

WOMEN LIVING WITH HIV IN THE SOUTH: FACILITATORS AND BARRIERS TO HIV
CARE

by

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Abstract

Currently, the Southern states in the United States (US) are facing an epidemic of HIV that disproportionately affects the region more than any other region of the country. The percentage of new diagnoses in southern rural communities remains steady but women living with HIV (WLWH) are facing worse health outcomes compared to men living with HIV. The purpose of this project was to determine the facilitators and barriers to HIV care engagement and antiretroviral (ART) medication adherence for women living with HIV who reside in rural areas of the Southeast region of the US. This qualitative descriptive study utilized secondary data collected in my project mentor's parent study titled "*Modeling perceptions of social location and decision-making to develop targeted messaging promoting HIV care engagement and ART adherence among women living with HIV in the South*" [NIH/NINR: 1R21NR020164]. The parent study included 40 in-depth interviews using a semi-structured interview guide with WLWH from the Southeast region of the US to understand the facilitators and barriers they experience with engaging in HIV care and adhering to ART medications. Ten (N=10) of the 40 women interviewed, the sample for this project, reported residing in a rural area based on their zip code of residence and the US Census designations for urbanized locations. First-level in vivo coding and second-level pattern coding was conducted. Analytic lines for further thematic analysis of the entire data set were then identified in collaboration with my project mentor and organized under the overarching categories of either facilitators or barriers to HIV Care engagement and medication adherence. For WLWH in rural areas, the themes identified as facilitators were Accessibility to Care: Personal Resources and Structural Facilitators. The themes identified as barriers were Lack of Accessibility to Care Due to Proximity, Lack of Accessibility to Care: Personal Resources, Structural Barriers, Lack of Social Support, and

Issues of Anonymity. These findings differed from the findings in a review of the literature. The literature identified the main rural facilitators as social support and telemedicine and the main rural barriers as HIV-related stigma and confidentiality concerns. Therefore, additional research is needed to investigate the specific experiences of women living with HIV in the South to shed light on different strategies that may enhance their engagement in HIV care and adherence to ART medications.

Background and Significance

HIV (human immunodeficiency virus) is a virus that attacks the cells of the immune system, increasing the patient's susceptibility to other infections and diseases (CDC, 2021a). HIV is spread through blood, vaginal fluids, semen, rectal fluids, or breast milk. Women have a greater risk of HIV transmission during a sexual encounter compared to men (U.S. Department of Health & Human Services, 2023). Preventative measures to decrease the risk of contracting HIV include not sharing needles and using a condom during sexual intercourse (CDC, 2021a). If contracted, HIV can be treated with antiretroviral therapy (ART). There is no cure for HIV, however antiretroviral therapy controls the amount of HIV in the body, allowing patients to live longer and healthier lives (CDC, 2021b). A systematic review and meta-analysis of ART adherence interventions for women living with HIV from 2019 revealed that ART adherence in women is increased by behavioral interventions (Pellowski et al., 2019). However, Pellowski (2019) also highlighted the lack of interventions specifically tailored for women which consistently consider such factors as geographic context.

Currently, the Southern states in the United States (U.S.) are facing an epidemic of HIV that disproportionately affects this region more than any other region in the nation. The South, comprised of 16 states and the District of Columbia, accounts for 51% of the new HIV cases annually with only 38% of the U.S. population living in the region (CDC, 2019). Traditionally, HIV is seen as an urban issue, however, the percentage of new diagnoses in southern rural communities is increasing. In 2018, the Centers for Disease Control and Prevention (CDC) revealed that 23% of new HIV diagnoses in the South were in suburban and rural areas (HIV.gov, 2018).

Geographically, very specific factors seem to be driving the epidemic in the South. The CDC considers socioeconomic factors to be key in driving the HIV epidemic in the South (CDC, 2019). The Southern states have the highest poverty rate and the lowest median household income compared to other regions in the United States (CDC, 2019). These factors are associated with poorer health outcomes. Additionally, the CDC notes that about half of all Americans without health insurance live in the South (CDC, 2019). Therefore, treatment is less likely to be sought out by these individuals. Lastly, the stigma surrounding HIV is prevalent in the South (CDC, 2019). This could limit an individual's willingness to seek treatment or disclose their HIV status (CDC, 2019). Overall, these factors are considered some of the driving forces behind the HIV epidemic and there is a need to investigate the specific experiences of women living with HIV in the South to shed light on different strategies that may encourage their engagement in HIV care and adherence to ART medications. Therefore, the purpose of this Signature Honors Project will be to determine the facilitators and barriers to HIV care engagement and ART medication adherence for women living with HIV in a rural area of the Southeast region of the US.

Literature Review

Consistent with the purpose of this project, a review of the literature was conducted to identify what is currently known about the facilitators and barriers to HIV care engagement and ART adherence among women living with HIV in the South. Following is an overview of the methods and results of the literature review, along with a discussion of the strengths and limitations.

Methods

Search Process

The search process began by meeting with a medical librarian to develop search terms and inclusion and exclusion criteria. The electronic database, CINAHL, was used to complete the literature search. The search terms utilized were *HIV, medication adherence, rural, US, South, facilitators, and barriers*. The inclusion criteria were articles that were published in the last 5 years, conducted in the Southern, US, and primary research. The exclusion criteria were articles that were older than 5 years, conducted outside of the Southern, US, and not primary research. Articles including men were not initially included in the search, however, a minimal number of studies specifically focused on HIV care engagement and ART adherence among women in the South were retrieved, so in consultation with my Honors project mentor, the search was expanded to include both men and women. Using the database search strategy and hand search method, a total of 15 studies were included based on the inclusion and exclusion criteria. The data were then extracted the data from each article into a matrix (Garrard, 2017) and reduced into the following categories: APA citation, year, location, purpose, sample, design, measures, methods, findings (facilitators/barriers), theoretical model, limitations, synthesis section, and Johns Hopkins Tool (Johns Hopkins Nursing Evidence-Based Practice, 2017) for evaluation (See Appendix A).

Data Evaluation

Data was evaluated utilizing the Johns Hopkins Tool, Appendix D. Appendix D of the Johns Hopkins Tool is utilized to determine the evidence level for each journal article. With this tool, the higher the level, the better quality of the journal article (“Johns Hopkins Nursing Evidence-Based Practice”, 2017). All of the articles were identified as Level III (Appendix A). All of the articles included were descriptive and did not examine causal relationships, or the

randomization of participants; therefore, the evidence used in this review was deemed of moderate quality. No studies were excluded based on the strength of the evidence.

Data Analysis

My first step in data analysis was grouping the articles according to where the priority populations in the studies resided geographically and categorized them as rural, nonrural, both rural and nonrural, or not specified. From this initial breakdown, there were three rural, one nonrural, three both rural and nonrural, and eight non-specified articles. Then the collective decision was made to focus on both general and rural facilitators and barriers to HIV care engagement and ART adherence. Next, the facilitators and barriers that the articles stated were identified and labeled if the facilitator or barrier was from a rural or not specified article. This showed a pattern revealing the facilitators and barriers that were generally rural-based or overlapping. The overlap between general and rural-specific facilitators and barriers was the basis of the visual analysis (Figure 1), to depict how the facilitators and barriers could be the same but also could be different based on geographic location.

Results

In this review of the literature general facilitators and barriers to HIV care engagement and ART adherence in the South were identified, along with facilitators and barriers to HIV care engagement and ART adherence specific to rural designated areas in the South. In the following section, the findings will be discussed based on the overall facilitators and barriers identified, then based on rural-specific facilitators and barriers.

Facilitators of HIV Care Engagement and ART Adherence

The main general facilitator of HIV care engagement and ART adherence in the South that were frequently referenced in the review were social support and personal resources.

Additional facilitators that were less frequently addressed were respect (Taylor et al., 2018) and community-based strategies (Matthews et al., 2020).

Social support was the most frequently identified facilitator, being referenced in four separate articles (Taylor et al., 2018; Caiola et al., 2018; Hill et al., 2018; Kalichman et al., 2017). Some of the people identified as vital social support for participants were family (Hill et al., 2018), healthcare providers (Taylor et al., 2018), peers (Hill et al., 2018), and animal companions (Caiola et al., 2018). It was noted that social support includes both emotional support and respect for a person's situation. According to Kalichman et al (2020a), participants that were currently prescribed ART and those that were currently HIV virally suppressed reported larger social networks.

Personal resources were another frequently identified facilitator of HIV care engagement and ART adherence for persons living with HIV in the South. Examples of personal resources included having a personal vehicle and stable housing (Caiola et al., 2018). As described by Caiola et al. (2018) in a qualitative descriptive study, having a personal vehicle allowed the participants to attend appointments and not rely on public transportation (Caiola et al., 2018). Additionally, having stable housing benefits the participant's overall health and well-being due to access to clean water and the ability to cook and feed oneself and their family (Caiola et al., 2018). Overall, the research suggested that having these personal resources facilitates HIV care engagement and ART adherence among persons living with HIV.

Barriers to HIV Care Engagement and ART Adherence

In this review, the main general barrier to HIV care engagement and ART adherence for persons living in the South was HIV-related stigma. Additional general barriers that were

mentioned included depression (Taylor et al., 2018), lack of social support (Taylor et al., 2018), and transportation barriers (Pope et al., 2022).

HIV-related stigma was the most referenced barrier to care being addressed in seven separate studies (Taylor et al., 2018; Caiola et al., 2017; Kalichman et al., 2017; Kalichman et al., 2020b; Matthews et al., 2020; Reif et al., 2019; Ward et al., 2021). Findings from Reif et al. (2019) revealed the prevalence of stigma, with 36% of participants experiencing verbal abuse in the past 3 months and 25% of participants reporting being insulted for their HIV status in the past 3 months. The stigma people living with HIV face impacts their engagement to care as high levels of internalized stigma are associated with poorer HIV medication adherence and missing HIV medical care appointments (Reif et al., 2019).

HIV-related stigma by healthcare professionals was referenced first. Findings from Matthews et al. (2020) suggested that in a clinical setting, participants reported being shamed for contracting HIV and were encouraged to self-stigmatize (Matthews et al., 2020). Additional studies revealed the fear of stigma from within the participant's social network (Hill et al., 2018). For example, Hill et al. (2018) found that fear of stigma is one of the most common barriers to HIV status disclosure (Hill et al., 2018). This hinders the building of a participant's social network, which is a major facilitator of HIV care engagement and ART adherence (Hill et al., 2018).

Faith-based stigma toward those living with HIV was another form of HIV-related stigma that was discussed. A study in 2020 discussed how faith leaders refused to talk about HIV. This silence about the topic creates an implicit stigma surrounding HIV (Matthews et al., 2020). Matthews et al. (2020) also addressed the importance that faith-based leaders hold in their community and their engagement or lack thereof influences the community members' decision-

making about health behaviors. Overall HIV-related stigma was the most prevalent barrier addressed across all the studies.

Rural Facilitators to HIV Care Engagement and ART Adherence

In studies where the geographic location of the study population was designated as rural by study authors, the main facilitators to HIV care engagement and ART adherence were social support and telemedicine. The additional rural designated facilitator that was mentioned once was an increased education and income (Edmonds et al., 2021).

Social support in a rural designated area shared some similarities with the general facilitators already identified. An additional finding that was specific to rural areas was that the timing of social support is imperative for HIV care engagement and ART adherence (Hill et al., 2018). Hill et al (2018) found that social support from informal networks, such as family and peers, is more important in earlier stages, and social support from formal networks, such as healthcare providers, was more important in the later stages of treatment (Hill et al., 2018).

Telemedicine was identified as a facilitator specific to HIV care engagement and ART adherence in rural areas that were not addressed as a general facilitator. Folake et al (2021) tested the use of telemedicine in a rural population as a more effective means of accessing care. This study found that the mean CD4 count of participants was statistically higher when the participant utilized telemedicine rather than the traditional method of attending appointments (Folake et al., 2021). In other words, telemedicine was a means to reduce the structural barrier of increased drive time, which is associated with rural counties and racial/ethnic minorities (Kimmel et al., 2018).

Rural Barriers to HIV Care Engagement and ART Adherence

In rural designated areas the main barriers to HIV care engagement and ART adherence were HIV-related stigma and confidentiality concerns. The additional rural designated barrier identified was race-related discrimination (Dale et al., 2019).

HIV-related stigma was specified as a general barrier and additionally a main barrier in rural communities. It was found that internalized AIDS stigma was associated with population density. Internalized stigma, defined as having a sense of being inferior to others due to living with HIV, was found to be the highest among individuals living in small-urban and rural areas (Kalichman et al., 2017). Additionally, in a rural setting, it was found 47% of participants experienced at least one enacted stigma event during a 12-month observation period. Enacted stigma represents past experiences of prejudice or discrimination (Kalichman et al., 2017). Kalichman et al (2020b) found that greater stigma experiences are related to greater levels of HIV-related stress (Kalichman et al., 2020b). Kalichman et al. (2020b) also described the participants who reported at least four stigma experiences demonstrated adherence levels that were at considerable risk for developing a treatment-resistant virus.

Confidentiality concerns were another barrier that was specified to a rural population. The issue of confidentiality in a rural area took another perspective due to the small populations of the communities where participants resided. For example, Matthews et al (2020) reported how participants hesitated in going to clinics in rural areas because it would mean seeing someone they knew (Matthews et al., 2020). Additionally, it was found that among participants in rural designated areas, concerns about trust and confidentiality were major barriers to accessing emotional support from non-kin network ties (Hill et al., 2018). The participants reported concerns about others finding out their HIV status and being subjected to the HIV-related stigma (Hill et al., 2018).

This literature review provides an overview of published literature identifying facilitators and barriers to HIV care engagement and ART adherence in the South. An additional focus of this review was the facilitators and barriers to HIV care engagement and ART adherence in rural designated areas in the South. The main finding was there was an overlap between the general facilitators and barriers and the rural facilitators and barriers. This overlap occurred with the facilitator of social support and the barrier of HIV-related stigma. However, differences in the facilitators and barriers in a rural area were also noted, namely the facilitator of telemedicine and the barrier of confidentiality concerns. (See Appendix B). When completing the search process for articles meeting the inclusion and exclusion criteria, a deficit in research regarding the facilitators and barriers to care in rural designated areas was noted. Additionally, there was a gap in the literature specifically addressing women living with HIV, which is the priority population of this Honors project.

Strengths and Limitations of Literature Review

One strength of my literature review was working with a medical librarian to conduct the search. When collaborating with the librarian, her expertise helped to develop relevant search terms and inclusion and exclusion criteria. Another strength of my literature review was the systematic approach of utilizing a matrix format to reduce the data and organize the findings from the journal articles in a systematic way for analysis.

One limitation of this literature review was the few number of studies that fit the original inclusion and exclusion criteria. Due to the limited number of studies retrieved, it was decided to broaden the criteria so additional studies of potential relevance might be retrieved. However, this reduced the specificity of the literature regarding women living with HIV in the South, the population of interest.

Study Purpose

Overall, as identified in the literature review, there is a gap in the research regarding the facilitators and barriers to HIV care engagement and medication adherence among women living with HIV in rural areas of the South and this project was developed to help fill this gap in the literature. This project was guided by the following research aim and question:

Aim: To determine the facilitators and barriers to HIV care engagement and medication adherence for women living with HIV in a rural area of the Southeast region of the US.

Research Question: What are the facilitators and barriers to HIV care engagement and medication adherence for women living with HIV in a rural area of the Southeast region of the US?

Methods

The primary objective of this descriptive study was using secondary analysis of data collected in my project mentor's parent study titled "*Modeling perceptions of social location and decision-making to develop targeted messaging promoting HIV care engagement and ART adherence among women living with HIV in the South*" [NIH/NINR: 1R21NR020164] to determine the facilitators and barriers to HIV care engagement and medication adherence for women living with HIV in a rural area of the Southeast region of the US. My project mentor completed 40 in-depth interviews using a semi-structured interview guide with women living with HIV residing in Southern states who were living in either rural or non-rural areas. The eligibility criteria for participation in the parent study were people who: (1) self-identified as a woman; (2) self-identified as Black, Latina, or White; (3) living with HIV or AIDS; (3) ≥ 18 years of age; (4) able to read and communicate in English; and (5) mentally competent to provide informed consent. The interview guide has specific questions prompting participants to explore

how their geographical location impacts their experiences of engaging in HIV care and adhering to their ART medication.

Ethics

The Collaborative Institutional Training Initiative (CITI) modules were completed and an Institutional Review Board approval to access the study data as study personnel was obtained.

Data Management and Analysis

De-identified interview transcripts were utilized that had been transcribed verbatim by a professional transcription service and verified for accuracy by study personnel. Then the first-level in vivo coding, second-level pattern coding, and thematic analysis of the entire data set was conducted in collaboration with my project mentor (Braun & Clarke, 2006). The themes were organized under the overarching categories of either facilitators or barriers to HIV care engagement and medication adherence.

Results

Sample

The parent study included 40 in-depth interviews using a semi-structured interview guide with WLWH from the Southeast region of the US to understand the facilitators and barriers they experienced when engaging in HIV care and adhering to ART medications. Ten (N=10) of the 40 women interviewed reported residing in a rural area based on their zip code of residence and the US Census designations for urbanized locations.

The demographic characteristics of the participants living in a rural area were: 70% of participants were >50 years old, 80% of participants identified as Black or African American, 60% of participants have lived with HIV for >20 years, 60% of participants were above the

federal poverty line, and 60% of participants finished high school or GED equivalent. (See Appendix C).

Qualitative Results

Specific facilitators and barriers to HIV care engagement and ART adherence in the Southeast were identified in rural designated areas in the South (See Appendix D).

Rural Facilitators to HIV Care Engagement and ART Adherence

The themes identified as facilitators were Accessibility to Care: Personal Resources and Structural Facilitators.

Accessibility to Care: Personal Resources.

Personal resources were defined as material items or financial assets aiding HIV care access. The most common personal resource that was identified as having a personal vehicle. This facilitator was referenced by four (N=4) participants. Participants stated that having a car allowed them to travel to appointments and increased their HIV care engagement. One participant stated, “I take my car. I’m very intent of making sure I make my appointments.” Another personal resource that was identified was access to housing. One participant stated, “Well, I have housing because of my situation...And by me having HIV, I was able to get on the voucher program.” This participant revealed that having their own home has made caring for themselves easier.

Structural Facilitators

Structural facilitators were defined as broader political, economic, social, and environmental conditions, institutions, and/or policies to help WLWH engage in HIV care and adhering to ART medications. The structural facilitators that were identified included access to Medicaid, ministry services, the Ryan White Program, mailed medications, gas stipends,

telehealth, and provided transportation. Medicaid was identified as a structural facilitator because it paid for anything HIV-related that the participant required. One woman stated, "It's pretty decent so far. There hasn't been anything that they haven't paid for me that was HIV-related." A ministry service was found to help a participant afford their medications. The participant referenced this when they stated, "It's a thing through the [clinic name] that they sign you up with through [ministry service]. And they help with the medication." Similarly, the Ryan White Program helped participants pay for medication that insurance would not cover. One participant stated, "Ryan White Program helps. It helps pay for my medication because even though I have insurance, it won't pay for my medication." Telehealth was identified as a structural facilitator because of programs such as MyChart. One participant stated:

MyChart is the bomb diggity, and I can request refills on there. I can cancel appointments, and request appointments at a very certain time, so I could read how my... I can always find out what I weighed. And when was the last time I went. I can read all of my blood work, the whole thing.

All ten participants (N=10) referenced mailed medications and had their medications mailed. Participants stated that having their medications mailed made it easier to take because they did not have to remember to go and pick up their medication. In addition, participants appreciated that the package the medications came in was not labeled so it maintained their anonymity. One participant stated, "Now, it's a lot easier because I don't have to pick them up because they're mailed because the way they're packaged, they're not labeled with anything on top like anything like they were in the pharmacy." Gas stipends were another main facilitator for WLWH in rural designated areas. Due to the increased distance the participants had to travel, they were provided money by the HIV clinics that the participants attended. The gas stipend covered travel to

anything involving HIV treatment. One of the women stated, “If you drive down to your appointment or for labs or anything involving your treatment, you get a \$10 voucher for gas.” The last structural facilitator was transportation provided to appointments. This service was provided by the HIV clinic and ensured that the participants had a way to get to their appointments if they did not have access to personal transportation. This was referenced by a participant when they stated, “As long as they provide transportation for me, I'm great.”

Rural Barriers to HIV Care Engagement and ART Adherence

The themes identified as barriers were Lack of Accessibility to Care Due to Proximity, Lack of Accessibility to Care: Personal Resources, Structural Barriers, Lack of Social Support, and the Issue of Anonymity (See Appendix E).

Lack of Accessibility to Care Due to Proximity

Lack of accessibility to care due to proximity encompassed the idea that WLWH in rural designated areas have increased drive time to HIV care appointments and there is a lack of nearby HIV clinics. One participant stated “It’s a 37 mile away. So round trip that’s 74 miles.” Another participant provided insight on the lack of nearby HIV clinics in a rural designated area when she stated, “Well, just the travel. I would say that that would be the only thing. If I had great doctors like they are and some they're interns, but if I had them here, it would be great.” Overall, participants revealed that the increased distance, lack of nearby clinics, and drive time hindered their HIV care engagement.

Lack of Accessibility: Personal Resources

Lack of accessibility: personal resources was another barrier identified with personal resources being defined as material items or financial assets aiding HIV care access. This theme included the high cost of gas and difficulty driving long distances in bad weather. Participants

expressed concern about the high cost of gas and how the long-distance driving to HIV care appointments was financially stressful. One participant stated “Well, lately it's been a gas problem. Gas being so high, that makes it hard.”

Structural Barriers

Structural barriers were defined as broader political, economic, social, and environmental conditions, institutions, and/or policies that were either lacking or hindered WLWH engage in HIV care and adhering to ART medications. Firstly, this included limited Medicare advantage programs in rural areas because qualification for the program is based on a person's zip code of residence. One participant stated, “Another thing about this community is when you're looking for Medicare advantage programs, the first thing they ask you for is your zip code.” Secondly, it was found that there is a lack of helpful policies and institutions provided in rural areas.

Participants cited that other people living with HIV receive HIV housing, vouchers for clothing and furniture, and condoms, which are not available in a rural setting. One participant simply put, “Resources are completely limited here.” Finally, there is no nearby public transportation. One participant stated, “So I think the nearest buses are commuter bus that takes you into [city name #1], but you got to get to the commuter bus.”

Lack of Social Support

Lack of social support was another main barrier to HIV care engagement and ART adherence. It was first found that WLWH have decreased connectivity, a lack of support groups, and far away support systems. For instance, one participant stated, “No. I have a sister that's I'd say an hour and a half away, and then my family is three hours away.”

Issues of Anonymity

Issues of anonymity was the last rural barrier identified. The first component of the barrier was fear of recognition. Participants revealed that they were fearful of being recognized when picking up their HIV medications and attending HIV clinics. One participant stated:

I know in the beginning I used to get my medications from the drug store and initially it started out going to the local drug store at a little small town and I didn't really like that because little, small town of less than maybe 200 people where everybody knows your name and I really hated that.

The second component of this barrier is in a rural area, everyone knows everyone therefore, rumors floating around about the participant's HIV status deterred them from attending HIV care appointments. A participant stated, "Yeah, it does because, okay, like I said, the person that I contracted it from, everybody knew about the person was positive. And because I was with him, of course, there were rumors floating around about..." Both of these components stem from HIV-related stigma. In addition, intersectional stigma was noted as one participant revealed that stigma coincides with racism and prejudice in rural areas. For example, one woman stated:

...living in rural areas my whole life only leaving for a short time to go to college in [city name], I see that in my area there is a whole lot of prejudice and racism anyhow, and that's just for... That stems from a large amount of just ignorance, of just knowing about other people, of just not getting the chance to know how your counterparts live because of what you may have been taught and accepting that. When you couple that, if you're already seeing me as a certain way, and then you find out that I have something that you already heard such horrible things about, then naturally you're going to think somehow I'm just not a good person.

Overall, the HIV-related stigma that is present in rural areas causes WLWH to maintain their anonymity, as there is fear of recognition in the small rural community.

Discussion

The purpose of this research was to determine the facilitators and barriers to HIV care engagement and medication adherence for women living with HIV in a rural area of the Southeast region of the US.

When comparing the research findings to the findings from the literature review some similarities and differences exist. Firstly, the literature review identified the rural-specific barriers of confidentiality concerns (Hill et al., 2018; Matthews et al., 2020) and HIV-related stigma (Kalichman et al., 2020b; Kalichman et al., 2017). These barriers were similar to the research findings regarding barriers to issues of anonymity. In addition, another similarity was the literature review identified the rural-specific facilitator of telemedicine (Folake et al., 2021; Kimmel et al., 2018). This finding was found in the research to be a component of the facilitator, structural facilitators. However, the main difference was the literature found the rural facilitator of social support (Hill et al., 2018) to be prevalent however this was not found within the research.

The results revealed specific facilitators and barriers for women living in a rural designated area. The qualitative data suggests incorporating facilitators into a patient's plan of care. For instance, connecting women with structural facilitators already in place based on their needs. In addition, ensuring the women have the personal resources available to utilize and if not connecting them with the services available to ensure HIV care engagement and ART adherence. Contrastingly, the qualitative data suggests barriers that must be reduced to allow for increased HIV care engagement and ART adherence. Interventions that could potentially be utilized

include increasing HIV clinics in rural designated areas, initiating support groups, and ensuring transportation to HIV care appointments.

Strengths and Limitations

The strength of this research was limited prior research on this subject, particularly among the priority population, women living with HIV. Since there is limited previous information on this topic, this research is valuable to tailor interventions for WLWH in a rural designated area.

The primary limitation of this work is the use of secondary data. The parent study was not solely focused on a sample of rural women, therefore, data saturation for the derived themes was not specifically noted in this subpopulation of women and omissions in the thematic analysis are possible. In addition, the parent study had different research questions so the interview questions were not tailored specifically to this research and could have limited the data gathered.

Implications

Overall, after identifying the specific rural facilitators and barriers to HIV care engagement and ART adherence, these themes can be incorporated into a patient's plan of care and tailored interventions to increase HIV care engagement and ART adherence. They can also be considered in policy making. This research is addressing an important determinant of health, geographical location, and ensures that care plans can be personalized in the future for WLWH in a rural designated area in the Southeast region of the US. However, further research must still be conducted regarding WLWH, people living in rural designated areas, and WLWH in rural designated areas.

Conclusions

In conclusion, facilitators and barriers to HIV care engagement and ART adherence were identified for women living with HIV in a rural area of the southeast region. The facilitators identified were Personal Resources and Structural Facilitators. The barriers identified were Lack of Accessibility to Care Due to Proximity, Structural Barriers, Issues of Anonymity, Lack of Social Support, and Lack of Accessibility: Personal Resources. Overall, this research is valuable to ensure tailored interventions and personalized care plans for WLWH in a rural designated area in the Southeast US.

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Appendix A

Matrix

APA Citation	Purpose	Sample	Design	Findings	Level of Evidence
Barbara et al., 2018	'We explored differences in perspectives on engagement in HIV care between people living with HIV who attended (arrived) their initial medical provider visit'	N = 40 patient participant interviews	In-depth Semi Structured Interviews	<p>Facilitators: relational aspects of HIV care: need for emotional support, respect, and collaborative decision-making with providers.</p> <p>Barriers: Discrimination or "enacted stigma", depression, lack of social support</p> <p>Providers focused more on the structural barriers to care (lack of transportation, and housing) and identified facilitators including shorter wait times, reduced bureaucracy and text reminders.</p>	III
Caiola et al., 2017	The purpose of this paper is to explore the social determinants of health for African-American mothers living with HIV by examining how mothers describe their social location at the intersection of gender-, race-, and class inequality; HIV-related stigma; and motherhood."	N = 18 African American mothers living with HIV, 8 interviews total	In-depth Semi Structured Interviews	There is an interlocking system of race, class, gender inequality, motherhood, and HIV-related stigma. This intersection influences the social location and health experiences of African American mothers living with HIV. Structural inequalities may function to produce poorer health outcomes.	III

Caiola et al., 2018	The purpose of our study was to explore the social determinants of health for Black mothers living with HIV in the Southeastern region of the United States."	N = 18 Participants, 48 Interviews	In-depth Interviews and Photo Elicitation	Facilitators: social support, spiritual belief, animal companions, relaxing physical environment, private vehicles, stable housing situation	III
Dale et al., 2019	This study aims to bridge the gap in the literature by providing insight into the relationships between racial discrimination, HIV-related discrimination, and GRMs and barriers to HIV-related care among BWLWH."	N = 100 Black Women Living with HIV	Cross-sectional Analysis	Race-related discrimination, HIV-related discrimination, and GRMs related and contribute to barriers to care.	III
Edmonds et al., 2021	"To explore the associations of urbanicity with clinical/behavioral outcomes and sociodemographic factors among women living with HIV in the Southern United States"	N = 523 Women Living with HIV	Cross-sectional Analysis	Women from lower population density areas of the Southern US reported higher education and income levels, more likely to have higher CD4 counts, and more likely to be virally suppressed.	III

Hill et al., 2018	"...investigate the forms and sources of social support deemed most integral to the diagnosis, care engagement, and medication adherence behaviors of a diverse sample of PLWH in a mostly rural health district in the Southeastern United States."	N = 21 People Living with HIV	In-depth Interviews	Support from informal networks (mainly familial support) is principally important during the earlier stages of illness. Then formal networks become increasingly important during the latter stages of treatment. Barriers to care that participants identified included concerns with trust and confidentiality when accessing emotional support from non-kin network ties	III
Kalichman et al., 2017	"We therefore tested the hypothesis that population density would be associated with internalized, anticipated and enacted AIDS-related stigmas over and above relevant demographic characteristics, depression symptoms, and medical mistrust."	N = 696 People Living with HIV	Cross-sectional Survey	Results demonstrated that internalized AIDS stigma is associated with population density, with individuals living in small-urban and rural areas indicating greater internalized AIDS-related stigma than people living with HIV in large-urban areas.	III
Kalichman et al., 2020a	"The current study was conducted to help fill the research gap on individual-level social capital and health outcomes among people living with HIV in the US."	N = 251 People Living with HIV	Audio Computer Assisted Self-Interviews (ACASI)	Findings indicated that participants who were currently prescribed ART and those who were currently HIV virally suppressed reported larger social networks and less social capital than those who were unprescribed as well as those who were not HIV virally suppressed.	III

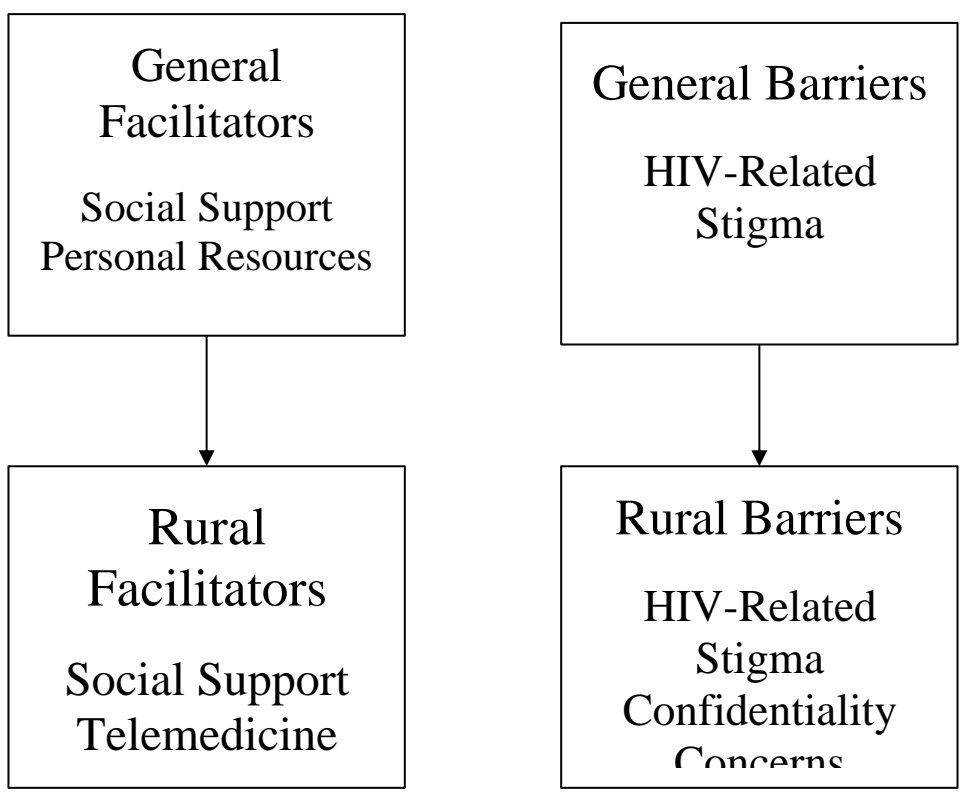
Kalichman et al., 2020b	We tested the hypothesis that the accumulation of HIV stigma experienced over a 12-month period would predict ART adherence and that the association between stigma and adherence would be explained by HIV-related stress and alcohol use."	N = 251 People Living with HIV	Audio Computer Assisted Self-Interviews (ACASI)	There is a dose-response relationship between cumulative enacted stigma experiences and ART non-adherence, as well as greater stigma experiences being related to greater HIV-related stress. Alcohol use did not contribute to the serial mediation model of the effects of stigma on ART adherence.	III
Kimmel et al., 2018	"Focusing on one structural barrier, we examined geographic accessibility to comprehensive, coordinated HIV care (HIVCCC) in the US South. "	N = 1422 Counties in Southern, USA	Geocoding	In the highest prevalence quintile, drive time to care from rural counties greatly exceeds that of urban counties. Drive time is longer from counties in the top prevalence quintile for non-Hispanic Blacks and for Hispanics compared to those for non-Hispanic Whites.	III
Lawal et al., 2021	"The objective of this study was to compare the effectiveness of HIV care delivered through TM with the F2F model."	N = 385 Participants	Retrospective Chart Review	The mean CD4 count was statistically higher in the telemedicine group. The changes in VL and viral suppression rates were not statistically different in the study groups.	III

Matthews et al., 2020	"The objective of this study is to identify community-based strategies to increase testing among African Americans in both urban and rural areas."	N = 52 Participants	Focus Group Discussions	<p>Barriers: Fear of confidentiality breaches, discriminatory treatment by healthcare professionals, lack of consistent community presence by HIV test providers, stigmatization from religious leaders, lack of information about post-test options, and fear of improper use of HIVST kits.</p> <p>Facilitators for HIV Testing: Promote testing at community based sites, partner with organizations, and enlisting popular opinion leaders to encourage HIV testing</p>	III
Pope et al., 2022	"...this study aims to 1) describe perceived transportation barriers and contributors to these barriers in a sample of middle-aged and older PWH in the Deep South, and 2) assess the association between perceived transportation barriers and contributors with health outcomes (CD4+T cell count, viral load, medication adherence, and depressive symptomatology) and HRQOL."	N = 261 Middle-aged and Older (40+ years) People Living with HIV	Questionnaires	Greater perceived transportation barriers were associated with lower scores of general health perceptions, pain, social functioning, health distress, and health transitions. It is also associated with indicators for HIV care retention and both objective and self-reported health outcomes, including medication adherence, depressive symptoms, and viral load.	III

Reif et al., 2019	"This study examined the prevalence of different forms of stigma and the association of stigma with medication and medical visit adherence in the Deep South"	N = 201 Individual living with HIV	Cross-sectional Design	Higher levels of internalized stigma was significantly associated with having missed any HIV medical appointments in the last 6 months and having poorer HIV medication adherence.	III
Ward et al., 2021	"This study explored provider perceptions of barriers to care for WWH, along with their ideas for solutions that would improve access to and retention in HIV care for WWH."	N = 20 Participants	Semi-structured Interviews	Barriers: Lack of disclosure about HIV status, fear of accidental disclosure, and HIV stigma Suggestions to address Barriers: Advanced training in staff to reduce bias, increased availability of peer navigators, foster strategies that support women and individualized services that are responsive to their lived experiences and needs.	III

Appendix B

General and Rural Facilitators and Barriers



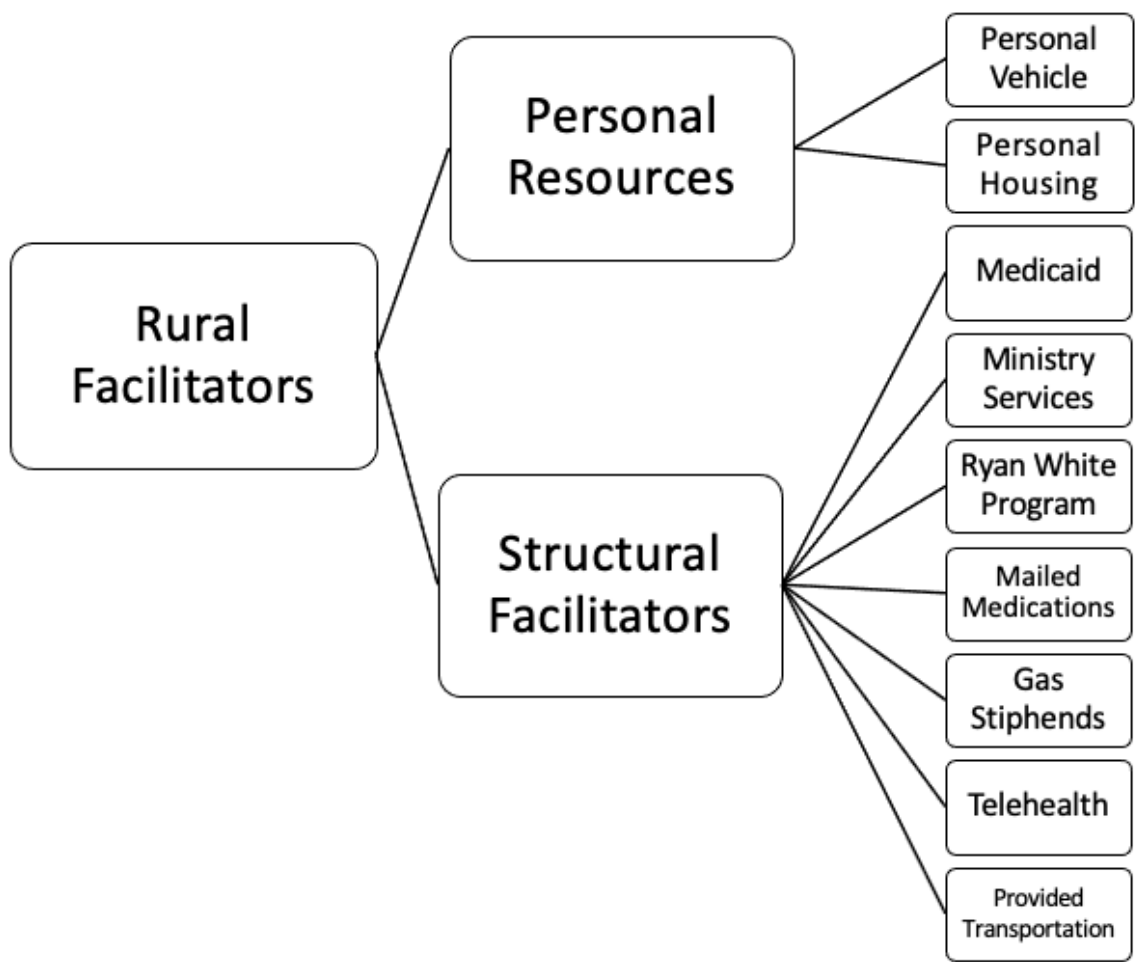
Appendix C

Table 1. Demographic characteristics of participants living in rural areas (N=10)

<i>Variable</i>	<i>N</i>	<i>Percent</i>
Age		
Mean	53	
<40	1	10
40-50	2	20
>50	7	70
Race		
Black	8	80
White	2	20
Latina/Hispanic	0	0
Sex assigned at birth		
Female	10	100
Male	0	0
Gender Identity		
Woman	10	100
Man	0	0
Years Living with HIV		
< 10 years	0	0
> 10 years	4	40
> 20 years	6	60
Socioeconomic Status		
Above FPL	6	60
Below FPL	4	40
Geographic Location *by zip		
Non-rural	0	0
Rural	10	100
Level of Education		
Less than high school	0	0
Finished high school or GED equivalent	6	60
Some college	2	20
Technical, vocational, or community college	0	0
College degree or above	2	29
Health Insurance		
Insured	9	90
Uninsured	1	10
Employment Status		
Employed full or part-time	2	20
Unemployed	8	80

Appendix D

Rural facilitators to HIV care engagement and ART adherence



Appendix E

Rural barriers to HIV care engagement and ART adherence

