

## EXPLORING THE PRE-EXPOSURE PROPHYLAXIS (PREP) HEALTH CARE EXPERIENCES AMONG MEN WHO HAVE SEX WITH MEN (MSM) WHO LIVE IN RURAL AREAS OF THE MIDWEST

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Most pre-exposure prophylaxis (PrEP) research samples men who have sex with men (MSM) who live in metropolitan cities. There is a limited understanding of the PrEP experiences among rural MSM. Thirty-four semi-structured interviews were conducted to explore the PrEP health care experiences among 34 rural Midwestern MSM. Of the 34 participants, 23 obtained PrEP from their non-primary care provider (PCP). Three themes were present: (1) PrEP is unavailable in rural areas, (2) PrEP is inaccessible in rural areas due to PCPs being unwilling to prescribe PrEP, and (3) PrEP services are unamicable in rural areas due to stigmatizing attitudes and behaviors of PCPs. It is important to address PrEP care continuum factors in all settings; however, these factors are often exacerbated in rural areas due to social determinants. Without further research and programming, organizational and social determinants may contribute to lower rates of PrEP outcomes in rural areas.

*Keywords:* PrEP, MSM, rural, Midwest, health care, qualitative

The human immunodeficiency virus (HIV) remains an important public health concern in the United States (U.S.; Centers for Disease Control and Prevention [CDC], 2015). Gay, bisexual, and other men who have sex with men (MSM) experience

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This study was funded by a grant from the Center for Sexual Health Promotion at Indiana University. We thank our transcribers: Megan Hess, Kody Sexton, and Eva Voorheis. We are appreciative to our recruitment contacts who shared the study, as well as to our participants who participated in the study.

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disproportionately high rates of HIV, representing 70% of new HIV cases (CDC, 2019b). National U.S. public health organizations recommend health care providers prescribe pre-exposure prophylaxis (PrEP) to patients who meet the clinical guidelines of being at risk for HIV infection (CDC, 2018; Owens et al., 2019). PrEP has been shown to be effective in reducing HIV acquisition among MSM living in the U.S. (Grant et al., 2010, 2014; Hosek et al., 2013; Liu et al., 2016; McCormack et al., 2016; Molina et al., 2015; Volk et al., 2015), as well as a cost-effective HIV intervention (Chen & Dowdy, 2014; Desai et al., 2008; Juusola, Brandeau, Owens, & Bendavid, 2012; Koppenhaver, Sorensen, Farnham, & Sansom, 2011; Paltiel et al., 2009). Although PrEP has been proven in clinical trials to be a highly efficacious and cost-effective intervention to prevent HIV, PrEP's efficacy is dependent upon PrEP-candidates accessing it.

Research has shown PrEP uptake is low. The CDC estimates that 492,000 sexually active MSM are eligible for PrEP; however, fewer than 60,000 of males were prescribed PrEP in the second quarter of 2017 (Siegler, Mouhanna et al., 2018; Smith et al., 2015). Similarly in two probability-based cohort studies of MSM (Dodge et al., 2019; Hammack, Meyer, Krueger, Lightfoot, & Frost, 2018), it can be estimated that 4–7% of MSM use PrEP. There are limitations with current PrEP research. First, samples are from MSM who live in metropolitan cities, excluding the experiences of MSM living in rural areas. Only one study explored the PrEP experiences among rural MSM (Hubach et al., 2017). Second, few studies exclusively focus on the PrEP health care experiences of MSM, while most focus on hypothetical use or on the early stages of the PrEP care continuum such as awareness or uptake. For example, in Hubach et al. (2017), only 3 of their 20 participants were prescribed PrEP. There is a gap in the literature on the actual and hypothetical PrEP care continuum determinants and experiences among rural MSM. Research has shown rural lesbian, gay, bisexual, transgender, queer, and other sexual and gender minorities (LGBTQ+) groups face poorer health outcomes compared to their urban counterparts (Farmer, Blosnich, Jabson, & Matthews, 2016; Fisher, Irwin, & Coleman, 2014; Rosenkrantz, Black, Abreu, Aleshire, & Fallin-Bennett, 2017; Woodell, 2018). One explanation of this is because rural areas often lack LGBTQ+ health care and HIV health care infrastructure compared to urban areas (Pellowski, 2013; Reif, Golin, & Smith, 2005; Rosenkrantz et al., 2017; Schafer et al., 2017; Woodell, 2018). Given this gap of HIV infrastructure in rural areas, research is needed to understand the PrEP care continuum in rural areas. To our knowledge, there are no studies that have explored the health care experiences of rural MSM who are currently prescribed and taking PrEP. Given this gap, the purpose of this qualitative study was to explore the PrEP health care experiences among MSM who live in rural counties of the Midwest.

## METHODS

### RECRUITMENT

Between June 2018 and January 2019, 34 MSM residing in rural counties in the Midwest were interviewed about their PrEP health care experiences. Recruitment efforts were multifaceted (purposive, venue-based, online-based, and snowball sampling) in order to reach and maximize the sample size. Flyers were mailed and emailed to health care providers and health organizations who provided PrEP, LGBTQ+ health services, or HIV prevention services. Flyers were mailed and emailed to physical and online venues that serve LGBTQ+ communities such as culture centers,

TABLE 1. Interview Guide

Where do you get PrEP?
a. Where is this in relation to where you live?
b. Have you always received PrEP here?
c. Is this person your PCP? What were your interactions with your PCP like when you asked them for PrEP?
Walk me through the conversation your provider and you had about PrEP.
a. Who initiated the conversation? What was said?
b. Did your provider have concerns about PrEP?
c. Did you have concerns about PrEP? Did you voice any of your concerns to your provider? What did the provider say?
Walk me through the conversation your provider and you had about sexual health.
a. Are you able to talk to your providers about having sex with men?
b. Have you ever done this? What was that experience like?
c. Is there anything that might make it easier for you to discuss sexuality with a provider? What would make it easier for you to discuss your sexuality with a provider?
What did your provider say about taking PrEP on a daily basis?
a. What did they say?
b. Does your provider ask you how often you take PrEP? What's that conversation like?
c. What can improve? How would you like that support to look?
What are your 3-month testing experiences like?
a. Where do you go? Same place as PrEP provider? Same place as PCP?
b. What are the staff like? Negative experiences?
c. What do these staff do well? How do they compare to other places where you received HIV testing?
Where do you get your PrEP? A pharmacy, mail order, etc.?
a. If mail order, online, etc.—What made you decide to get it online, mail, etc., rather than from a pharmacy?
b. What are your interactions with the pharmacist about PrEP like?
Have you ever had to use emergency or urgent care since you've been on PrEP? Have you ever had to tell another provider you're on PrEP (emergency care, urgent care, etc.)?
a. Who initiated the conversation?
b. What was said?
c. What were their reactions like?
How can your PrEP health care improve?
a. How would you like that support to look?
b. How would you like those interactions to go?

bars, and online social media groups. Participants that were interviewed were asked to share the study with their social networks.

### DATA COLLECTION

Interested participants completed a brief online questionnaire to assess their consent, eligibility, and demographics. Inclusion criteria for this study were: participants identifying as a man who has sex with men, were 18 years and older, currently being prescribed PrEP, and living in a rural county in the Midwest. The Index of Relative Rurality (IRR) was used to determine the rurality of participant's self-reported county of residence. The IRR is a continuous scale that measures a county's degree of rurality, and this score is based on population size, population density, extent of urbanized area, and distance to the nearest metropolitan area. An IRR score of 0 is the most urban, while an IRR score of 1 is the most rural. Participants were consid-

TABLE 2. Participants' Demographics ( $N = 34$ )

	<i>n</i>	%	<i>M</i>	<i>SD</i>
Gender identity				
Cisgender male	33	97		
Transgender male	1	3		
Sexual orientation identity				
Gay/homosexual	33	97		
Bisexual	1	3		
State				
Illinois	5	15		
Indiana	8	24		
Iowa	2	6		
Kansas	1	3		
Michigan	1	3		
Minnesota	0	0		
Missouri	1	3		
Nebraska	1	3		
North Dakota	2	6		
Ohio	3	9		
Oklahoma	5	15		
South Dakota	2	6		
Wisconsin	3	9		
Index of Relative Rurality			0.46	0.06
Age			35.35	11.07
Race/ethnicity				
Hispanic or Latino	2	6		
White	32	94		

ered rural if they lived in a county with an IRR of 0.40 or above, as .40 and above is considered rural or nonmetropolitan by the scale developers (Waldorf, 2006; Waldorf & Kim, 2015). The IRR and the IRR of 0.40 and above have been used in previous rural MSM health research (Currin et al., 2018; Giano et al., 2019; Hubach et al., 2017; Hubach, Dodge, Cola, Battani, & Reece, 2014; Hubach, Dodge, Li et al., 2015; Hubach, Dodge, Schick et al., 2015; Li, Hubach, & Dodge, 2015). In our study, “Midwest” included states located in the Midwest region according the U. S. Census Bureau (2019). Oklahoma was additionally included given it has a similar cultural context with surrounding Midwestern states and has often been classified as either in the Midwest or in the South (Brownell, 1960; Hickey, 2014; Shortridge, 1987). The Indiana University institutional review board approved the study’s protocols.

If a participant met the eligibility criteria and volunteered to participate in the study, a one-hour telephone interview was scheduled. All participants who completed the telephone interview were emailed a \$20 Amazon ecard for their participation in the study. A semi-structured interview guide was developed to elicit participants’ PrEP health care experiences (see Table 1). These interactions could be with their provider who prescribes PrEP, testing staff, pharmacists, or other health care provid-

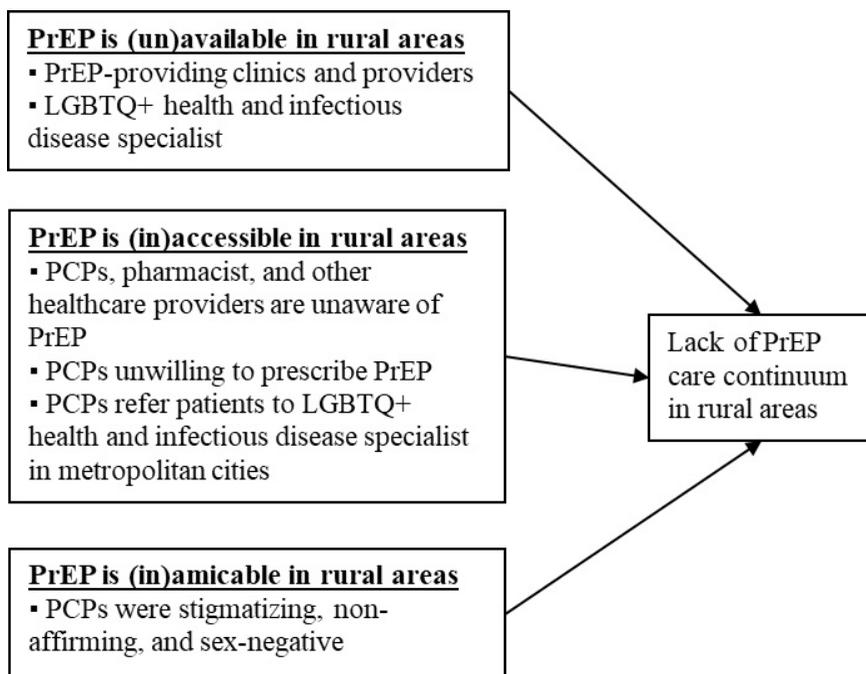


FIGURE 1. Conceptual framework.

ers (e.g., emergency department providers). Telephone interviews were recorded via Audacity (version 2.2.2), a free, open-source audio recorder and editor (Audacity Team, 2018).

### DATA ANALYSIS

Interviews were transcribed verbatim via the listen-and-type method and double-checked for accuracy against the recordings. Researchers coded transcripts within Dedoose (version 8.1.8), a cloud-based computer-assisted qualitative data analysis program that provides real-time collaboration, cloud-support, coding functions, and mixed-method analytical functions (SocioCultural Research Consultants, 2018). Inductive analysis was informed by a modified Straussian grounded theory approach: reading transcripts and memos multiple times, coding in phases (open coding, axial coding, and selective coding), writing memos, creating a diagram to visually show a theory/conceptual model of PrEP health care, and positioning analysis in context: paradigms, conditions, actions-interactions, and consequences (Corbin & Strauss, 2008). Not all Straussian Grounded Theory principles were employed, such as theoretical sampling. Coding was completed by three co-authors independently and consistency checks were done to assess reliability among codes. It was determined via meetings and examinations of the coded transcripts that there was high consistency among codes. Demographic characteristics were analyzed using version 24 of the Statistical Package for the Social Sciences (IBM Corp, 2016).

## RESULTS

### DEMOGRAPHIC CHARACTERISTICS

A total of 34 participants were interviewed. As shown in Table 2, the majority of participants self-reported as cisgender gay or homosexual men (97%). Approximately one-fifth of participants lived in Indiana (24%). IRR scores ranged from 0.40 to 0.62 ( $M = 0.46$ ,  $SD = 0.06$ ). Participants' ages ranged from 21 to 62 years old ( $M = 35.35$ ,  $SD = 11.07$ ).

### QUALITATIVE DATA

Three main themes were created from our exploration of the data: (1) (un)availability of PrEP in rural areas, (2) (in)accessibility of PrEP in rural areas, and (3) (un)amicability of PrEP in rural areas. These themes are seen in Figure 1. These themes impact the PrEP care continuum, from getting a prescription to attending follow-up appointments for 3-month testing. As Figure 1 notes, (un)availability regards the lack of PrEP health care infrastructure such as PrEP-providing clinics and specialty clinics that may have a role in PrEP rollout, such as LGBTQ+ health or infectious disease specialists. Overall, there were no PrEP-providing, LGBTQ+ health, or infectious disease clinics in their local or surrounding counties. (In)accessibility regards primary care providers' (PCPs') PrEP knowledge and prescription behavior. Overall, participants' local PCPs were unaware of PrEP, were unwilling to prescribe it, and referred participants to specialty clinics located in metropolitan cities. (Un)amicability regards the quality of care, such as LGBTQ+-affirmative care, sex-positive attitudes, and other inclusive practices. Overall, participants found their local PCPs had negative reactions to them requesting PrEP. These themes are explained in depth below.

*(Un)Availability of PrEP in Rural Areas.* Participants described their communities were lacking the PrEP infrastructure needed to go through the PrEP care continuum, from PrEP-providing clinics and providers to HIV testing sites needed for 3-month testing. Since PrEP infrastructure was either nonexistent to limited, participants had to engage with the PrEP care continuum in other spaces—mostly being in metropolitan cities. Many participants initially used PrEP location-related websites once they decided they wanted PrEP; however, many participants lived in a PrEP desert where there were no PrEP-providing clinics or providers. Participant 20 (Wisconsin, 18–24 years old) shared this experience:

Because [my town] is such a small city, we don't have a gay men's clinic. So, it's difficult—it took me several months to get a doctor who would prescribe PrEP. I googled "doctors who prescribe PrEP in [my town], Wisconsin," and the nearest result was in Green Bay, which is a half an hour car ride, like 30 miles away.

Some participants wanted to obtain PrEP from specialty clinics or specialists, such as LGBTQ+ health clinics or infectious disease clinics. However, just as it was for PrEP-providing clinics, these specialty clinics and providers were not located in their local communities. The closest and often the only place where PrEP-providing and specialty clinics were located in metropolitan cities that were distant from participants' residence. Participant 25 (Iowa, 25–34 years old) expressed, "I travel one hour to Iowa City to a specialty care clinic to get PrEP. It's about an hour away for any specialist." It was common for participants to travel more than 30 minutes to receive PrEP or engage in other PrEP care continuum services (e.g., HIV testing, STI testing). Participants drove from "30–35 minutes" (Participant 5, Illinois, 18–24

years old) to “two and a half hours” (Participant 12, Illinois, 55–64 years old) to utilize PrEP care continuum services.

A consequence of rural areas lacking PrEP infrastructure is the exacerbation of rural people’s resources when engaging in the PrEP care continuum. For example, participants noted if their town did have public transportation, their public transit system did not extend to these metropolitan cities that are many hours and miles away. All of these participants were left with no choice but to drive, meaning they would add mileage to their vehicles, increase their gas costs, and take time off to have their PrEP consultation. The rural PrEP care continuum is limited if PrEP is not available in rural areas. Because of this unavailability of PrEP-providing clinics and providers in their local communities, participants asked their local PCP for PrEP. However, PrEP’s accessibility in their local primary health care system was often a barrier.

*(In)Accessibility of PrEP in Rural Areas.* Participants first interactions with PrEP health care was not with their providers at PrEP-providing clinics, LGBTQ+ clinics, or infectious disease clinics; it was with their local PCPs. Participants read about PrEP-related websites, where these sites encouraged people interested in PrEP to talk to their PCPs. In addition to PrEP-providing and specialty clinics being unavailable in their local communities, their PCP was often their only place to access PrEP in their communities. However, most participants recounted difficulties accessing PrEP from their local health care system.

The first difficulty was the rural health care system is overall unknowledgeable about PrEP. When participants told their PCP they were interested in PrEP, their PCPs were often not aware of PrEP, the testing required pre-prescription, and the testing recommended post-prescription. Participant 26 (Indiana, 45–54 years old) shared, “I told my doctor I wanted to get on PrEP, and my family doctor had no idea what it was. A lot of docs out here don’t know what this is. They’re not up-to-date.” Participants often had to educate their local PCPs about the basics and effectiveness of PrEP because their PCP was unwilling to search for the information on their own. In addition to their PCP being unaware of PrEP and educating PCPs about PrEP, participants described other providers being unaware of PrEP, such as pharmacists and urgent care providers. Participants explained their local pharmacists were uninformed about PrEP and mistook it for an HIV antiretroviral therapy (ART). Participant 33 (Ohio, 35–34 years old) referenced this experience, as his pharmacist “pulled me aside and asked questions like, ‘Are you HIV-positive?’ or ‘Since you’re HIV-positive, do you have any questions about this medication?’ I’m always like, ‘No, I’m not.’” Participants had similar experiences with providers who are not in the PrEP health care system but do interact with them and need to know about PrEP (e.g., drug interaction). Participant 12 (Illinois, 55–64 years old) shared an experience he had with an urgent care provider, “I told the urgent care doctor I was on PrEP, and he asked me if I was HIV-positive. I thought, ‘You got to be kidding me. You’re a doctor in urgent care, and you don’t know about sexual health.’” This lack of knowledge impacted participants’ experiences accessing PrEP.

The second difficulty was their local PCPs were unwilling to prescribe PrEP. Of the 34 participants, 11 obtained PrEP from their local PCPs while 23 of them obtained PrEP from another provider than their original PCP. Regardless of whether one of the 23 participants educated their PCP about PrEP, their PCP continued to be unwilling to prescribe it to them. Some participants noted their PCP referred them to another provider who would prescribe it, and this provider was often an infectious

disease specialist located in a metropolitan city. Participant 23 (Oklahoma, 45–54 years old) explained that his PCP knew his partner was living with HIV and saw an infectious disease specialist in Tulsa, Oklahoma, so the PCP suggested he asked his partner’s specialist for it:

He was like, “You can find a specialist or something, and have them prescribe it to you in Tulsa.” I told him it doesn’t take a specialist to prescribe it, and he still was like, “You’ve got doctors that you see in Tulsa; you can talk to one of them about it.” We’re about 50 miles away from Tulsa. He was adamant about not prescribing it to me.

The PCP’s decision to not prescribe PrEP impacted these participants’ experiences moving through the PrEP care continuum.

There are consequences to PCPs being unaware of PrEP and unwilling to prescribe it among the 23 participants who obtained PrEP from their non-PCP. First, the 23 men positioned PrEP as a specialty health care service rather than preventative or primary one due to their local PCPs being unaware of PrEP, unwilling to prescribe it, and referring them to infectious disease specialists in metropolitan cities. Because of this, these 23 men had two providers—one for primary care and the other for sexual health care. Participant 32 (Illinois, 25–34 years old) wished he did not have to separate PrEP care from primary health care, but he felt he needed to:

I wish it wasn’t through county health; I wish it was through my primary care. I wish I wasn’t going one place for my sexual health care and one place for my other health concerns. He knows I’m on PrEP, and I think he asked where I was getting it prescribed at, and I said county health, but there was no indication that he wanted me to transfer that. I go to the county health for all of my testing. He wanted to talk about safe sex and prophylaxis, but I felt he wasn’t going to be very sex-positive with me. I leave the sexual health out—if I can—with that doctor.

Separating PrEP from primary care caused additional burden among these 23 men to have multiple providers, travel extra miles, and have additional health care costs. Second, participants often had to engage with specialty clinics if they wanted to access PrEP, despite there being a lack of LGBTQ+ health and infectious disease clinics in their area. Participant 22 (North Dakota, 35–44 years old) expressed his frustration with his PCP recommending he obtain PrEP from an infectious disease specialist:

When you have to drive hours to see a health care provider who is providing Truvada, I think that’s a health care access issue. Primary care physicians are reluctant on wanting to prescribe it, and they’re wanting to encourage individuals to go see an infectious disease doctor, while infectious disease doctors have schedules that are months and months in advance. So, getting to see an infectious disease doctor is a barrier.

Other men preferred to access PrEP at these LGBTQ+ health and infectious disease clinics because providers and pharmacists were experts in PrEP as Participant 18 (Indiana, 25–34 years old) said, “He’s just a PCP and pharmacist who wouldn’t know the ins and outs of this drug. Why not go to experts who do understand. I can get specific questions right to them and feel more comfortable should I have an issue.” Lastly, PCPs’ unawareness of PrEP and unwillingness to prescribe it caused negative patient-provider relationships and interactions. The 23 men commonly described their PCP’s reaction to PrEP made them “feel uncomfortable because of how uncomfortable the doc was” (Participant 23, Illinois, 25–34 years old). Some felt their PCP’s reaction was “unprofessional about how they dealt with it” (Participant

2, Indiana, 18–24 years old). Participants who acquired PrEP at LGBTQ+ health or infectious disease clinics did not experience negative interactions. Though there are PCPs in rural areas, participants revealed that PrEP and the PrEP care continuum are not always accessible.

*(Un)Amicability of PrEP in Rural Areas.* Participants who had a PCP unwilling to prescribe PrEP often contributed this unwillingness to social biases, such as HIV and LGBTQ+ stigma. Participants depicted their local PCPs provided stigmatizing, nonaffirming, and sex-negative reactions to their sexuality and sexual health. This stigma was present throughout the PrEP care continuum, starting with testing to assess participants' PrEP candidacy. Participant 9 (Kansas, 45–54 years old) was more concerned with how his PCP would respond to his HIV and STI test rather than getting the test itself. He said, “It doesn't bother me to go get the blood tests. The bigger concern is facing my doctor. I'm not afraid of what the test is going say—it's gonna be negative. It's whatever drama he's going to put me through.” Participants who got PrEP from their non-PCP often compared the two different provider interactions. Participants perceived their PrEP provider was more LGBTQ+-accepting, sex-positive, and knowledgeable about PrEP than their local PCPs. Participant 13 (Wisconsin, 35–44 years old) expressed this difference:

My doctor in [my town] knows so little about PrEP that he refuses to give it to me. He's not willing to. It's really hard to find a doctor that's not super touchy about being gay and being sexually active. I've struggled to find one in my area not like that. The way I see it, it's the small-town mentality. Now my PrEP place, they're amazing people. They don't question my motive, they're not judgey or anything, they're supportive of the LGBT community, they're knowledgeable about PrEP, and they're comfortable asking me questions about my sex life.

Participants appreciated that their PrEP providers practiced holistic care, acknowledging health as multidimensional (e.g., sexual health, mental health, financial health). Participants respected their PrEP providers who asked them about financial health when it pertained to paying for PrEP. Their PrEP providers discussed the manufacturer co-pay assistance program that could assist with some of the cost of PrEP care. Participant 34 (South Dakota, 45–54 years old) noted he did not have insurance when he first obtained PrEP, and his PrEP provider told him about the co-pay assistance program, “There's this program where you can get a reduced rate if you go online and sign up for it. It was nice to know I had options because it's expensive.” Some participants had PrEP providers who asked about their mental health, as Participant 7 (Indiana, 18–24 years old) did, “They ask about mental health: how are you, how are you feeling, are you stressed or anxious? They then offered me to take some classes there if I wanted to attend. They're fantastic.”

Because many participants experienced negative interactions with their local PCP and local pharmacist about sexual health and PrEP, some of them liked the idea of mHealth or telehealth that could bypass interacting with these providers. Participant 2 (Indiana, 18–24 years old) described the reason for his stance on Nurx, a mail-based and telemedicine PrEP and contraceptive organization. He said:

My family doctor is very good, but he knows a lot of people throughout town. He's best friends with one of my employers, so it's a privacy thing. It's not like he would say things; it's just the thought of it.... The push of something like Nurx to the rural areas is good. I think there's a lot of—especially where I live—a lot of people who are closeted and would not feel comfortable going to a family doctor because everybody knows

everybody. The push of an app or something like Nurx that you can do everything privately might be very beneficial to people out in rural areas.

Although few participants mentioned concerns about disclosure and privacy, having PCPs and PrEP providers who keep their sexual health and PrEP use information confidential was essential. While PrEP may be available or accessible in the rural community, PrEP services (e.g., sexual history taking, HIV testing) were not always LGBTQ+-affirmative and sex-positive.

## DISCUSSION

This study of rural Midwestern MSM suggests rural MSM—and possibly other rural PrEP-eligible populations—have substantial barriers to accessing PrEP in rural environments. The first barrier is the lack of PrEP infrastructure in rural environments. MSM in our study described their communities as PrEP deserts, noting there were no search results of PrEP-providing clinics in their local or surrounding communities. This finding is supported by previous research on geographic locations of PrEP-providing clinics, where PrEP-providing clinics are less likely to be in rural areas and within Midwestern, Southwestern, and Southern states (Siegler, Bratcher, & Weiss, 2019; Siegler, Bratcher et al., 2018). Due to this lack of PrEP-providing clinic infrastructure, people who want to obtain PrEP at a PrEP-providing clinic must travel many miles and minutes to one of these PrEP providers. Yet, the amount of time traveling to these PrEP providers is different depending on where one lives, including metropolitan and nonmetropolitan locales. One in eight PrEP-eligible MSM live 30 minutes away from a PrEP provider (Siegler et al., 2019). Rural MSM have previously reported PrEP care continuum services (e.g., PrEP-providing clinics, HIV testing sites) are not available in their communities, and they would have to travel to specialists if they wanted to adopt PrEP (Hubach et al., 2017; Maloney et al., 2017; Sun et al., 2019). Although this lack of PrEP infrastructure and driving time is not exclusively unique to rural areas, rural areas are less likely to have PrEP-providing clinics, infectious disease, and LGBTQ+ health specialists (McKenney et al., 2018; Pellowski, 2013; Schafer et al., 2017). MSM who live in metropolitan cities may have around a 15-minute travel time to their PrEP provider, compared to MSM who live in rural areas where that time is between 30 and 60 minutes or more (Siegler et al., 2019). This lack of PrEP, HIV, and LGBTQ+ health specialty infrastructure in rural environments is concerning as a study noted 83% of MSM seeking PrEP at a St. Louis infectious disease clinic reported they were there because their PCP referred them (Patel et al., 2018). Although HIV and LGBTQ+ health specialists are more knowledgeable about PrEP and have greater intentions to prescribe it compared to PCPs (Bacon et al., 2017; Blumenthal et al., 2015; Krakower, Maloney, Grasso, Melbourne, & Mayer, 2016; Petroll et al., 2017), these specialists are less commonly located in rural areas. Rural PCPs have been referring MSM to a health care system that does not exist in rural areas, increasing the burden on MSM for driving time, additional costs, and other burdens. The Ending the HIV Epidemic Plan (CDC, 2019a) excludes physical PrEP infrastructure in their plan, with mostly focusing on PrEP education among PCPs.

Although the CDC (2018), the U. S. Preventative Services Task Force (Owens et al, 2019), and the Ending the HIV Epidemic Plan (CDC, 2019a) call for PCPs to be educated on PrEP, the participants in this study described barriers when engag-

ing in the PrEP care continuum with their local PCPs. Of the 34 participants in this study, approximately two-thirds of them (68%,  $n = 23$ ) obtained PrEP from their nonlocal PCP because there were no PrEP-providing clinics in their area, and their local PCP was unknowledgeable about PrEP, unwilling to prescribe it, and exhibited negative reactions to sex and sexuality. These findings are consistent with studies exploring uptake barriers among U.S. MSM considering PrEP or MSM already using PrEP (Hubach et al., 2017; Maloney et al., 2017; Rice et al., 2019; Sun et al., 2019). The perceived clinical care barriers in the above studies became reality for our participants. In addition to this study's participants noting PCPs are overall unaware of PrEP, have negative attitudes about it, and have low intentions to prescribe it, so too does provider-based PrEP literature (Blackstock et al., 2017; Blumenthal et al., 2015; Petroll et al., 2017; Smith, Mendoza, Stryker, & Rose, 2016; Walsh & Petroll, 2017; Wood et al., 2018). Although there are no studies sampling rural MSM who discontinue PrEP, a study reported the top reasons for discontinuing PrEP were lowered HIV risk perception and cost (Whitfield, John, Rendina, Grov, & Parsons, 2018). Our participants continued using PrEP; however, their barriers were more focused on clinical care factors (e.g., PCP behavior, quality of care, driving to other clinics) rather than individual factors (e.g., risk perception). Reasons for discontinuing PrEP among rural populations may have more to do with clinical care factors than a change in risk perception.

The PrEP care continuum (Kelley et al., 2015; Liu et al., 2012; Nunn et al., 2017) often conceptualizes PrEP access in the form of financial accessibility and physical availability; however, access can be conceptualized as a multi-dimensional construct that focuses on other forms of access such as accommodation (Levesque, Harris, & Russell, 2013). Rural Midwestern MSM in this study valued the multi-dimensional forms of PrEP access, and they experienced inaccessibility in multiple forms from unavailability of PrEP to unaccommodating reactions from PCPs, pharmacists, and other providers. Mobile health (mhealth) and telehealth innovations have been assessed to increase the PrEP care continuum (Touger & Wood, 2019), these innovations are being implemented in coastal cities and states excluding rural people's involvement in PrEP telehealth. Although the rural Midwestern MSM in our study faced clinical care barriers accessing PrEP, only two of them engage in the PrEP care continuum via telemedicine (both being Nurx). Participants in our study seemed to prefer physical PrEP infrastructure rather than online PrEP infrastructure, even traveling many miles and hours for it. Participants wanted PCPs who were knowledgeable about PrEP and LGBTQ+ and sex-affirmative.

Research has noted the "purview paradox" whereby specialists situate PrEP within PCPs' clinical purview, while PCPs locate PrEP to be within specialists' clinical domain (Hoffman et al., 2016; Krakower, Ware, Mitty, Maloney, & Mayer, 2014; Pinto, Berringer, Melendez, & Mmeje, 2018; Silapaswan, Krakower, & Mayer, 2017). Our participants experienced this when their local PCPs were unwilling to prescribe them PrEP and referred them to PrEP providers, LGBTQ+ health providers, and infectious disease providers that were in metropolitan cities. Our participants constructed a similar distinction that PrEP and sexual health in general are "specialty care" rather than "preventative or primary care." This separation added financial and time burdens for our sample who have a "primary care provider for general health" and a "sexual health care provider for sexual health." Although educating PCPs about PrEP may increase their awareness of PrEP, educational interventions alone may not be sufficient to increase PrEP prescribing behaviors among PCPs. Petroll et al. (2017) found 96% of PCPs who never prescribed PrEP but who had ap-

propriate PrEP knowledge would still refer PrEP-eligible patients to other providers. Although previous studies have shown some MSM feel having a sex-positive PCP is necessary to disclose their PrEP interest and sexual behaviors (Hubach et al., 2017; Maloney et al., 2017; Sun et al., 2019), some PCPs feel uncomfortable discussing sexual behaviors with PrEP-eligible patients (Blumenthal et al., 2015; Petroll et al., 2017; Wood et al., 2018). PrEP implementation interventions for PCPs should focus more on inclusive sexual history taking and LGBTQ+ cultural competency care, in addition to increasing PrEP knowledge.

This study is not without limitations. First our study cannot be generalized to other communities. Although our MSM lived in rural counties within Midwestern states, our results are not representative of all rural Midwestern MSM. In addition, 11 MSM obtained PrEP from their local PCP, indicating they experienced less rural PrEP access issues than the 23 MSM who obtained PrEP from their nonlocal PCP. However, this underscores the crucial role PCPs have in the rural PrEP care continuum. More research is needed to examine the PrEP care continuum in rural areas, specifically from the perspectives of rural MSM and rural PCPs. In addition, we cannot assume our results are representative of the larger population of rural MSM within the U.S. Future research is needed to explore the PrEP experiences of rural MSM who live in similar contexts such as Appalachia, the Southwest, and the South. Second, our sample size ( $N = 34$ ) and homogeneity of the sample (White, cisgender gay/homosexual men who are employed, have employer-based insurance, and live in an IRR of 0.40–0.45) excluded the possibility of observing thematic differences. Further research is needed to explore PrEP experiences among a more diverse sample of sexual minorities (bisexual), gender minorities (transgender), and racial minorities. Despite these limitations, this is the only study to exist (so far) that offers a glimpse into the PrEP health care experiences of rural Midwestern MSM who are currently on PrEP.

## CONCLUSION

Rural Midwestern MSM in this study experienced barriers to engaging in the PrEP care continuum. These barriers include PrEP's unavailability in rural areas, PrEP's inaccessibility in rural areas due to PCPs' lack of knowledge and unwillingness to prescribe PrEP, and the in-amicability of PrEP services due to stigma. Assessing quality LGBTQ+ and sex-affirmative care can help mitigate these barriers; however, these solutions are within the purview of PCPs and the health care system to implement PrEP within their practices.

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