Maternal and Child Health Journal (2019) 23:1196–1205
https://doi.org/10.1007/s10995-019-02750-3

"The Closer, the Better:" The Role of Telehealth in Increasing Contraceptive Access Among Women in Rural South Carolina

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Published online: 21 June 2019

Abstract

Background Rural populations face unique health disparities that prevent women from accessing reproductive health care services. Telehealth initiatives offer a health care delivery tool to increase access to contraception.

Objective To understand women's contraceptive needs and perceptions of accessing contraception through telehealth services.

Methods Researchers conducted 52 in-depth interviews with women ages 18–44 years living in five rural counties in South Carolina from May to July 2015. Researchers employed constant comparative data analysis using HyperRESEARCH 3.7.2.

Results Most participants identified as Black (62%) or White (28%). Findings suggest successful telehealth interventions should accommodate women's complex and nuanced community views, including benefits and barriers of telehealth, to improve access to contraceptive methods in rural locations. In addition, telehealth initiatives should frame contraception as contributing to women's overall health and well-being.

Conclusions for Practice Telehealth initiatives may address barriers to contraceptive access in rural locations. Findings from this study offer theoretical and practical opportunities to guide telehealth interventions that support and empower women's access to contraceptive methods in rural areas.

Keywords Contraception · Formative research · Qualitative · Rural health · Telehealth

Significance

What is already known on this topic? Women's health services are lacking in rural locations, resulting in poor health outcomes. Though telehealth interventions have proven successful in ameliorating health disparities among rural populations in health-related fields (e.g., psychiatry, audiology, etc.), few studies have investigated telehealth to reduce women's health disparities related to contraceptive access.

What this study adds? Telehealth is an acceptable method for increasing access to contraception services among women living in rural communities. Telehealth interventions should situate contraception within women's overall health and well-being, addressing health disparities important to rural communities (e.g., diabetes, cardiovascular disease, unintended pregnancy) and highlighting contraception benefits, including decreased risk of cancer, heart disease and stroke.

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Introduction

Telehealth initiatives may address barriers to contraception access in rural locations (ACOG 2014). Telehealth is the electronic exchange of medical information from a remote location to an established medical facility in order to provide convenient care to patients and improve health outcomes (The American Telemedicine Association 2012). The South Carolina Telemedicine Act requires health care providers be properly licensed and certified in South Carolina, and retain high standards of care for telehealth sessions (Thomas and Capistrant 2015). While some states utilize mobile technology to support telemedicine efforts, South Carolina prohibits the use of "cell phone video" during telehealth appointments; however, high resolution and secure computer video is permissible (Center for Connected Health Policy 2017a; Thomas and Capistrant 2015). Though telehealth does not require real-time, interactive audio–video communication, teleproviders must use technologies sufficient enough to accurately diagnose (e.g., imaging technologies, diagnostic tools) and treat the patient via computer-mediated or store-and-forward technology (Cleary and Hutto 2015). Additionally, a teleprovider may obtain physical exam findings from a licensed healthcare provider, acting as a patient-side telepresenter, to ensure adequate assessment (Cleary and Hutto 2015) and then proceed with a virtual telehealth appointment. Broadband internet is available in every county in South Carolina, though connection strength varies. Overall, telehealth computer video conferencing is a viable and supported option throughout the state (Broadband Now 2018). Although South Carolina does not allow telehealth to be used solely for prescribing medications, advocates were able to remove a birth control exception from the Telemedicine Act, allowing contraception to be prescribed through telehealth (Center for Connected Health Policy 2017a). Women could fill this prescription in-person at a local pharmacy or through a mail delivery service, which would deliver prescription contraception in a nondescript package directly to their house.

Telehealth programs offer the novel opportunity for health care providers to diagnose patients in remote locations and communicate health information to patients who may be unable to otherwise access care (Kreps and Neuhauser 2010; Matusitz and Breen 2007; Swanepoel et al. 2010). Studies demonstrated teleconsultations allowed patients to seek out and connect with distantly located physicians, increasing their control and improving their decision-making (Ferrer-Roca et al. 2010; Kreps and Neuhauser 2010). Additionally, telehealth modalities, including live video (synchronous), store-and-forward (asynchronous) of recorded medical information, remote patient monitoring, and mobile health (mhealth) provide opportunities to improve patient health and supplement in-person visits while reducing readmission (Center for Connected Health Policy 2017b). In particular, videoconferencing during telehealth interventions provide opportunities for patient-centered communication (Grindlay et al. 2013), patient education (Center for Connected Health Policy 2017b) and patient behavior change (Willoughby and Furberg 2015). Telehealth initiatives have provided emergency contraception (Raymond et al. 2004), contraception prescriptions and sexually transmitted infection (STI) screening (Pai 2014).

The current telehealth landscape in South Carolina includes programs for mental health, stroke, and high risk pregnancy (Holleman 2013). A statewide Department of Mental Health Telepsychiatry Network provides mental health care to rural residents with reduced access to services (Mental Health Weekly 2010). The program has provided teleconsultations for more than 20,000 people, reduced mental healthcare costs by $1400 per consultation, and decreased the average wait time from 4 days to less than 10 h (Mental Health Weekly 2014; Vestal 2014). REACH MUSC (Remote Evaluation of Acute isCHemic Stroke of the Medical University of South Carolina) connects neurologists from the Medical University of South Carolina (MUSC) with emergency room physicians in 15 hospitals throughout the state to increase access to expert stroke care (Holleman 2013; Kazley et al. 2012). REACH MUSC allowed 76% of individuals to be within 60 min of a primary stroke center compared to 38% without this telehealth initiative (Kazley et al. 2012). Another South Carolina telehealth initiative offers specialist care to high-risk pregnant women, who are in particular need because of shortages of OB/GYNs in rural counties (ACOG 2014; Lacey 2011; Medical University of South Carolina 2015; National Rural Health Association 2013). The MUSC Health Maternal–Fetal Telemedicine program enables women to visit their local healthcare provider who then videoconferences a specialist during the appointment to ensure high-quality at-risk pregnancy care (Medical University of South Carolina 2015).

Rural Health Disparities

Women living in rural areas face unique health disparities. Previous studies demonstrated that rural populations face problems accessing health care (Bennett et al. 2008; Ferrer-Roca et al. 2010; Rosenwasser et al. 2013). These barriers included longer travel distances to health care facilities, specifically specialist care, and longer wait times (Bennett et al. 2008; Whitten and Love 2005). Rural areas often suffer from a shortage of physicians (ACOG 2014). South Carolina ranks 38th in the United States for its primary care

physician-to-patient ratio and every county but two (Greenville and Greenwood) include health care professional shortage areas (The Kaiser Family Foundation 2014). In South Carolina, publicly funded family planning services, including the Department of Health clinics, some rural health clinics, and federally qualified health centers, fulfilled only 29% of women's need for contraception (Guttmacher Institute 2015), suggesting many women are not receiving adequate contraceptive services, especially in rural counties. Women are disproportionately affected by rural health disparities, including high rates of unintended pregnancy. Addressing rural women's health concerns, such as contraceptive access, requires understanding their needs. A paucity of research exists on rural women's perceptions of contraception (Bennet 2002).

Pregnancy Prevention and Access to Care

In the United States, half of all pregnancies remain unintended (Finer and Zolna 2011). Unintended pregnancy results in negative social and health outcomes for women, families, and communities (Khajehpour et al. 2013). In South Carolina, 51% of pregnancies are unintended (Guttmacher Institute 2015). Approximately 750,000 people in South Carolina reside in rural areas, which is 15% of South Carolina's total population of over five million individuals (Rural Health Information Hub 2017). Due to the rurality of the state, many women do not have access to contraception because rural health clinics are not required to include contraceptive counseling within their standards of care; contraceptive counseling is considered voluntary at the 93 rural health clinics operating in the state (Chambers 2017; Rural Health Information Hub 2017; U.S. Department of Health and Human Services 2006). Teen pregnancies serve as an indicator of the environment where young women live and are linked with negative social and economic conditions (Guttmacher Institute 2015). Nationally, South Carolina ranked 10th in highest teen pregnancy rates among girls 15–19 years old (Guttmacher Institute 2015; The National Campaign to Prevent Teen and Unplanned Pregnancy 2014). Although South Carolina has experienced a 54% decline in teen births since 1992, rural counties continue to experience higher teen pregnancy rates compared to state and national statistics (South Carolina Campaign to Prevent Teen Pregnancy 2015).

The current study sought to understand women's contraceptive needs and perceptions of accessing contraception through telehealth services in rural communities. Researchers conducted in-depth interviews to investigate rural women's opinions and views of contraceptive methods and access. Findings from this study offer theoretical and practical opportunities to guide telehealth initiatives targeting increased contraceptive access, and health communication campaigns aimed at reducing unintended pregnancy in rural communities.

Method

Researchers conducted 52 in-person interviews (May–July 2015) with women ages 18–44 years residing in five rural counties in South Carolina, including Allendale, Beaufort, Colleton, Hampton, and Jasper counties. The five counties were chosen systematically based on an analysis of Medicaid coverage, cost, availability of services, waiting times, clinic hours, and contraceptive need. At the time of this study, approximately 23,430 women in South Carolina Department of Health and Environmental Control (DHEC) Region 8 (i.e., Beaufort, Colleton, Hampton and Jasper counties) were "in need of contraceptive services and supplies" including 14,270 women "in need of publicly funded contraceptive services and supplies" with a family income below 250% of the federal poverty level (FPL) (Guttmacher Institute 2015). In this area, there were eight publicly funded clinics, five Title X funded clinics, and five additional providers that offered low cost/no cost family planning services, including contraception. Most of these providers were open Monday through Friday from 8:30 am to 5:00 pm and were available for family planning services by appointment only. In addition, all the counties met the South Carolina Office of Rural Health Policy standard for the rural health clinics (RHC) program, which defines a rural or non-urbanized area based on the U.S. Census and includes a population that is in either a Medically Underserved Area (MUA) or Health Professional Shortage Area (geographic or low-income HPSA) (Chambers 2017).

In-depth interviews and a constant comparative method of analysis provided the opportunity for a rich understanding of rural women's experiences with and perceptions of contraception and access to contraception. Interviews proceeded as conversational partnerships where the researcher guided the discussion while building rapport with the participants by allowing them to introduce relevant ideas (Rubin and Rubin 2012).

A systematic theoretical sampling process was used to collect data from individuals in the five target counties, providing opportunities to develop the properties, variations, and relationships between concepts emerging from the data. This responsive approach to systematic sampling allows researchers to be open and flexible in order to sufficiently explore the depth and variation in category development (Corbin and Strauss 2008). Specifically, purposive sampling was used to recruit participants living in the five target counties by disseminating flyers in local businesses, such as Walmart Corporations, churches, libraries, and nail and beauty salons, and medical offices (e.g., private physician's

offices and urgent care offices). In addition, a Facebook advertisement was used to increase maximum variation and recruit a larger number of participants. Snowball sampling was used to recruit additional participants by asking women who were interviewed to suggest other women who would be interested in taking part in the study. Each participant was asked to fill out an anonymous demographic questionnaire following the interview. The College of Charleston institutional review board approved this study. We followed the COREQ criteria for reporting qualitative research.

Interviews

Researchers obtained informed consent for participation and permission to audio-record. Interviews lasted approximately 1 h. Participants received a $25 check or gift card as compensation for their time and contributions to the study. Gift cards were offered for participants who would prefer not to accept a check. All interviewers were members of a research team who received graduate-level qualitative methodology training prior to data collection. The interviewers included faculty, graduate students, and upper-level undergraduate students from disciplines including communication and public health. All interviewers self-identified as female to increase participants' comfort in a gender-concordant conversation.

Interviews followed a semi-structured interview protocol, which was based on extant literature and reviewed by more than 20 individuals, including scholars, community partners, and members of the target audience who provided edits to improve and refine the interview guide. The protocol provided researchers the opportunity to add, change, or clarify questions and adjust the order of questions (Rubin and Rubin 2012). The semi-structured guide allowed flexibility for the researcher, and provided participants the opportunity to offer relevant information and lead the discussion (Rubin and Rubin 2012).

The protocol began with questions exploring participants' daily lives and experiences with healthcare. Researchers then assessed participants' knowledge of and experiences with contraception (e.g., "What are the different kinds of contraceptive methods you can think of that you know are out there for women to get?", "From your experience, what is important to women when choosing a method of contraception?"). Next, researchers inquired about participants' information-seeking about contraception (e.g., "Please describe for me a time when you discussed contraception with people in your life?"). Finally, researchers asked questions about participants' perceptions of telehealth and contraception (e.g., "How would you, or someone like you, feel about talking with a health care provider through a video conference or on the computer to get prescription for birth control?", "How comfortable would you feel talking with a doctor over the computer?").

Data Analysis

Researchers transcribed all interviews verbatim. Grounded theory methodology provided an inductive approach to data analysis that privileged participant voices and experiences (Corbin and Strauss 2008). Throughout the data collection and analysis processes, researchers maintained reflexivity through observer comments and memos (Rubin and Rubin 2012). HyperRESEARCH 3.7.2, a qualitative data analysis software, facilitated coding and analyzing each transcript. Researchers utilized a constant comparative method throughout the data collection and analysis process to identify emerging patterns and themes (Corbin and Strauss 2008). The first author conducted iterative line-by-line open coding to develop a codebook. The codebook was reviewed and edited by the research team. Researchers coded the interviews using open and axial coding in HyperRESEARCH, which provided a team-based coding environment to ensure unanimous agreement on each code. Researchers met biweekly throughout data collection and analysis to review and agree on coding, themes and patterns emerging from the data. In all cases, consensus was reached through discussion and debate.

Results

Participants (n = 52) ranged in age from 18 to 44 years (M = 33.20, SD = *7.88*), with 3 adolescents (ages 18 or 19) among the total of 52 participants. All participants lived in one of five rural counties in South Carolina. Most participants identified as Black/African American (62%, n = 29), with 13 participants (28%) identifying as White/Caucasian, two participants (1%) as another race, and one participant as Latina/Hispanic. The majority (81%, n = 38) of participants indicated household incomes of $49,999 or less per year; while 12 participants indicated household incomes of less than $15,000 per year. Twenty-three participants (44.2%) had completed an undergraduate degree or some college, while 17 (32.7%) participants completed a graduate degree. In addition, nine participants (17.3%) attained a high school diploma. Three participants did not provide their educational background. Twenty-four participants (46.2%) were married or in a stable relationship.

Most participants were not currently using any contraception method (43%, n = 20). The most common birth control method was sterilization (n = 7), with six of the seven participants indicating tubal ligation. The oral contraceptive pill was the next most common form of birth control among participants (n = 5), followed by the Depo-Provera

injection or "shot" (n = 3), condoms only (n = 3), and the arm implant (n = 1). Private health insurance was the most common health insurance among participants (36.5%, n = 19), with coverage through Medicaid obtained by 14 (27%) participants. Six participants (12%) indicated no health insurance coverage at the time of the interviews and seven (14%) received coverage through the Affordable Care Act.

Contraception Improves Health and Well-Being

Many participants believed contraception improved women's health and well-being, noting the importance of taking care of reproductive health needs along with seeking contraception. Participants perceived seeking contraception as a step toward healthy behavior that improved their overall health and well-being. Many participants discussed additional benefits of contraception beyond pregnancy prevention. One participant stated, "I've had doctors that have recommended me going on birth control pills before because my period is so erratic so I know that there are other benefits to them besides just the pregnancy prevention." Menstrual control and hormonal regulation were often regarded as positive attributes of birth control use. Another participant noted contraception as an opportunity to achieve better health, "not for preventing pregnancy, more so for my health issues that were going on."

Participants discussed how contraception fit into a range of other health issues that were important to them personally and within their communities. In particular, participants described the importance of maintaining health and well-being. Exercise, diet, and contraception were frequently cited as ways to remain healthy and as necessary to "taking care of yourself. Knowing what's going on with your body." Many participants described cardiovascular diseases, diabetes, and obesity as key issues within their communities. Participants experienced these issues personally and described how their community struggled with them. One participant described these issues as, "one of the main [concerns] that I can think of just because of poverty in some areas and the cheaper food is not good for you, which is a problem. So that's the biggest health problem I see here." In particular, participants tied contraception back to healthy choices like diet and nutrition to prevent cardiovascular diseases, diabetes, and obesity. One participant described the benefits of contraception related to healthy pregnancy spacing and choice,

> [Contraception] that's helping there [be a] low risk of pregnancy, that's helpful to the community. Think more, be more prepared. It's like a form of prepare and, along with birth control, I think it would be nice for if they do decide to have a child, steps to do that, positive steps.

She described contraceptive use, paired with information about healthy parenting, as helpful in creating healthy communities. Another participant noted,

> [It] would be good if they had something like [a telehealth service] where people are aware of what's going on and they take children in or even adults or whoever needs to go in and talk to someone about birth control methods to stop some of these young children from having babies… that don't even want them.

Participants believed birth control access and knowledge within the community illustrated an opportunity to reduce unintended pregnancy throughout the community. Lack of access to contraceptive care was seen as antagonistic to living a healthy life.

Accessing Contraception via Telehealth

Benefits

Participants cited various benefits of accessing contraception through telehealth. Many participants suggested that telehealth could increase knowledge about contraceptive options and reproductive health. Most participants focused on education and access to daily or monthly contraceptive methods, including the pill, the ring, the patch, and the injectable or "shot." All methods could be provided in a telehealth setting with a nurse telepresenter. Additionally, many participants noted healthcare services related to contraception were not readily available in their communities. One participant said, "it takes forever just to get an appointment." Participants expressed positive attitudes toward accessing contraceptive services at community health centers. Participants believed that videoconferencing with a health care provider would be a convenient and acceptable way to access contraceptive services. According to one participant, "it wouldn't be at all off-putting to me…you would still have two-way interaction and have reciprocal conversation with them." Although a physical exam should not be a requirement or barrier to accessing most forms of contraception, some participants also noted that telehealth provided the benefit of forgoing a physical exam.

Participants discussed the advantages of telehealth to reduce travel distances to access contraceptive services. Most participants noted costs, such as gas and transportation, are barriers to accessing health care. One participant said, "the closer the better because especially from where we live, gas and transportation is always an issue. So, having some place closer would be great." Participants described multiple opportunities for telehealth to address disparities in contraceptive care access, such as reducing travel distance, cost, and wait times.

Barriers

Participants described barriers preventing them from accessing contraception via telehealth, with confidentiality concerns frequently emerged during interviews. One participant worried, "you could be recorded and you not know it. Just confidentiality. You're putting yourself out there and you don't really know if it's just you and that person talking. Again, anything can be recorded and sent out." While participants understood their information should be kept private, accessing telehealth services from a location in their community created questions about the reality of personal medical information remaining confidential. One participant said, "confidentiality is key. I know with HIPPA everyone is supposed to be confidential, I know it doesn't always work out that way."

Participants also noted privacy as an issue that may serve as a barrier to telehealth. Participants were concerned with accessing telehealth services where others may recognize them. One participant said,

> I think that just being recognized and having people wonder about what you're doing or why you're there. I think that there is a generation that would still judge people on their sexual history. So, the potential of being seen there and having your people talk to somebody else's people would be an issue.

Participants acknowledged the likelihood of being seen accessing contraceptive care at a community location. Participants generally agreed that, "wherever you go in a small town, people will know." However, participants also noted opportunities to overcome this barrier, specifically providing suggestions for locations. Participants identified public libraries and community centers as acceptable locations because they offer private rooms for meetings and host a variety of events and activities. According to one participant:

> [People] need somewhere where they're comfortable, where they don't feel like they're judged…people in the community know that there's other reasons that you're attending a community center.

Another participant said, "having a centralized location that's not necessarily a doctor's office seems like that could definitely work… somewhere that people already go like a community center."

Many participants described receiving basic health screenings or health education at community locations. One participant said, "I've gone to community centers before actually to have screenings done, I don't think to have birth control prescribed, but it doesn't bother me because I trust that the physicians there, they're there because they want to be…" Some participants believed a telehealth service would fit within the context of existing community programming. According to one participant:

> People come to speak in our community that know different stuff even if they teach an exercise program or they teach something at the Y[MCA], even bringing outside people into help other people understand what's going on because again a lot of people don't get that information. So, I think just trying to find externals that provide that information.

Participants emphasized the importance of providing a service to the community. A community center location, instead of a medical facility, offers a unique synergy to provide needed resources to the community. According to one participant, "the community center would be, you know, there for the community, and it's not so much of I don't have the copay."

Participants described attracting community members to use the service by offering education and health information. One participant suggested, "put it on blast and [include] some topics, different topics, for different age groups [showing] this is what they should be concerned about." Another participant suggested a telehealth initiative could maintain a community focus by including an "actual resource center" to move beyond prescription services toward information provision and education.

Participants also described patient-provider relationship concerns. Most participants agreed that knowing the qualifications of the health care providers during telehealth consultations was important. One participant said, "as long as it was a real doctor. Credibility. And I don't even think it would necessarily have to be a doctor, just some sort of medical professional who would have the best interest of the patient in mind." Trust played an important role in the acceptability of telehealth.

Some participants expressed concerns about receiving personalized contraceptive counseling through telehealth. They felt mediated communication between themselves and the health care provider may make them uncomfortable. One participant noted, "you can see them from the video but it's just not the same." Participants valued personal relationships with their health care providers and worried that telehealth may not facilitate relationship building. One participant described the perceived distance and challenges related to developing a trusted patient-provider relationship through telehealth, "[the patient] might not feel as comfortable asking them questions, or the doctor might not know their specific scenario or situation, so that might be a problem."

To reduce concerns about trust and build rapport through telehealth appointments, one participant suggested, "maybe just show us what's there in the video. Like make us more aware of… like okay, this is the stuff that we have [in the room]." Another participant recommended improving trust

and building relationships by, "having a pre-form to fill out with your symptoms and background and things like that before speaking to the doctor." Providing insight into the patient's situation would improve the telehealth experience by increasing trust and building the patient-provider relationship. One participant suggested:

> Maybe if there was a third party. A lot of times when the doctor is talking to you, there's a nurse in the room, not all the time, but sometimes. I think just having the third party in the room just to keep everything in balance… and sometimes the doctors rush things and they use medical terminology and we're like uh and the nurse could break it down if you needed it.

Participants suggested incorporating additional healthcare providers on-site at the telehealth location to increase comfort and better reflect prior in-person healthcare appointments.

Discussion

In-depth interviews were conducted with 52 women to explore rural women's perceptions of contraception, and ways to increase access via a telehealth initiative. Participants discussed benefits and barriers to accessing contraception via telehealth. In line with prior research (Ferrer-Roca et al. 2010; Grindlay et al. 2013; Raymond et al. 2004), telehealth was cited as reducing wait times and travel distances to receive contraception. Telehealth offers access to contraception, which may be otherwise unavailable because rural health clinics are not required to provide contraception as part of standard services (Chambers 2017; U.S. Department of Health and Human Services 2006). The majority of participants expressed positive attitudes toward telehealth related to contraception, suggesting that telehealth is a satisfactory opportunity to improve health disparities in rural communities. Additionally, participants noted that attaining contraception via telehealth provides an important opportunity to learn more about contraception, specifically, and reproductive health, generally. Prior research demonstrates women desire in-depth, accurate information on a range of contraceptive options (Sundstrom 2012; Teal and Romer 2013; Vaaler et al. 2012), and suggests telehealth may provide a novel opportunity to improve health in hard-to-reach populations (Ferrer-Roca et al. 2010; Matusitz and Breen 2007).

Participants expressed confidentiality and privacy concerns related to obtaining contraception through telehealth, which elaborates on previous research indicating concerns exist about patient information sharing (Whitten and Love 2005). Successful telehealth initiatives should address these concerns by assuring patients that their information is secure and ensuring that all telehealth staff abides by HIPPA requirements. The first step in gaining trust from women is transparency, which can be achieved by explaining HIPPA requirements in everyday language and *showing* patients how information is maintained securely. In order to address concerns regarding judgment from other rural residents, contraceptive access telehealth initiatives should practice discretion and be housed in neutral community locations, such as libraries and community centers. This finding highlights prior research, suggesting rural areas hold conservative social norms related to contraceptive use and sexual health (Noone and Young 2009).

Participants also expressed concerns about the impact of telehealth on the patient–provider relationship, extending literature demonstrating relationship-centered care is critical in rural areas (Ferrer-Roca et al. 2010; Rosenwasser et al. 2013). Successful telehealth programs may need to focus on building relationships and increasing trust so women feel comfortable during contraceptive consultations. For example, participants recommended incorporating a patient-side healthcare provider, such as a nurse, in order to increase comfort with the telehealth process. Participants also suggested offering a tour of the telehealth consultation room and including opportunities for patients to provide a written summary of their history and needs prior to their appointment.

Participants expressed the importance of diet and exercise. Further, they noted obesity, diabetes, and cardiovascular disease were significant issues impacting their rural communities. Increasing contraceptive use as a means to a healthy lifestyle should be framed in terms of the health issues women care about. Telehealth initiatives should frame contraception as in line with the healthy choices women make and care about, including diet and exercise. This finding aligns with previous research indicating that women desired to see contraception as a part of their everyday lifestyle choices (Sundstrom et al. 2015).

Increasing hormonal contraceptive uptake among women also requires that telehealth interventions provide information to rural women about the non-contraceptive benefits of hormonal contraceptives (Iversen et al. 2017; Jones 2011; Teal and Romer 2013). In particular, contraceptive access telehealth initiatives should link hormonal contraception to the health concerns important to rural women. Specifically, telehealth programs should communicate that hormonal contraception lowers the risk of death for all diseases, including cancer and heart disease (Iversen et al. 2017; Jones 2011), as this information would tie into the health problems women experience and observe in their communities. By addressing and involving women's health concerns within the context of contraceptive use, contraceptive access telehealth initiatives have the opportunity to improve health outcomes, including reducing unintended pregnancy.

Implications for Practice

These findings provide theoretical and practical opportunities to guide telehealth interventions and health communication campaigns aimed at increasing contraceptive uptake and decreasing unintended pregnancies among women living in rural areas. Participants understood contraception as an important component of their health and well-being. These women considered their health holistically when making choices about contraception. In order to situate contraception within the context of overall health and well-being, interventions should address the effects of hormonal contraception on health outcomes beyond preventing pregnancy, including providing information on the lowered risk for heart disease and cancer. Telehealth interventions should provide comprehensive contraceptive information, including options, efficacy, and side effects. By highlighting the benefits of contraception, including decreased risk of cancer, heart disease and stroke, telehealth interventions can frame contraception as one way to assist in reducing health disparities important to rural communities (e.g., cardiovascular disease, unintended pregnancy).

Participants focused on short-term or monthly birth control options that could be provided through telehealth. Only one participant was currently using a long-acting reversible contraception method, the arm implant. However, to provide the full range of contraceptive options, telehealth programs will need to adapt new procedures, such as offering a traveling clinic, to accommodate contraception that requires informed consent and insertion by a trained clinician. Telehealth and health communication campaign planners should consider rural women a significant population in unintended pregnancy prevention and incorporate their concerns about the acceptability of telehealth when designing and implementing programs. Understanding and addressing rural women's stated needs and perceptions when choosing a contraceptive method may assist health communicators in implementing effective campaigns and interventions aimed at decreasing unplanned pregnancy through improved access.

Limitations

This study had several limitations. The majority of participants lived in one of the five counties. A more varied sample would provide greater insight into rural women's perceptions; findings are not generalizable to the larger population. Future research should determine concepts that resonate with rural women when designing telehealth initiatives. Additional research should focus on other rural counties experiencing reproductive health disparities.

This study offers insight into rural women's perceptions of contraception in order to develop a telehealth intervention to increase contraceptive uptake.

Conclusion

These findings provide theoretical and practical opportunities to guide telehealth interventions and health communication campaigns aimed at increasing contraceptive uptake and decreasing unintended pregnancies among women living in rural areas. Understanding and addressing rural women's stated needs and perceptions when choosing a contraceptive method may assist health communicators in implementing effective campaigns and interventions aimed at decreasing unplanned pregnancy through improved access.

Acknowledgements The authors would like to thank the College of Charleston's Women's Health Research Team for their support throughout the data collection and writing process. The authors would like to acknowledge financial support from Choose Well and the New Morning Foundation in the form of a graduate research assistantship.

Funding This research was supported in part by the College of Charleston's Faculty Research and Development Grant, Health and Human Performance Research and Development Grant, Humanities and Social Sciences Dean's Discretionary Funds, and the Office of Undergraduate Research and Creative Activities.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

References

ACOG. (2014). Health disparities in rural women. *Committee Opinion* (586). Retrieved from http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Health-Disparities-in-Rural-Women

Bennet, T. (2002). Reproductive health care in the rural United States. *The Journal of the American Medical Association, 287*(2), 112. https://doi.org/10.1001/jama.287.1.112-JMS0102-6-1.

Bennett, K. J., Olatosi, B., & Probst, J. C. (2008). *Health disparities: A rural-urban chartbook*. Retrieved from http://rhr.sph.sc.edu.

Broadband Now. (2018). *Internet access in South Carolina: Stats & figures*. Retrieved January 7, 2019, from https://broadbandnow.com/South-Carolina

Center for Connected Health Policy. (2017a). *South Carolina*. Retrieved from http://www.cchpca.org/jurisdiction/south-carolina

Center for Connected Health Policy. (2017b). *What is telehealth?* Retrieved from http://www.cchpca.org/what-is-telehealth

Chambers, S. N. (2017). *Rural health clinics*. Retrieved from http://scorh.net

Cleary, R., & Hutto, B. (2015-2016) Bill 1035: SC Telemedicine Act, Pub. L. No. 1035. Retrieved from https://www.scstatehouse.gov/sess121_2015-2016/bills/1035.htm

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA: Sage.

Ferrer-Roca, O., Garcia-Nogales, A., & Pelaez, C. (2010). The impact of telemedicine on quality of life in rural areas: The extremadura model of specialized care delivery. *Telemedicine and E-Health, 16*(2), 233–243. https://doi.org/10.1089/tmj.2009.0107.

Finer, L. B., & Zolna, M. R. (2011). Unintended pregnancy in the United States: Incidence and disparities, 2006. *Contraception, 84*(5), 478–485. https://doi.org/10.1016/j.contraception.2011.07.013.

Grindlay, K., Lane, K., & Grossman, D. (2013). Women's and providers' experiences with medical abortion provided through telemedicine: A qualitative study. *Women's Health Issues, 23*(2), e117–e122. https://doi.org/10.1016/j.whi.2012.12.002.

Guttmacher Institute. (2015). *State facts about unintended pregnancy: South Carolina*. Guttmacher Institute. Retrieved from http://www.guttmacher.org/statecenter/unintended-pregnancy/SC.html

Holleman, J. (2013, August 25). Major insurers jump on telemedicine bandwagon. *The State*. Retrieved from http://www.thestate.com/news/business/health-care/article14440676.html

Iversen, L., Sivasubramaniam, S., Lee, A. J., Fielding, S., & Hannaford, P. C. (2017). Lifetime cancer risk and combined oral contraceptives: The Royal College of General Practitioners' oral contraception study. *American Journal of Obstetrics and Gynecology, 20,* 17. https://doi.org/10.1016/j.ajog.2017.02.002.

Jones, R. K. (2011). *Beyond birth control: The overlooked benefits of oral contraceptive pills*. New York: Guttmacher Institute.

Kazley, A. S., Wilkerson, R. C., Jauch, E., & Adams, R. J. (2012). Access to expert stroke care with telemedicine: REACH MUSC. *Fronteirs in Neurobiology*. https://doi.org/10.3389/fneur.2012.00044.

Khajehpour, M., Simbar, M., Jannesari, S., Ramezani-Tehrani, F., & Majd, H. A. (2013). Health status of women with intended and unintended pregnancies. *Public Health, 127,* 58–64.

Kreps, G. L., & Neuhauser, L. (2010). New directions in eHealth communication: Opportunities and challenges. *Patient Education and Counseling, 78*(3), 329–336. https://doi.org/10.1016/j.pec.2010.01.013.

Lacey, L. (2011). *The physician workforce in South Carolina*. The Office for Healthcare Workforce Analysis and Planning. Retrieved from http://officeforhealthcareworkforce.org/docs/The_Physician_Workforce_in_SC.pdf

Matusitz, J., & Breen, G.-M. (2007). Telemedicine: Its effects on health communication. *Health Communication, 21*(1), 73–83. https://doi.org/10.1080/10410230701283439.

Medical University of South Carolina. (2015). MUSC health maternal fetal telemedicine. Retrieved September 14, 2015, from http://www.muschealth.org/telehealth/maternal-fetal-telemedicine/

Mental Health Weekly. (2010). S.C. telepsychiatry project in ERs improves care, reduces cost. *Mental Health Weekly*. https://doi.org/10.1002/mhw.20234.

Mental Health Weekly. (2014). Growing MH telepsychiatry program in South Carolina. *Mental Health Weekly*. https://doi.org/10.1002/mhw.20438.

National Rural Health Association. (2013). National Rural Health Association Policy Brief: Rural women's health. Retrieved from http://www.ruralhealthweb.org/download.cfm?downloadfile=F5A503E1-3048-651A-FE066957562D3AC7&typename=dmFile&fieldname=filename

Noone, J., & Young, H. M. (2009). Preparing daughters: The context of rurality on mothers' role in contraception. *The Journal of Rural Health, 25*(3), 282–289.

Pai, A. (2014, September 24). Planned Parenthood pilots video app to prescribe birth control. *MobiHealthNews*. Retrieved from http://mobihealthnews.com/36789/planned-parenthood-pilots-video-visit-app-to-prescribe-birth-control/

Raymond, E. G., Spruyt, A., Bley, K., Colm, J., Gross, S., & Robbins, L. A. (2004). The North Carolina DIAL EC project: Increasing access to emergency contraceptive pills by telephone. *Contraception, 69*(5), 367–372. https://doi.org/10.1016/j.contraception.2004.02.003.

Rosenwasser, L. A., McCall-Hosenfeld, J. S., Weisman, C. S., Hillemeier, M. M., Perry, A. N., & Chuang, C. H. (2013). Barriers to colorectal cancer screening among women in rural central Pennsylvania: Primary care physicians' perspective. *Rural and Remote Health, 13*(4), 2504–2521.

Rubin, H. J., & Rubin, I. (2012). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, Calif.: SAGE.

Rural Health Information Hub. (2017). *South Carolina*. Retrieved from https://www.ruralhealthinfo.org/states/south-carolina

South Carolina Campaign to Prevent Teen Pregnancy. (2015). *County info*. Retrieved from http://www.teenpregnancysc.org/county-info

Sundstrom, B. (2012). Fifty years on "the pill": A qualitative analysis of nondaily contraceptive options. *Contraception, 86*(1), 4–11. https://doi.org/10.1016/j.contraception.2011.10.016.

Sundstrom, B., DeMaria, A. L., Meier, S., Jones, A., & Moxley, G. E. (2015). "It makes you rethink your choice of the pill": Theory-based formative research to design a contraceptive choice campaign. *Journal of Health Communication, 20*(11), 1346–1354. https://doi.org/10.1080/10810730.2015.1018650.

Swanepoel, D. W., Clark, J. L., Koekemoer, D., Hall, J. W., III, Krumm, M., Ferrari, D. V., et al. (2010). Telehealth in audiology: The need and potential to reach underserved communities. *International Journal of Audiology, 49*(3), 195–202. https://doi.org/10.3109/14992020903470783.

Teal, S. B., & Romer, S. E. (2013). Awareness of long-acting reversible contraception among teens and young adults. *Journal of Adolescent Health, 52*(4), S35–S39. https://doi.org/10.1016/j.jadohealth.2013.01.013.

The American Telemedicine Association. (2012). *What is telemedicine?* Retrieved from http://www.americantelemed.org/about-telemedicine/what-is-telemedicine#.VBdPC83vu4I

The Kaiser Family Foundation. (2014). *Primary care health professional shortage areas (HPSAs)*. Retrieved April 12, 2016, from http://kff.org/other/state-indicator/primary-care-health-professional-shortage-areas-hpsas/

The National Campaign to Prevent Teen and Unplanned Pregnancy. (2014). *National and State Data*. Retrieved from http://thenationalcampaign.org/data/landing

Thomas, L., & Capistrant, G. (2015). *State telemedicine gaps analysis: Physician practice standards & licensure* (State Telemedicine Gaps Analysis) (p. 88). American Telemedicine Association.

U.S. Department of Health and Human Services. (2006). *Comparison of the rural health clinic and federally qualified health center programs* (p. 46). Sterling, VA: U.S. Department of Health and Human Services, Health Resources and Services Administration, Office of Rural Health Policy. Retrieved from https://www.hrsa.gov/ruralhealth/policy/confcall/comparisonguide.pdf

Vaaler, M. L., Kalanges, L. K., Fonseca, V. P., & Castrucci, B. C. (2012). Urban–rural differences in attitudes and practices toward long-acting reversible contraceptives among family planning providers in Texas. *Women's Health Issues, 22*(2), e157–e162. https://doi.org/10.1016/j.whi.2011.11.004.

Vestal, C. (2014, June 26). Getting rural patients psychiatric help fast. *Stateline.Org*. Retrieved from http://eds.a.ebscohost.com/eds/detail/detail?vid=6&sid=fd90d033-c8fb-4748-8fe1-26291f3e78e0%40sessionmgr4005&hid=4205&bdata=JnNpdGU9ZW

RzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=2W6337174056&db=pwh

Whitten, P., & Love, B. (2005). Patient and provider satisfaction with the use of telemedicine: Overview and rationale for cautious enthusiasm. *Journal of Postgraduate Medicine, 51*(4), 294.

Willoughby, J. F., & Furberg, R. (2015). Underdeveloped or underreported? Coverage of pretesting practices and recommendations for design of text message-based health behavior change interventions. *Journal of Health Communication, 20*(4), 472–478. https://doi.org/10.1080/10810730.2014.977468.