducted by one of two researchers (V.B. and I.D.H.). The researchers collected observational field notes during each telehealth visit, including documenting interactions with any family members or friends who were present and describing patients' nonverbal cues during interviews. Interviews were audio recorded with participant permission, then deidentified, transcribed verbatim, and verified using qualitative software NVivo. Field notes were de-identified and organized chronologically.

The authors used an inductive, descriptive qualitative approach to analyze interview transcripts and field notes until data saturation was achieved at the

FIGURE 1. Pre– and Post–CARING Intervention Interview Example Questions

Preintervention Interview

- Can you tell me about what types of technology you use daily, and what you use technology for?
- Can you talk about your plan for getting set up for your telehealth appointment with the nurse? (Probe: Will a family member be helping with setup?)
- What are your goals for your upcoming telehealth visit?

Postintervention Interview

- Can you tell me about how you felt talking about your distress symptoms to the nurse over a videoconferencing call?
- (For those who received referrals) After your visit, you were referred to a [social worker, speech therapist, etc.]. How did you communicate with this person? (Probe: If there was an in-person visit, ask about any difficulty traveling to that appointment).
- As someone who used telehealth to get support from a nurse once your main cancer treatment was over, what do you see as the benefits and any potential problems with cancer survivors using telehealth to get this support from a nurse?

CARING—Comprehensive Assistance: Rural Interventions, Nursing, and Guidance point of meaning saturation (the point at which no new concepts emerged from participant interviews related to their experience of telehealth) (Heenick et al., 2017; Sandelowski, 2010). One researcher (V.B.) read through the entire dataset multiple times to familiarize themselves with the data before coding and to document initial impressions and patterns.

The authors used open coding, with key phrases and sentences as the units of analysis. Two researchers (P.B.D. and V.B.) reviewed the codes, collapsed them into broader categories, and then related the categories to themes. After reaching data saturation, interviews with the final five participants were used to verify the findings (Creswell, 1998).

The authors used reflexivity, peer debriefing, member checking, and triangulation with all members of the research team to ensure trustworthiness, dependability, and credibility (Lincoln & Guba, 1985). The team met weekly to discuss findings, which were triangulated with observations and interviews. In addition, the primary author used reflexive journaling, including documentation of prior assumptions and beliefs about the research, maintained analytic memos, and kept an audit trail of all analysis decisions made. Finally, transferability was addressed by contextualizing the results within the context of current cancer survivorship literature.

Quantitative Data Collection and Analysis

Immediately after the intervention, the authors administered the 21-item Telemedicine Satisfaction and Usefulness Questionnaire (TSUQ), validated for use with rural populations, to determine participants' perceptions of the nurse visit (Bakken et al., 2006). Participants were emailed a secure link to complete the survey. The TSUQ items use a five-point Likert-type scale, with response options ranging from 1 (strongly disagree) to 5 (strongly agree). Composite scores were obtained for two domains, video visits and use and impact, to capture patients' perceptions of using telehealth technology and the usefulness of the technology to affect health. Discriminant validity has been established, and the internal consistency of the two factors has been shown to be excellent, with Cronbach's alphas of 0.96 and 0.92 for videoconferencing (Bakken et al., 2006). Data were collected using Qualtrics, and descriptive statistics were calculated within the Qualtrics platform. The authors analyzed the mean, range, and standard deviation (SD) of each survey item, consistent with guidance from the original survey and the authors' research purpose (Bakken et al., 2006).

Results

Twenty-five participants completed semistructured interviews, and 15 participants also completed the TSUQ. Of the participants who completed the interviews, 10 did not respond to the survey link. Table 1 presents the participants' demographic characteristics. About half of the participants in both analyses were female, most participants were non-Hispanic White, and the average age was 60.52 years in the qualitative analysis and 60.7 years in the quantitative analysis. Of the 25 participants, 14 received an offer

TABLE 1. Participant Demographic Characteristics

	Qualitative Analysis (N = 25)			Quantitative Analysis (N = 15)		
Characteristic	**$\bar{X}$**	**SD**	**Range**	**$\bar{X}$**	**SD**	**Range**
Age (years)	60.52	14	35–80	60.7	14.4	33–88
Characteristic			**n**			**n**
Gender						
Male			14			8
Female			11			7
Race						
Asian or Black			4			4
White			21			11
Ethnicity						
Hispanic			1			1
Non-Hispanic			24			14

for a referral to an oncology social worker for further support via a telephone call, and 4 participants who received the referral offer accepted.

Qualitative Findings

Three primary themes emerged from the data: (a) rural cancer survivors trust oncology nurses with their distress experience, (b) an oncology nurse telehealth visit increases rural survivors' access to information and education, and (c) rural cancer survivors overcome technology barriers to speak with an oncology nurse.

Theme 1: Rural cancer survivors trust oncology nurses with their distress experience: Rural cancer survivors were motivated to speak with an oncology nurse about their cancer distress. When asked what they hoped to get out of the telehealth visit, many participants simply said, "Just to talk with the nurse." Participants' primary stated goal for the telehealth appointment was to discuss their health concerns with the nurse, and several emphasized the value of having a nurse ask questions regarding their health. A 52-year-old male participant stated that his goal going into the appointment was "just getting to talk to him [the nurse] about my concerns." A 33-year-old female participant who was a mother of two young children echoed that statement after her appointment, saying the biggest benefit of participating was "just him [the nurse] taking the time to ask me the questions. And, you know, identifying with my needs." Elaborating, she said, "It's good to have someone ask these kinds of questions," referring to questions about her psychosocial well-being. A 70-year-old male participant said, "I appreciate the things you all are looking for," and explained that he was particularly grateful for questions regarding whether he was feeling anxious, depressed, or unable to sleep.

Rural survivors were motivated to discuss their fears, concerns, and cancer-related distress symptoms with the nurse. For example, a 52-year-old female patient told the nurse that she found the survivorship phase "overwhelming. I don't feel like I should have to worry all the time." She expressed relief at being able to discuss her distress with the nurse, telling him,

> It's just those same concerns. You know, I get this sore throat, and it's like, it's just a concern that the cancer may come back like the other time. So it's just a concern that it'll come back like the other two times.

Describing his experience with nurses, a 74-year-old male participant stated,

> I thought that the nurses I've dealt with have been great. Some of the docs, not so much; all the nurses showed compassion. Some of the surgeons, well, I know it's a teaching hospital, but I had a lot of surgeries. . . . Anyway, the nurses were always compassionate.

Despite participants' willingness to speak openly to a nurse about their distress, most were not willing to confide in other members of the healthcare team who were trained in providing psychosocial support. Specifically, 14 participants were offered a referral to oncology-specialized social workers, but 12 participants declined this referral. Despite having discussed their distress with the nurse, several participants explained that their cancer-related distress was not severe enough to warrant additional services. For example, a 63-year-old female patient who had discussed high levels of distress related to the aftereffects of cancer treatment declined to speak with a social worker, even as she continued describing her concerns to the nurse as follows:

> [I don't need to speak to a social worker] at this time. I think I'm doing better. It's this quarantine thing, I've been out of the house twice . . . and this prosthesis . . . I thought it would be an implant, but it's not going to be. [The surgeon] thinks that is not a good idea, since we need to check for the cancer.

Similarly, a 54-year-old male patient seemed comfortable describing his distress to the nurse but declined to receive further support from a social worker, despite describing the following difficulties with his appearance resulting from cancer treatment:

> Yeah, I don't go anywhere without my hat on. Look, the top of my head was cut off, and on my back and the top of my shoulders . . . I have a scar from the top of my head to the [back]. . . . I feel freakish. No, no, I don't [need a social worker]. The people I socialize with . . . they are used to it. I wouldn't take my hat off for the longest time . . . at the restaurants. . . . I used to never go to the restaurants without my hat on because I don't want people to look at me and be like, "Oh, well, what happened to him?" My hair all fell out from radiation. I used to have hair, you know. My wife

> and my grandkids, they don't see it. But I do. . . . I know he said [he could refer a social worker], but I know what I'm dealing with. I never asked how successful these surgeries are, but I'm alive, so I guess it was successful.

Theme 2: An oncology nurse telehealth visit increases survivors' access to information and education: During the telehealth visit, study participants sought information and education from the nurse about the survivorship phase and ways to manage cancer-related distress, including information about healthcare resources they could access in their local communities. A 63-year-old male with a new tracheostomy and oxygen requirement expressed his uncertainty in his ability to keep his business moving forward in the context of his inability to work full-time. He told the nurse, "I own my own business, but now . . . I've been trying to get information on what I can do, on what to do next [to find out about disability]." The nurse guided the participant to his local disability services office for assistance, a resource he stated he had been unaware of before the visit. During the telehealth visit, the authors observed nurses educating participants in ways that assisted their recovery. For example, two participants who were experiencing postoperative neck and back pain received teaching about the effect surgery has on muscles and how long they should expect full recovery to take, and the nurse introduced strengthening and stretching exercises designed to increase mobility and comfort. One nurse educated several participants about their laboratory results and medication side effects as well as collaborated with the physician to adjust two participants' medication regimens after learning of side effects that were affecting their activities of daily living.

Participants emphasized the importance of having access to the nurse via a telehealth visit during the COVID-19 pandemic. A 73-year-old female participant who was experiencing new difficulties with swallowing stated,

> Yeah, it's not easy here [in a rural town]. . . . I got a referral for a clinic in the city, but everything is kind of on hold right now. It's this quarantine thing. I've been out of the house twice . . . since they shut it all down.

Field notes indicate that while stating this, she was tearful, shaking her head back and forth, and laughing at the challenges of her situation. The telehealth visit allowed her to access nursing education that she might not have received otherwise. During the visit, the nurse discussed soft foods the participant could eat, recommended swallowing exercises, and rescheduled the participant's follow-up appointment for an earlier date. As the nurse educated the participant about strategies to manage her distress, field notes documented nonverbal indicators of distress relief: The participant made increased eye contact with the camera, nodded her head in understanding, smiled, was no longer tearful, and repeatedly expressed gratitude to the nurse for prioritizing her care and helping her to manage her distress.

Theme 3: Rural cancer survivors overcome technology barriers to speak with an oncology nurse: The authors observed several participants who struggled to connect to the appointment either because of a lack of equipment or discomfort with using digital technology. For example, one 52-year-old female participant was unable to connect independently to her telehealth appointment twice, despite the nurse assisting her via telephone. A study team member ultimately drove several hours to her house to help her. When she finally connected, she expressed her distress and frustration at the outset of her appointment, stating, "It was just not connecting. And, you know, that's just nerve-racking when something doesn't work and you're trying, you know?"

Despite technological challenges, the authors observed that participants were committed to overcoming these barriers to speak with the nurse. Some participants sought assistance from a family member in their home (n = 6), and two participants asked their home healthcare provider to assist with connecting to the appointment. Although many participants had home-based internet connections, three participants with insufficient broadband traveled to a nearby telehealth satellite site located at a local clinic or hospital, where a nurse could assist with setting up the equipment. Telehealth satellite sites were also used by participants (n = 3) who lacked a video-capable device to connect to their visit. Participants who used a telehealth satellite site drove an average of 30 minutes to reach the location.

Some participants were limited in their ability to connect, either because of a lack of experience with the internet or difficulties with their broadband signal, and they sometimes relied on family members to help them connect to their appointment. One 74-year-old participant stated, "I don't use technology by choice," explaining that he had relied on his wife to help him connect. A 52-year-old male participant explained that he had asked his son to help him get set up for his telehealth visit. As the participant was setting up equipment for the visit, field notes indicate,

> Participant does not make eye contact via the camera, constantly touching face and moving hands in and out of the screen. Participant's son set up equipment for visit and is adjusting the camera as needed. Participant's son remained out of camera view but was within range to assist with equipment (adjusting volume, camera angle, microphone) and help participant answer questions.

Others independently persisted through technological barriers to connect with the nurse about their cancer-related distress. Two participants who were unable to maintain a connection to the videoconferencing system ended up switching to a mobile telephone to continue their conversation with the nurse. Despite encountering digital challenges, participants were satisfied with their experience connecting to the telehealth appointment. A 70-year-old male patient tried to connect using his computer but lost his internet connection. He ultimately downloaded the videoconferencing application on his mobile telephone and used cellular data to connect. Despite these challenges, at the end of the visit, he stated,

> I thought it went real well. Our internet went out two times today—it's our areawide [internet provider]—so it was hard to figure out how to download the app. . . . I thought this went real well.

Quantitative Findings

Fifteen participants completed the TSUQ. All scores are presented in Table 2. The mean scores for each item ranged from 3 to 4.47, out of 5, with 5 representing the strongest agreement. Overall, participants gave the lowest scores to questions that asked about the use of the technology. For example, the lowest scoring items were "my health is better than it was before I used the technology" ($\bar{X} = 3$, SD = 0.89) and "I can always trust the equipment to work" ($\bar{X} = 3$, SD = 0.97). Questions relating to the nurse interaction were scored the highest of all items, except for two. The highest-scoring items were "I can explain my problems well enough during a video visit" ($\bar{X} = 4.47$, SD = 0.5), "my nurse engages me in my care ($\bar{X} = 4.33$, SD = 0.6), and "my nurse deals with my problems ($\bar{X} = 4.27$, SD = 0.57). The following two questions about the nurse interaction received ratings of less than 4: "video visits make it easier for me to contact the nurse" ($\bar{X} = 3.73$, SD = 1) and "talking to a nurse during a video visit is as satisfying as talking in person" ($\bar{X} = 3.13$, SD = 1.15).

Discussion

Rural cancer survivors in this study discussed their cancer-related distress with an oncology certified nurse through a telehealth platform. Despite several initially stating only a general goal for the visit (e.g., "to speak with the nurse"), survivors openly discussed specific physical and psychosocial symptoms; confided details about their post-treatment fears, challenges, and side effects; and exhibited vulnerability when discussing how distress was affecting their daily lives. These qualitative findings were reflected in the TSUQ, in which survivors highly rated several aspects of the nurse–patient relationship, including the ability to explain their problems to the nurse over the telehealth connection and their perceptions that the nurse was able to understand their condition, answer questions, deal with their problems, and engage them in their care. To the authors' knowledge, this is the first study to explore the therapeutic nurse–patient relationship between rural cancer survivors and oncology nurses in the context of a telehealth connection and to identify the willingness of rural cancer survivors to connect with an oncology nurse through telehealth. Because of the high number of rural cancer survivors experiencing cancer-related distress (about 20%) and the shortage of oncology specialty providers servicing rural areas (Weaver et al., 2013), the development of interventions to improve access for rural survivors is paramount. Managing cancer-related distress is well within the scope of oncology nursing practice (Brant & Wickham, 2013), suggesting that a nurse-led telehealth intervention in which nurses can foster a therapeutic relationship with patients holds promise for improving access to high-quality care for rural cancer survivors. The current findings are consistent with prior research demonstrating that oncology nurses can successfully use telehealth to provide patients with an opportunity to discuss their cancer-related distress and initiate interventions to reduce that distress (Paterson et al., 2020).

Of note, all participants in this study openly discussed their cancer-related distress with the oncology certified nurse, but most of those who were identified as needing further psychosocial care declined the offer of a follow-up referral to receive a call from the oncology-specialized social worker, stating that they did not need the extra support. Participants' preference to share distress with nurses may suggest an inherent trust in the nurse–patient relationship. Trust in the nursing profession is well established; nurses' personal characteristics and professional caring behaviors contribute to a nurse–patient relationship founded on trust (Dinç & Gastmans, 2013). This study expands on work done by Dinç and Gastmans (2013) by suggesting that the trusting nurse–patient relationship can extend to virtual visits. Future research should investigate the effectiveness of a so-called warm handoff on rural survivors' referral uptake, with an oncology nurse introducing the survivor to supportive care services such as an oncology social worker. This is particularly salient for rural populations who, for a variety of complex social and cultural reasons (e.g., the rural cultural value of self-reliance) may refuse supportive care referrals (DeGuzman et al., 2022). In addition, rural survivors may have different expectations for the care and communication they

TABLE 2. Results of the Telemedicine Satisfaction and Usefulness Questionnaire (N = 15)

Quantitative Survey Item	X̄	SD	Minimum	Maximum
Video visits				
A nurse can get a good understanding of my condition during a visit.	4.2	0.83	2	5
My nurse answers my questions.	4.2	0.83	2	5
My nurse deals with my problems.	4.27	0.57	3	5
My nurse engages me in my care.	4.33	0.6	3	5
I can explain my problems well enough during a video visit.	4.47	0.5	4	5
The lack of physical contact during a video visit is not a problem.	3.53	1.2	1	5
My privacy is protected during video visits.	4.2	0.65	3	5
Talking to a nurse during a video visit is as satisfying as talking in person.	3.13	1.15	1	5
Video visits make it easier for me to contact the nurse.	3.73	1	2	5
Video visits are a convenient form of health care for me.	3.73	1.18	1	5
Video visits save me time.	3.87	0.96	2	5
Use and impact				
I am more involved in my care using the telemedicine system.	3.2	0.91	1	4
The telemedicine equipment is easy to use.	3.73	0.93	2	5
The telemedicine system helps me better manage my health and medical needs.	3.4	0.8	2	5
In general, I am satisfied with the telemedicine system.	4	0.89	2	5
My health is better than it was before I used the technology.	3	0.89	1	4
I follow my doctor's advice better since working with the telemedicine system.	3.14	0.74	2	4
The telemedicine system helps monitor my health condition.	3.53	0.72	2	5
It was easy to learn to use the equipment.	3.6	1.08	2	5
My doctor uses information from the telemedicine system in my office visits.	3.15	0.77	1	4
I can always trust the equipment to work.	3	0.97	1	4

Note. Participants were asked to rate their response to each item on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

receive from clinicians (Eaves et al., 2020), which may include a personal introduction to unknown services and providers.

Several participants had trouble connecting to the intervention, but all persisted and were ultimately able to connect by recruiting help from people in their support systems or on the study team. Some expressed a great deal of frustration at having experienced unsuccessful attempts at connecting to the telehealth visit, whereas others were more positive about the experience despite problems with technology. Difficulties with technology were reflected in lower scores on the TSUQ data: Participants rated their experience with the technology quite low relative to other survey items (Bakken et al., 2006). Difficulty using technology is a known phenomenon among individuals who do not regularly use the internet (Hall et al., 2015). Their experience reflects the phenomenon of limited digital inclusion, which refers to having not only access to equipment but also the skills to use technology (DeGuzman et al., 2020).

When launching a telehealth intervention with rural survivors, nurses should bear in mind that rural patients who are unfamiliar with technology may require additional support to find a broadband connection and use unfamiliar technology. Difficulty using technology can ultimately be a barrier to adoption (Campbell et al., 2017), which can further exacerbate rural–urban health inequities if not addressed (Tashkandi et al., 2020). In addition, it is important to keep in mind that frustration with technology may increase distress for some cancer survivors, and they may subsequently receive less benefit from speaking to the nurse via videoconferencing technology (Cox et al., 2017). If technology barriers inadvertently increase survivors' distress, an in-person visit should be considered. As the use of telehealth interventions becomes more widespread because of the impact of COVID-19, creating local hubs with equipment and broadband at community-centered locations such as rural libraries may be a way to decrease technology barriers for rural cancer survivors (DeGuzman et al., 2021).

When rural cancer survivors live geographically far from their cancer clinics, oncology certified nurse–led interventions can reduce the travel burden (DeGuzman et al., 2021). To provide comprehensive and accessible survivorship care, oncology teams should coordinate with rural survivors' local primary care providers for follow-up laboratory testing, imaging, and physical assessments whenever possible, and oncology teams can then use telehealth to discuss the results of physical tests and provide specific survivorship education, recommendations, and follow-up care.

KNOWLEDGE TRANSLATION

- Rural cancer survivors can overcome barriers such as limited broadband, lack of a device, and lack of digital proficiency to participate in a telehealth video visit with an oncology certified nurse.
- Oncology nurses can establish a trusting therapeutic relationship with rural cancer survivors through a telehealth video visit during which survivors discuss their cancer-related distress.
- A warm handoff from nurses may increase rural cancer survivors' uptake of referrals to social workers for cancer-related distress.

Implications for Nursing

The current findings suggest that because of their ability to maintain a trusting therapeutic relationship, oncology certified nurses are well positioned to lead interventions aimed at addressing cancer-related distress in rural survivors using telehealth. Oncology certified nurses have specialized training to assess and manage symptoms of distress in cancer survivors, and this training can extend to virtual visits. One area that merits further exploration is how oncology certified nurses can best engage rural survivors in accepting additional psychosocial support when a visit is conducted virtually. Participants in this study exhibited great trust in the oncology certified nurse but were hesitant to speak with a specialized oncology social worker. A potential way to increase acceptance of further psychosocial care is the integration of a warm handoff by connecting the patient with a social worker or other psychosocial care provider. A warm handoff occurs when the incoming and outgoing healthcare providers introduce the patient to new providers and services and discuss the plan of care with the patient present (Saag et al., 2018). Within the context of cancer care, when identifying a patient or survivor with high cancer-related distress, the nurse can introduce the patient to the provider (either in person or virtually). This transition may help mitigate the abandonment and loss of communication that some survivors feel when treatment ends, particularly for rural survivors (DeGuzman et al., 2017; Rowland et al., 2006). Future research should evaluate the effectiveness of a warm handoff in increasing the uptake of psychosocial care referrals for rural cancer survivors.

Limitations

This study's sample consisted of rural cancer survivors recruited from one large academic medical center in the southeastern United States; thus, these findings may not be representative of rural cancer survivors from other regions and may not be generalizable to other rural communities. The authors studied a small sample of head and neck cancer survivors; as such, findings may not reflect the experiences or perspectives of people with other types of cancer. Most participants in this study were non-Hispanic and White, which, although reflective of the geographic area from which participants were recruited, may not represent the perspectives of rural cancer survivors who come from other racial and ethnic backgrounds.

Conclusion

This study uniquely investigated rural cancer survivors' perceptions of an oncology certified nurse–led telehealth intervention to help manage their cancer-related distress. Cancer survivors can benefit from an oncology certified nurse–led telehealth visit aimed at identifying and managing cancer-related distress and can maintain a strong nurse–patient relationship over telehealth, although patients may not be comfortable receiving psychosocial care from other providers. Further research can help identify strategies for connecting rural survivors with other specialty providers who can help treat cancer-related distress. Future research should also evaluate the impact of an oncology certified nurse–led telehealth intervention on patients' cancer-related distress and quality of life using a larger and more diverse rural sample.

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(Submitted March 2022. Accepted August 18, 2022.)

No financial relationships to disclose.

Bernacchi and DeGuzman contributed to the conceptualization and design. Bernacchi, Hinton, and DeGuzman completed the data collection. Hinton and DeGuzman provided statistical support. All authors provided the analysis and contributed to the manuscript preparation.

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