Neighborhood Poverty: An Intersectional Structural Determinant of PrEP Uptake among Black Heterosexual Cisgender Women

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Dedication

My dearest friends Stephanie Bailey and Narine Esmaeili were constant sources of social support, and I would not have made it through without having them to lean on. To my brilliant late grandfather, Dr. Houshang Nahavandi— it is in your footsteps I follow. Thank you to my sister and niece, Parisa Malekzadeh and Sienna Majure, who sent care packages and were always there to listen, giggle, and encourage from afar. Most importantly, to my parents, Dr. Afsaneh Nahavandi and Dr. Alireza Malekzadeh, who have given me unconditional love, indispensable advice, and everything I could have ever needed to succeed— this dissertation is dedicated to you.

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Abstract of Dissertation

Neighborhood Poverty: An Intersectional Structural Determinant of PrEP Uptake among Black Heterosexual Cisgender Women

Black heterosexual cisgender women (BHCW) are at high HIV risk but have low uptake rates of pre-exposure prophylaxis (PrEP). The HIV epidemic is particularly alarming among BHCW living in the D.C.-Maryland-Virginia (DMV) metropolitan area. Existing empirical research demonstrates causal links between individual-level psychosocial determinants and HIV prevention behaviors; yet little is known about how intersectional structural determinants affect PrEP uptake for BHCW. Structural intersectionality is a theoretical framework that can shed light on how multiple and interlocking structural determinants (i.e., racism, classism, and sexism) influence PrEP uptake among BHCW. Integrating theories and methodologies from social psychology, sociology, and public health, I conducted a secondary data analysis guided by structural intersectionality. Using structural equation modeling, I evaluated the direct effects of an intersectional structural determinant (neighborhood poverty) across 39 DMV zip codes on BHCW's (N = 240; M = 30.73 years; SD = 8.9 years) PrEP uptake interest and assessed the mediating effects of associated psychosocial (perceived HIV risk, anticipated PrEP stigma) pathways. Results indicated that participants' PrEP uptake interest was not significantly predicted by neighborhood poverty, perceived HIV risk, nor anticipated PrEP stigma. Higher neighborhood poverty did predict lower perceived HIV risk but did not predict anticipated PrEP stigma. The hypothesized indirect effects of neighborhood poverty on PrEP uptake interest through perceived HIV risk and anticipated PrEP stigma were not supported. Age was negatively associated with BHCW's PrEP uptake. This

dissertation provides empirical evidence about the influence of neighborhood poverty on PrEP uptake for BHCW, a population at high HIV risk, within the DMV, an area with high HIV incidence. Results highlight the importance of transcending exclusively individual-level psychosocial determinants and using multilevel, multidisciplinary, and intersectional approaches to increase PrEP uptake among BHCW.

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Author Positionality and Epistemic Stance

This dissertation is informed by Quantitative Critical Race Theory (QuantCrit), an approach that applies the principles from Critical Race Theory (Bell, 1993; Crenshaw et al., 1995) to understand statistical analyses (Castillo & Gillborn, 2023). QuantCrit emphasizes the centrality of racism; that numbers are not neutral and social categories not natural; that all data is socially constructed; and that all work must be oriented toward advancing social justice and equity (Gillborn et al., 2018). Although my quantitative methodology is grounded in a positivist paradigm (Lincoln & Guba, 1985), quantitative data are social constructs (Carpentier, 2008), and I reject the notions that numbers and truth are objective and that my biases as a researcher do not shape my findings and interpretations. Thus, I share my positionality and epistemic stance to be transparent about how my background, views, and experiences may influence my work.

I am a cisgender (she/her pronouns), bisexual, upper class, highly educated, able-boded Persian American woman who is the child of immigrants to the United States. I am trained as an applied social psychologist, identify as a critical social psychologist, and am committed to intersectional feminism and health equity research. My epistemological stance as a researcher is aligned with the social constructivist paradigm (Carter & Little, 2007) and critical transformative frameworks (Creswell & Poth, 2018). As a social constructivist, my ontological position is that realities are subjective, and that knowledge is contextually situated and can change based on different individuals, places, and time (Carter & Little, 2007). My axiological position is that my own values and experiences shape how I interpret participant data (Carter & Little, 2007; Finlay, 2002). As a critical transformative researcher, I commit to using my platform as an investigator to challenge

structural inequities and highlight the needs of disadvantaged groups to improve society (Creswell & Poth, 2018). As a critical intersectional feminist, I seek to conduct research that centers intersectionality (Collins, 1991; Combahee River Collective, 1977; Crenshaw, 1991) and women's perspectives in a manner that is transformative and attends to the influence of power structures in people's lives (Creswell & Poth, 2018), an effort that is of particular importance when studying historically oppressed groups such as Black heterosexual cisgender women, this dissertation's population of focus.

Chapter 1: Introduction

Black heterosexual cisgender women (BHCW) in the U.S. are disproportionately affected by the HIV epidemic (AIDSVu, 2018; Centers for Disease Control and Prevention, 2022; Grablick, 2023). The epidemic is particularly alarming among BHCW living in Washington, D.C. (CDC, 2022; U.S. Department of Health and Human Services, 2024a). In 2021, eight out of ten new HIV diagnoses among women in D.C. were Black (Grablick 2023), and in 2020 the rate of BHCW living with HIV in D.C. was 35.4 times higher than that of White women (AIDSVu, 2021). For BHCW in D.C., heterosexual exposure is the primary method of HIV transmission (AIDSVu, 2021).

Nationwide between 2018 and 2022, there was a 25% decline in HIV-related deaths and a 12% decline in new HIV infections (CDC, 2024). These improvements were due largely to increased access to pre-exposure prophylaxis (PrEP) prescriptions and HIV testing, demonstrating the importance of preventive care access and early intervention (CDC, 2024). Such access was made possible under the Affordable Care Act (ACA), which mandated health insurers to cover preventive services such as HIV testing for everyone and PrEP for those at increased risk of HIV exposure through sex or drug use (HHS, 2025a). Medicaid access is critical to PrEP uptake as it reduces out-of-pocket costs for medications and medical visits (Sullivan et al., 2019). In 2023, U.S. states that adopted Medicaid expansion had a 1.3 times higher PrEP uptake rate than states that did not (AIDSVu, 2024). Structural interventions in laws or policies that facilitate individual access to HIV prevention tools are thus essential precursors to ending the HIV epidemic in the U.S.

PrEP is a highly effective medication that reduces the risk of HIV infection from sex by 99% (CDC, 2022). PrEP can be taken as a daily oral pill or injected by a healthcare provider (HCP) every two or six months (HHS, 2025b; U.S. Food and Drug Administration, 2021). PrEP is widely available in D.C. with a prescription through government programs for insured and uninsured residents who are at high HIV risk (DC Health, 2023; HHS, 2023). Over $1.4 million in philanthropic funds have been allocated to D.C. for PrEP-related work such as HCP training, research, advocacy, awareness campaigns, and service provisions (AIDSVu, 2021). Yet only 10% of women in the U.S. who could benefit from PrEP were prescribed it in 2019 (CDC, 2021), and BHCW are the least likely to utilize PrEP compared to other groups (AIDSVu, 2018; Centers for Disease Control and Prevention, 2022; Grablick, 2023). In a quantitative study conducted in D.C. with majority BHCW, most participants were previously unaware of PrEP, few intended to initiate PrEP in the future, and their perceived risk of HIV acquisition was low (Scott et al., 2022; Scott et al., 2023). More empirical research is needed to understand the gaps in PrEP uptake among BHCW in the D.C.-Maryland-Virginia (DMV) metropolitan area to help reduce their HIV incidence.

Much of the empirical research on HIV prevention among BHCW attends almost exclusively to individual and interpersonal determinants of HIV risk, such as how lack of PrEP awareness (Auerbach et al., 2015), low perceived HIV risk (Flash et al., 2017), anticipated PrEP stigma (Calabrese et al., 2018), HCP biases (Hull et al., 2021), distrust of the medical system (Auerbach et al., 2015), and concerns about side effects (Auerbach et al., 2015; Hill et al., 2021) pose barriers to their ability to engage in HIV prevention strategies such as PrEP uptake. Although these psychosocial factors are critical

determinants of HIV prevention for BHCW, they are insufficient for explaining *why* barriers to PrEP uptake exist for BHCW in the first place. Thus, these determinants must also be examined in conjunction with broader structural determinants of health, or the rules and power relations embedded in social structures and institutions that perpetuate systems of advantage and disadvantage (Heller et al., 2024). Structural approaches go beyond individual behaviors to examine the context in which those behaviors occur (Blankenship et al., 2000; Blankenship et al., 2006) and shift the onus to the power sources that produce social inequities and exclude oppressed groups (Bowleg, 2022; Krieger, 2014). In the U.S., this context is driven by structural racism, classism, and sexism, multiple and interlocking oppressions that intersect to shape systems of disadvantage for individuals such as racialized women who are disproportionately poor. BHCW's inequitable access to information about PrEP or to the medication itself, for example, are functions of intersectional structural oppressions that hinder BHCW's PrEP uptake (Blackstock et al., 2015; Blackstock, 2021; Knight et al., 2022). Experts argue that going beyond the individual-level and examining influential structural-level factors such as neighborhood context is essential for understanding HIV prevention behaviors (Brawner et al., 2022) because empirical data demonstrates that, like individual risk behavior, living in an area with high HIV prevalence can increase one's risk of being exposed to HIV (Brawner, 2014).

In this dissertation, I demonstrate how, because of intersectional structural oppressions (specifically racism, classism, and sexism), BHCW are more likely to live in neighborhoods with fewer socioeconomic resources, which in turn amplifies their HIV risk (Adimora et al., 2006; Latkin et al., 2013; Hill et al., 2021). Neighborhood

disadvantage is often evaluated by measures of poverty such as percentage of households with low income, low educational attainment, or high unemployment (Riley, 2017; Yen & Syme, 1999). In a systematic review of 55 qualitative and quantitative studies, neighborhood disadvantage was identified as a critical determinant of HIV risk; yet the authors found a paucity of studies that examine its effects on HIV prevention outcomes such as PrEP uptake for any population (Brawner et al., 2022). Though empirical investigation has identified neighborhood poverty as a contributing structural determinant to decreased PrEP uptake among Black men who have sex with men (MSM; Burns et al., 2021), that and other structural determinants of HIV prevention are understudied among BHCW.

Examining the effects of neighborhood disadvantage is particularly important in the DMV where there are large inequities between neighborhoods that intersect with other social-structural determinants of health. Across D.C. zip codes for example, median household income ranges vastly from $35,268 (lowest) to $209,719 (highest; DC Health Matters, 2024). D.C. has one of the largest Black populations of U.S. metropolitan areas (Moslimani et al., 2024) with 41% of its residents identifying as Black or African American (Korhonen, 2024). Yet the median household income of Black households is $54,203 compared to $158,954 for White households (DC Health Matters, 2024).

Across D.C., 11.86% of families live below the poverty line, but there are significant differences between predominantly Black neighborhoods in Wards 7 and 8 where 90.32% and 88.98% of residents are Black, respectively, and predominately White neighborhoods in Wards 2 and 3 where 66.57% and 75.2% of residents are White, respectively (DC Health Matters, 2024). Wards 7 and 8 each have 23.85% of families

living below poverty line, compared to only 2.44% and 5.67% of families living below the poverty line in Wards 3 and Ward 2, respectively (DC Health Matters, 2024). Wards 7 and 8 also have unemployment rates of 15.4% and 20.1%, compared to 4.2% in both Wards 2 and 3 (HHS, 2025c). In Wards 2 and 3, less than 10% of households are headed by a single female (an indicator of poverty and health risk) compared to 71% and 65% of households in Wards 7 and 8 (HHS, 2025c). Neighborhoods are key to understanding health inequities, and altering the course of the HIV epidemic will require attending to neighborhood level structural inequities that heighten HIV risk (Bowleg et al., 2014; Brawner et al., 2022).

There are several social psychological theoretical models of behavior that attempt to understand HIV prevention behaviors such as PrEP uptake, including the Health Belief Model (HBM; Hochbaum et al., 1952; Rosenstock et al., 1988), Social Cognitive Theory (SCT; Bandura, 1986), the Theory of Planned Behavior (TPB; Ajzen, 1991), and the Transtheoretical Model of Behavior Change (TMBC; Prochaska et al., 1997). However, these models share several facets that render them inadequate for examining the influence of structural inequities on PrEP uptake among BHCW. Specifically, the models assume that individuals are rational, have control over their health decisions, and have the resources to take health-promoting actions; their designs are rooted in individualistic (i.e., White and Western) cultural values and patriarchal, cisgender, heteronormative male, and middle-class norms; and they overlook the influence of contextual factors such as structural discrimination on individual health behaviors and outcomes (Amaro, 1995; Bowleg, 2017; Bowleg, 2021; Cochran & Mays, 1993; Henrich et al., 2010; Lewandowski & Holden, 2011; Logan et al., 2002; Rosenthal & Levy, 2010; Weber &

Parra-Medina, 2003). Additionally, social cognitive and health psychology approaches for examining stigma and discrimination, such as Goffman's (1963) conceptualization of stigma and Meyer's (2003) Minority Stress Model, focus almost exclusively on individual- and interpersonal-level determinants. As such, they ignore structural-level determinants that are critical for understanding gaps in PrEP uptake among BHCW.

Instead, this dissertation is guided by structural intersectionality (Crenshaw, 1989), a theoretical framework that allows for the examination of how multiple and interlocking systems of oppression, such as structural racism, classism, and sexism, influence PrEP uptake among BHCW (Homan et al., 2021). Intersectionality is a critical analytical framework originating from Black, lesbian, feminist activism and scholarship that stresses how multiple systems of oppression (i.e., structural racism, classism, *and* sexism) combine to influence the lived experiences of historically oppressed groups (Collins, 1991; Combahee River Collective, 1977; Crenshaw, 1991). Rather than focusing on individuals and their immovable social positions, intersectionality urges attention to the interlocking social power structures that create and perpetuate inequitable outcomes (Bowleg, 2017) such as those related to health (Bowleg et al., 2023).

Unlike conventional social psychological models that place the individual as the primary unit of analysis, intersectional models center the systems of power that shape both oppression and privilege for social groups (Bowleg, 2017). As such, intersectionality helps situate individual health decisions and behaviors within the social, structural, cultural, and historical contexts that create and reinforce health inequities (Collins, 1995; Weber & Parra-Medina, 2003). As I will demonstrate in the subsequent chapter, this attendance to power is particularly critical for understanding PrEP uptake and other

health inequities among BHCW because of how their lives and healthcare experiences are affected by intersecting structural oppressions. Further, in contrast to the assumptions underlying social psychological models, intersectional models acknowledge that people do not have a single, fixed social identity but rather that social identities are dynamic and socially constructed by multiple social processes and structural factors (Bowleg, 2017; Weber & Parra-Medina, 2003). Intersectionality was designed to center the perspectives of people from multiply oppressed groups, specifically women of color (Weber & Parra-Medina, 2003), and therefore it is particularly fitting for framing research related to BHCW, this dissertation's population of focus.

Informed by empirical research from social psychology, sociology, and public health, I use structural equation modeling to investigate the direct effects of an intersectional structural determinant (neighborhood poverty) on the PrEP uptake of a cohort of BHCW, as well as the mediating effects of associated psychosocial (perceived HIV risk, anticipated PrEP stigma) pathways. Guided by the structural intersectionality theoretical framework, this dissertation provides empirical evidence about the multilevel influence of neighborhood poverty on PrEP uptake for BHCW, a population at high HIV risk, within the DMV, an area with high HIV incidence. The application of structural intersectionality to health equity research is in its early stages and is a promising direction for social psychology. Results highlight the importance of transcending exclusively individual-level psychosocial determinants and using multilevel, multidisciplinary, and intersectional approaches to understand PrEP uptake among BHCW.

Chapter 2: Literature Review

Social Psychological Theoretical Models of Health Behavior

Social psychological theoretical models of health behavior aim to explain or predict health behaviors or behavior changes by focusing on individual-level constructs and processes (Logan et al., 2002). Theoretical models such as the HBM (Hochbaum et al., 1952; Rosenstock et al., 1988), SCT (Bandura, 1986), the TPB (Ajzen, 1991), and the TMBC (Prochaska et al., 1997) predate HIV health behavior research, but researchers have attempted to use them to explain contemporary HIV prevention behaviors (Amaro, 1995) such as PrEP uptake. Though these models take different approaches to conceptualize health behavioral processes, they all assume that individuals make health choices based on rational decision-making, that they have control over their health decisions, and that they have access to the necessary resources to make health-promoting decisions (Cochran & Mays, Logan et al., 2002). Perception is a key feature in these models; they theorize that the more an individual perceives that they are at risk of experiencing an adverse outcome, the more motivated they will be to engage in behavior change (Golub & Fikslin, 2019). Within the HBM and SCT, the construct of self-efficacy is also primary, suggesting that an individual's perception that they can engage in a prevention behavior will lead to such action (Cochran & Mays, 1993; Lewandowski & Holden, 2011; Logan et al., 2002). In the following subsections, I will illustrate why social psychological theoretical models of health behavior that focus primarily on increasing individual perceived HIV risk are insufficient for understanding how to improve HIV prevention behaviors such as PrEP uptake among BHCW.

Perceived HIV Risk

The HBM theorizes that an individual is more likely to engage in a health behavior if they perceive a disease to be a high threat (susceptibility and severity), perceive that acting against the threat has more benefits than costs, and believe that they have the self-efficacy to perform the behavior (Rosenstock et al., 1988). For an individual to engage in an HIV prevention behavior like PrEP uptake for example, they must see their current sexual behaviors as risky, be incentivized to seek out and take the medication to prevent HIV (the desired outcome), view PrEP uptake as having few costs, and feel capable of engaging in such changes (Rosenstock et al., 1988; Lewandowski & Holden, 2011). Empirical research indicates that BHCW have low HIV risk perceptions, an individual-level psychosocial factor that can increase their actual risk for HIV by hindering self-protective behaviors such as HIV testing (Blackstock et al., 2015) or PrEP initiation. In a qualitative study with 288 women living across the U.S., 86% of whom were Black, participants indicated a lack of personal perceived vulnerability to HIV even though they knew someone with HIV or other STIs, believing that most women "don't think it could happen to them" (Frew et al., 2016, p. 13). Low HIV risk perceptions were also found among a cohort of BHCW in D.C. (Scott et al., 2022), among BHCW living in low-income neighborhoods in the South (Hill et al., 2021), and among BHCW residing in Mississippi (Willie et al., 2022).

Similarly, in a cross-sectional study with 196 low-income BHCW, Younge and colleagues (2010) found that although a majority of participants were knowledgeable about HIV transmission and prevention, most reported a low perceived risk of contracting HIV and that this perception was associated with high levels of sexual optimistic bias

(Weinstein, 1984), or the belief that one is less likely to experience a negative event from sexual behaviors relative to other people. The authors argue that this bias may be an adaptive coping mechanism that participants developed to manage the cognitive dissonance associated with engaging in sexual behaviors that they know are risky (Younge et al., 2010). Although some researchers argue that helping BHCW recognize their HIV risk is an important facet of HIV prevention interventions (Flash et al., 2017), others posit that knowledge alone does not necessarily yield HIV risk reduction behaviors (Mays & Cochran, 1988; Younge et al., 2010). In support of this, several meta-analyses show that there is limited empirical evidence on the effectiveness of behavioral interventions that aim to improve HIV prevention practices by increasing individual risk perceptions (Golub & Fikslin, 2019; LaCroix et al., 2014; Webb & Sheeran, 2006).

In a nationally representative, racially diverse sample of young adults, Hallfors and colleagues (2007) found that White participants' risk for HIV and other sexually transmitted diseases (STDs) increased only when their sexual behavior was very risky (e.g., engaging in sex for money), while Black participants remained at high risk even when their sexual behavior was less risky (e.g., having few sexual partners), and further, racial inequities in STD rates continued even after controlling for individual socioeconomic status. The authors concluded that strategies that aim to prevent HIV and other STDs by targeting individual sexual risk behaviors are likely appropriate only for White people, and that interventions for Black people must consider larger environmental factors that contribute to their heighted HIV risk (Hallfors et al., 2007). Risky sexual behavior therefore does not fully account for HIV racial inequities, and HIV prevention research for BHCW must therefore expand beyond targeting individual risk perceptions.

Missing Context

The underlying assumption within the theoretical models of health behavior that people have control over their behaviors is rooted in individualistic cultural values (Cochran & Mays, 1993). Compared to collectivists, individualists prioritize independence, self-reliance, and freedom from external restraints, and view attitudes as generally stable, internally consistent properties of individuals that are less influenced by others (Albarracin & Shavitt, 2019; Hornsey & Fielding, 2017). For Black women, behavior change messages based on individualism, such as taking action to protect oneself against HIV, may be misaligned with the cultural values of cooperation and interdependence among their community (Mays & Cochran, 1988). Mays and Cochran (1988) argue that HIV prevention messages advocating that women to talk to their sexual partners about safer sex practices (e.g., using condoms or previous sexual behavior) are based on White, middle-class notions that it is normative for women to discuss sexual matters with her partners. As such, these messages are culturally inappropriate for racial/ethnic minority women, particularly for poor Black women (Mays & Cochran, 1988).

By focusing on individualistic processes, these social psychological models also deprioritize the influence of contextual factors that are out of one's control on an individual's health behaviors (Cochran & Mays, 1993; Logan et al., 2002). This individualistic focus is particularly problematic in the context of sexually transmitted infections like HIV because individual sexual risk behaviors, particularly for women, are influenced by relational, situational, and cultural factors (Amaro, 1995). The models are seeded in the norms of the patriarchy (i.e., the dominant social system in the U.S. in

which primarily men hold positions of power and privilege) by assuming that women and men equally have control over sexual decisions (Rosenthal & Levy, 2010). As Logan and colleagues (2002) argue, though individual level factors such as self-efficacy should be considered in women's sexual behavior research, contextual factors must also be incorporated. As will be explained in detail in a subsequent section, power is gendered (Pratto & Walker, 2004); women do not have the same control and power in their health decisions, particularly those related to sexual health, as do men (Rosenthal & Levy, 2010). The models neglect attendance to unequal gender power dynamics in society and how they shape gender norms, roles in sexual relationships, and sexual behaviors (Amaro, 1995).

Turner (2008) argues that in order to be independent and self-reliant, American individualists paradoxically rely "on gendered structures of inequality to meet basic social and material needs, as well as on the culture of white supremacy to enhance his self-esteem" (p. 199). Blind to the influence of social structures, individualists ignore how their privilege and White male supremacy benefits from racialized and gendered structural inequities (Turner, 2008). Because they are rooted in individualistic (i.e., White, Western) and patriarchal values, the theoretical models of health behavior implicitly assume that the experiences of cisgender, White, Western, middle-class, educated, and heterosexual males are normative and universal (Bowleg, 2021; Henrich et al., 2010). Lupton (1993) argues that even the discourse around risk perception in health research is seeded in individualism, as it assumes risk behaviors are rational, cognitive processes and thus places the blame of health risks on individuals for their lifestyle choices and lack of self-control while ignoring the social-cultural contexts in which they

live. Consequently, the theoretical models of health behavior ignore critical structural factors such as how racism, sexism, and classism differentially impact individual health behaviors and outcomes (Rosenthal & Levy, 2010), such as PrEP uptake among BHCW.

For example, using the HBM, Lewandowski and Holden (2011) analyzed transcripts from a focus group study on HIV prevention with Black women. They found that most participants were aware of their HIV risk, believed themselves to be self-efficacious, and thought they could engage in HIV prevention behaviors (Lewandowski & Holden, 2011). Yet participants still did not feel they had control over their HIV-related health outcomes due to external factors including poverty, lack of access to healthcare, unsafe neighborhood environments, and discrimination from HCPs (Lewandowski & Holden, 2011). Had their analyses not expanded beyond the individual-level factors accounted for in the HBM, Lewandowski and Holden (2011) would have missed critical determinants that participants perceived hindered their ability to prevent HIV. In a nationwide quantitative study with 315 BHCW (55% of whom resided in the U.S. South), researchers found that structural factors such as visiting an HCP in the previous year and comfort discussing PrEP with their HCP were positively correlated with PrEP interest (Irie et al., 2024).

In a cross-sectional study with 294 participants in D.C., 92% of whom were BHCW, Hull and colleagues (2023) examined psychosocial determinants of PrEP uptake using the Integrative Model of Behavioral Prediction (IMBP; Fishbein, 2009), a theory based on the TPB and SCT. Like other reasoned action approaches, the IMBP posits that people's behavior can be predicted from their intentions to perform the behavior and that such behavior is under their control (Fishbein, 2009). Hull et al. (2023) found that

although participants' PrEP awareness was low, once they learned about it, they shared intentions to use it, and that psychosocial factors such as self-efficacy, attitudes, and subjective norms had positive direct effects on their intentions. Like in other social psychological models of health behavior, in the IMBP contextual/environmental factors (e.g., policies, discrimination, neighborhood structure) serve as moderators in the pathway between intentions and behavior rather than as part of the model's defining structure (Cochran & Mays, 1993; Hull et al., 2023). Because intentions can be impeded by structural factors such as discrimination, lack of access to healthcare or insurance, and economic, food, or housing insecurity (Bowleg, 2012; Bowleg et al., 2013; Flash et al., 2017), individual-level psychosocial factors alone cannot account for PrEP uptake barriers among BHCW (Hull et al., 2023).

Because they are rooted in individualistic (i.e., White and Western), patriarchal and middle-class norms, conventional social psychological theoretical models of health behavior are unsuitable for examining multilevel determinants of PrEP uptake among BHCW who live in disadvantaged neighborhoods. These models were designed by Eurocentric, White, male, individualistic researchers, and tested primarily with White participants, rendering them culturally inappropriate for explaining the health behaviors of racial/ethnic minorities who may not hold individualistic values and for whom the models were not created (Cochran & Mays, 1993; Collins, 1991; Henrich et al., 2010). As will be explained in subsequent sections, BHCW's health is impacted not just by individual and interpersonal level determinants, but also by intersectional structural factors. Due to their lack of attendance to power dynamics between groups (Logan et al., 2002; Rosenthal & Levy, 2010), particularly those between women and men related to

sexual behavior (Amaro, 1995), these models cannot capture the complex, multilevel factors necessary to understand this dissertation's topic for the population of focus. Instead, this dissertation is guided by structural intersectionality (Crenshaw, 1988), a theoretical model that was designed for Black women, centers issues of power, and attends to the influence of structural determinants on BHCW's health (Weber & Parra-Medina, 2003).

Stigma & Discrimination

In this section, I describe several social cognitive and health psychological approaches to examining stigma and discrimination and outline how, as individual-level approaches, they offer an incomplete interpretation of stigma and discrimination as psychosocial barriers to PrEP uptake among BHCW. I then incorporate a sociological perspective to argue that stigma and discrimination should be studied as multilevel constructs to address barriers to PrEP uptake for BHCW.

Social Cognitive Approaches

Social psychological research on stigma stems from Goffman's (1963) conceptualization of stigma as a process by which a person becomes socially discredited and develops a spoiled identity based on a specific attribute, such as an illness or a minoritized race/ethnicity, gender, or sexual identity. The stigmatization process is theorized to occur through social interactions and processes (Chaudoir et al., 2013; Goffman, 1963; Parker & Aggleton, 2003). This can lead to anticipation of stigma or internalization, wherein socially established norms and values are adopted as one's own (Ryan & Connell, 1989), and/or the formation of stereotypes and prejudice towards others (Crocker et al., 1998). Within the field of psychology, stigma is defined as

prejudices or stereotypes a person can hold toward themselves (internalized stigma) or another person or group (interpersonal stigma) due to certain statuses (e.g., racial/ethnic, gender, socioeconomic, sexuality, age, disability, immigrant, or indigenous status), whereas discrimination refers to unjust and differential actions taken based on those negative attitudes and beliefs (American Psychological Association, 2023).

From the social cognitive perspective, stigma operates solely within and between individuals. In oppressive environments for example, oppressed people are surrounded by negative attitudes, stereotypes, and messages, which are reinforced by violence, and victim-hating and -blaming (Pharr, 1997). Through social norms, these practices continue even in the absence of members of the oppressor group (Bearman et al., 2009). For some members of the oppressed group, oppressive conditions can lead to low self-esteem and self-blame, submissiveness in anticipation of punishment from the dominant group, or an altered sense of the self and view of the world, all of which can help perpetuate the existing oppressive system (Cherry & Wilcox, 2021; Glick & Fiske, 2001; Zucker & Landry, 2007).

Fanon (1952) argues that because of colonization and slavery and the ways in which Black people continue to be oppressed through structural discrimination (see next section for more detail), Black people's self-identities are always shaped by and cannot be separated from Whiteness and White oppression. He explains that society has already deemed a Black person's identity as inferior; their mere existence requires justification, and therefore their sense of self is formed within the context of self-preservation (Fanon, 1952). Though oppression itself operates externally, oppressed people internalize the negative opinions of their oppressors (Freire, 1970), messages that are perpetuated

through negative media images and portrayals (or "controlling images" used to subjugate a group; Collins, 2000) and bolstered by discriminatory laws and practices (Williams and Mohammed, 2013). Stigma thus helps ensure power asymmetry between groups by keeping the oppressed feeling powerless and therefore behaving powerlessly (Bearman et al., 2009; Freire, 1970; Jackins, 1997), including through the anticipation of future stigmatization. As will be detailed in subsequent sections, though stigma— including internalized, perceived, or anticipated—is studied in psychology as internal cognitive processes, this view must be broadened and contextualized (Pantelic et al., 2019) when examining the health outcomes and behaviors of historically oppressed groups such as BHCW.

Social cognitive approaches to examining interpersonal stigma have focused primarily on how prejudice and stereotyping are psychosocial stressors, that they are based on people's attitudes about and perceptions of the stigmatized attribute, and that they function to influence social interactions (Krieger, 2014; Link & Phelan, 2001; Parker & Aggleton, 2003). Social categorization theory (Tajfel & Turner, 1979) describes stereotyping as a functional mechanism through which people classify others into social groups to make sense of their social world. Whether accurate or not, stereotypes are cognitive shortcuts that help people categorize information about people, interpret social information, and guide subsequent behavior (Devine, 1989). From a broader viewpoint, stereotypes are a mechanism for powerful people to exert and maintain control over those less powerful by providing limits for what they should think, feel, and behave, thus serving to justify the status quo (Collins, 2000; Fiske, 1993). In the U.S., negative stereotypes about Black people are rooted in slavery (Hudson et al., 2024) and they help

to sustain the social dominance hierarchies that keep Black people disproportionately powerless (Sidanius & Pratto, 1999). As will be detailed in a subsequent section, gendered and racially discriminatory stereotypes about BHCW, particularly those related to their sexuality, can thwart their access to quality sexual and reproductive healthcare (Cazeau-Bandoo & Ho, 2022; Howell, 2023; Prather et al., 2018; Rosenthal & Lobel, 2020), including HIV prevention services such as PrEP.

Empirical research following social cognitive approaches has typically examined stigma as perception-based (Bowleg, 2021; Pascoe & Smart Richman, 2009), yielding studies that seek to alter intergroup relations by targeting individual perceivers (Link & Phelan, 2001; Parker & Aggleton, 2003) or altering the prejudicial attitudes of those who discriminate (Kreiger, 2014). Because studies at this level rely on experimental or self-report data, they overlook the influence of factors that are not or cannot be directly observed by investigators or labeled by those experiencing them, such as discriminatory laws and power structures (Homan, 2024; Krieger, 2014). Additionally, cross-sectional and experimental designs measure the health impacts of only one type of stigma or discrimination (e.g., racism *or* sexism) at a singular time point or within a specific time frame, failing to capture the multidimensional and intersectional nature of discrimination (e.g., racism *and* sexism, gendered racism) and the cumulative health effects of such negative events over a lifetime (Krieger, 2014).

Another focus of social psychological research on stigma and discrimination is measuring implicit biases, or people's automatic cognitive associations with social groups that are linked to social stereotypes (Vuletich & Payne, 2019). Critics of implicit biases measures, such as the Implicit Association Test (IAT), argue that these tests merely

capture one's familiarity and awareness of intergroup stereotypes rather than underlying implicit biases (Jost, 2019) and further, that they have limited predictive validity of discriminatory behavior (Johnson et al., 2019). For more detail on this debate, see meta-analyses by Oswald et al. (2015) and Kurdi et al. (2019). In an analysis of 9 longitudinal, experimental interventions that used the IAT across 18 universities, Vuletich and Payne (2019) found that efforts to reduce implicit bias worked in the short term only. Interestingly however, when Vuletich and Payne (2019) incorporated structural inequality measures (such as whether each campus had Confederate monuments, the percentage of non-White faculty, and indicators of campus social mobility), they found that individual implicit bias scores fluctuated across time points but that campus-level averages were similar in the pre- and post-test. They concluded that implicit bias is transient at the individual level but stable when aggregated at the social-structural level (Vuletich & Payne, 2019). Vuletich and Payne's (2019) findings provide empirical evidence that discrimination is fostered through mutually reinforcing systems of power (Bailey et al., 2017) and that examination of structural inequities should incorporate measures from multiple levels.

Social cognitive approaches, with their focus on individual-level processes, perceptions, and experiences, provide only a narrow view of how stigma and discrimination influence health behaviors. This dissertation instead incorporates a multilevel perspective to understand the larger context that influences PrEP uptake among BHCW.

Health Psychology Approaches

Within health psychology, the negative health effects of stigma and discrimination are typically examined through the stress response. Stress can be conceptualized as an external event or stimulus (stressor), an appraisal of an event or situation, or a physiological or emotional response (Gruenewald & Wang, 2019; Kemeny, 2003; O'Conner et al., 2021). A stressor like the perception or experience of discrimination can have direct and indirect effects on the body's physiological stress response, particularly through cortisol release (Allen et al., 2019; Straub, 2019). Although the release of cortisol is essential for the body's functioning in response to acute stressors, according to the Allostatic Load Model (ALM; McEwen & Stellar, 1993), repeated or chronic activation of the stress response can lead to a dysregulation of cortisol release, known as allostatic load, which has many adverse effects on system functioning and subsequent health (Straub, 2019).

In Pascoe and Smart Richman's (2009) meta-analysis for example, they found that higher levels of perceived (interpersonal) discrimination, including related to race, gender, and sexual identity, negatively correlated with multiple mental and physical health outcomes. In alignment with the ALM (McEwen & Stellar, 1993), results indicated that across studies, perceived discrimination produced heightened stress responses and triggered the body's physiological stress response system (Pascoe & Smart Richman, 2009). In a quantitative study with 208 Black women in the San Francisco Bay area, Allen and colleagues (2019) found links between frequency of experiences of racial discrimination and higher allostatic load. Chronic stress exposure from racially discriminatory experiences, particularly when they occur repeatedly over a lifetime, can

degrade Black women's coping resources, elevate their risk for stress-related conditions, and hinder health promotive behaviors (Allen et al., 2019; Knighton et al., 2022), such as PrEP uptake.

For example, in a cross-sectional study with 597 heterosexually active HIV-negative women, nearly 40% of whom were Black, researchers found that many participants anticipated disapproval from close others such as sexual partners, family members, and friends if they were to use PrEP, and their anticipated PrEP stigma was associated with lowered intentions to use the medication or discuss it with their provider (Calabrese et al., 2018). Previous experiences of HCP mistreatment can create the anticipation of stigma from other HCPs, a psychosocial factor that, among BHCW in D.C. (Irie et al., 2024; Scott et al., 2022) and Mississippi (Knight et al., 2024), has been negatively associated with future interest in and intention to initiate PrEP. Anticipated HIV-related stigma can also prompt internalized stigma (Rao et al., 2012; Stangl et al., 2019), which can yield adverse health outcomes such as worse overall self-rated health (Lo Hog Tian et al., 2021) and hinder health protective behaviors such as PrEP uptake (Auerbach et al., 2015). In a focus group study across 6 U.S. cities with 144 women (92% of whom were Black), participants voiced concerns about anticipated stigma from their sexual partners if they were to take PrEP and shared that their internalization of this stigma deterred them from accurately perceiving their risk for HIV infection (Auerbach et al., 2015). These results indicate that the mere anticipation of stigma from others, particularly HCPs, can be internalized and hinder BHCW's approach to HIV prevention. These data yield insight into the individual-level pathways that hinder BHCW's PrEP uptake. Yet, individual level determinants offer partial explanation only, as they cannot

account for the larger structural context that helps explain *why* barriers to PrEP uptake exist for BHCW in the first place. More complex empirical investigation is thus required to uncover the multilevel obstacles to BHCW's PrEP uptake.

Meyer's Minority Stress Model (2003) is often used to conceptualize the effects of stigma and discrimination on the health of minoritized individuals, such as racial/ethnic or sexual minorities. This health psychology model theorizes that minorities experience unique chronic stress because of their social position(s), which has a cumulative negative effect on their mental health. Olkin (2002) posits that the essential definition of a minority group is not being a minority numerically, but rather the experience of prejudice, stigma, discrimination, and oppression, and therefore a group can be considered a minority when the prevailing perspective in society is not theirs (e.g., women living in the patriarchy). The Minority Stress Model (Meyer, 2003) suggests that discrimination at all levels is a key socio-environmental stressor that impacts health via the stress pathway. Additionally, it proposes that such discrimination can be internalized, leading those with a minority status to have a personal identification with that status and accept the negative societal beliefs about their identity. Such internalization can lead to additional stressors related to the individual's perception of the self as a stigmatized or devalued person, such as fear or anticipation of social rejection, which can in turn engender adverse health outcomes and behaviors. Not only does the model assume a single-axis framework by accounting for only one type of discrimination at a time (i.e., racism or sexism; Bowleg, 2012), but it also locates the problem of stigma on the individual being stigmatized, rather than placing the burden of these experiences and the subsequent stress on the oppressive power structures that generate and uphold them

(Bowleg, 2022). The Model therefore falls short of meeting the principles of intersectionality.

Health psychology approaches provide some insight into the individual-level stress processes underlying experiences of stigma and discrimination. Like social cognitive approaches however, they cannot account for how structural-level discrimination influences health outcomes and behaviors. A multilevel approach is therefore necessary to understand the effects of structural level determinants on BHCW's PrEP uptake.

Multilevel Constructs

Social cognitive approaches elucidate the internal and interpersonal processes that produce stigma toward oneself or others, and health psychology studies provide insight into how these processes impact adverse health behaviors and outcomes primarily via the stress pathway. In contrast to these individualistic approaches, the sociological Modified Labeling Theory conceptualizes stigma as situation-specific, dynamic, and occurring within power dynamics between social groups (Link et al., 1989). Moving beyond individualism, in the aftermath of the 1980s AIDS epidemic during which over 100,000 people died from AIDS in the U.S. (CDC, 1991), Parker and Aggleton (2003) described HIV-related stigma as a social process that occurs within the context of power and domination. They posited that HIV-related stigma catalyzes dynamics of power and control between dominant and devalued groups and is rooted in a society's culture and history of exclusion and oppression, and it therefore must be understood within a framework of social inequity (Parker & Aggleton, 2003). They argued:

> Stigma and stigmatization function, quite literally, at the point of intersection between *culture, power* and *difference*—and it is only by exploring the relationships between these different categories that it becomes possible to understand stigma and stigmatization not merely as an isolated phenomenon, or expressions of individual attitudes or of cultural values, but as central to the constitution of the social order. (p. 17)

This broader conceptualization pivots stigma research away from models that focus on individuals, perceivers, and undesirable stigmatized identities toward those that examine how stigmatizing social processes are created and perpetuated by structural inequities (e.g., racism, sexism, ageism, ableism) and how they influence negative health outcomes (Pantelic et al., 2019; Parker & Aggleton, 2003).

Looking across health outcomes, empirical research illustrates that investigators cannot capture the sources of racial/ethnic health inequities with exclusively micro-level data (Brown & Homan, 2022) because such analyses would miss the full extent of structural racism's toll on racial/ethnic minorities' health (Krieger, 2014). Even internalized stigma, conceptualized as an internal cognitive process, is shaped by broader determinants of health (Pantelic et al., 2019) because "societal-level conditions, cultural norms, and institutional policies… constrain the opportunities, resources, and wellbeing of the stigmatized" (Hatzenbuehler & Link, 2014, p. 2). Instead, researchers contend that research on stigma/discrimination and health must include both individual and structural level measures (Krieger, 2012) and attend more to the structural antecedents that shape Black women's HIV prevention behaviors (Caldwell & Mathews, 2015) including PrEP uptake (Irie et al., 2024). To understand the full picture of HIV-related inequities, it is

therefore critical to also examine the influence of structural determinants as causal agents (Blankenship et al., 2000; Doshi et al., 2021; Taggart et al., 2021).

Along with "stigma," this dissertation will use "discrimination" to emphasize that it is "a socially structured and sanctioned phenomenon, justified by ideology and expressed in interactions among and between individuals and institutions, that maintains privileges for members of dominant groups at the cost of deprivation for others" (Krieger, 2014, p. 650). The term "discrimination" helps pivot the focus away from the recipient to attend to the structural sources of power and domination that link to social inequities and yield exclusion for subordinated groups (Bowleg, 2022; Krieger, 2014). Such language aligns with social ecological models that recognize that individuals are embedded within social-structural networks that influence their behavior, and crucially, that attend to historical practices that shape modern health (Krieger, 2012).

Structural Determinants of Health

While exclusively individual-level approaches assume that people have substantial autonomy over their health choices and behaviors, structural approaches postulate that there are structural causes to public health inequities and that individual agency and subsequent health outcomes are shaped by social, economic, and political institutions and structures (Blankenship et al., 2000; Blankenship et al., 2006). Rather than targeting individual sexual risk behaviors or characteristics to prevent HIV, structural approaches instead focus on the social, economic, and political contexts in which such risk behaviors or heightened HIV risk occur (Blankenship et al., 2000; Blankenship et al., 2006) because "structural problems require structural solutions" (Krieger, 2021, p. 2). Experts argue that multilevel research is required to examine the

influence of structural determinants on individual HIV risk and prevention behaviors (Blankenship et al., 2000; Brawner et al., 2022; Earnshaw et al., 2022). Understanding how structures influence medical decisions is critical in health equity research (Metzl & Hansen, 2014), and thus the micro and meso levels of focus in social psychology can benefit from the macro level perspectives in disciplines such as sociology and public health (Blankenship et al., 2006).

> Structural determinants of health are:
>
> 1) The written and unwritten rules that create, maintain, or eliminate durable and hierarchical patterns of advantage among socially constructed groups in the conditions that affect health, and 2) the manifestation of power relations in that people and groups with more power based on current social structures work—implicitly and explicitly—to maintain their advantage by reinforcing or modifying these rules. (Heller et al., 2024, p. 357)

Structural determinants stem from a society's dominant values, beliefs, cultures, norms, laws, policies, and institutional practices, and they serve to maintain historical patterns of power and privilege, and advantage and disadvantage (Heller et al., 2024). These determinants undergird social processes and power dynamics that influence inequities in resource distribution (Heller et al., 2024). The focus on altering the balance of power among socially constructed groups is a key factor that differentiates structural approaches to health from individual level interventions (Heller et al., 2024). From a systems of exposure perspective, racism, sexism, and classism as fundamental causes of health inequities are examined as dynamic and context specific rather than fixed individual traits that yield the same health consequences regardless of social location (Riley, 2020). For

example, Krieger and colleagues (2013) examined the effect of the 1964 U.S. Civil Rights Act's abolition of Jim Crow legislation (i.e., state laws that legalized racial discrimination across the U.S. South) on infant mortality rates and found that prior to 1964, the Black infant mortality rate was 1.19 times higher in Jim Crow polities compared to non-Jim Crow polities but that by 1970, the relative risk dropped to 1. These findings demonstrate the impact that structural determinants, such as segregation policies in hospitals and access to healthcare, can have on population health inequities (Krieger et al., 2013).

Ecosocial theory (Krieger, 2012) posits that people embody exposures such as discrimination from their social contexts and environments that result in individual adverse health outcomes and yield population health inequities. Krieger (2012) argues that understanding how discrimination is expressed within individuals requires knowledge of macro level forces and processes and how these are rooted in historical practices. Thus, in the following subsections, I will incorporate a structural perspective within social psychological research on three forms of discrimination (i.e., racism, classism, and sexism) to understand the sources of health inequities for minoritized groups such as BHCW, data that helps contextualize why this population is at increased risk for HIV but has lower PrEP uptake rates.

Racism

Social psychologists operationalize racism as a set of ideas or beliefs that lead individuals to form prejudicial attitudes toward a racial group, and which may yield discriminatory actions against individuals of that group (Allport, 1958; Schaefer, 1990). This conceptualization of racism as an ideology suggests that it is a static phenomenon

occurring at the individual level and a result of normal and adaptive psychological processes (Bonilla-Silva, 1997; Dovidio & Gaertner, 2004). Social identity theory (Tajfel & Turner, 1986) posits that one's self-concept and knowledge structures are derived from the social group to which they perceive they belong, and that group membership provides a set of norms for thoughts and actions that one can follow. Social categorization of people into groups is automatic and individuals are motivated to evaluate ingroup members (such as those of their own race/ethnicity) more favorably than those of the outgroup to support a positive self-image (Ferguson & Kelley, 1964; Tajfel & Turner, 1986). From the perspective of the perpetrator, interpersonal racism may therefore be considered a functional ingroup bias, as it helps distinguish one's group from another, fostering a sense of personal control, superiority, and self-esteem (Dovidio & Gaertner, 2004). However, framing interpersonal racism as a fixed, innate cognitive bias absolves perpetrators of responsibility for the harm they inflict on their targets.

Empirical social psychological studies on racial attitudes indicate that a majority of non-Black U.S. participants hold implicit racial biases against Black people (Assari, 2018; Nosek et al., 2007), automatically associating Black faces with stereotypes such as criminality (Eberhardt et al., 2004) and danger (Thiem et al., 2019). Racial stereotypes also can be internalized and impact behavior even without a person's endorsement of them, as exemplified in a classic experiment when Black students' test performances were adversely impacted by negative stereotypes about Black people's intellectual ability and competence, a phenomenon called stereotype threat (Steele & Aronson, 1995). Like other implicit biases, this conceptualization assumes that racism is an automatic, natural prejudice that bypasses one's conscious awareness, and that consequent discriminatory

behavior is unintentional (Dovidio & Gaertner, 2004). As such, much of social psychological literature on racism and health has focused on the targets, including self-reports of the psychosocial stress or maladaptive coping behaviors resulting from their experiences of interpersonal racial discrimination (Bailey et al., 2017; Berger & Sarnyai, 2014; Krieger, 2014; Paradies et al., 2015; Williams & Mohammed, 2013). Yet centering research on the targets of racism and their health outcomes does nothing to address the root causes and leaves little room for intervention.

In contrast to social psychologists, proponents of the structural perspective such as sociologists argue that individual behaviors cannot be separated from the contexts in which they occur (Blankenship et al., 2000; Blankenship et al., 2006). Racism instead exists within and because of a society's racist social structures based on White supremacy; it perpetuates racialized social hierarchies and facilitates subordination and superordination among racialized groups (Bonilla-Silva, 1997). Even stereotypes, or controlling images, are tools that dominant groups use to exercise power over the oppressed to perpetuate their subordination (Collins, 1991). Structural racism is the totality of ways that racism is created and perpetuated by a society's laws, institutions, rules, cultures, and norms, and describes how racism embedded within one sector reinforces it in others (Bailey et al., 2017; Bailey et al., 2021). Though the U.S. has shifted away from *de jure* (i.e., legal) forms of structural racism such as slavery and Jim Crow laws, *de facto* (i.e., sanctioned by custom or practice) forms are omnipresent (Hardeman et al., 2022; Krieger, 2014).

For example, although the 1964 U.S. Civil Rights Act improved Black people's access to healthcare by legally integrating hospitals, Black women are still significantly

more likely to die during childbirth than White women in Southern states, with Arkansas having the highest maternal mortality rate of 43.5 deaths per 100,000 live births between 2018 and 2021 (Sausser, 2024). In a national cross-sectional study with 2,138 participants, Vedam and colleagues (2019) found that compared to White women, women of color, particularly those of low socioeconomic status, were significantly more likely to report mistreatment from HCPs during childbirth, including feeling a loss of autonomy and being ignored, shouted at, scolded, or threatened. Survey results also indicated that regardless of the mother's race, women who had Black partners reported more experiences of mistreatment (Vedam, 2019). These data suggest that structural racism and its adverse health effects persist even when it is not sanctioned by law.

As Riley (2018) posits:

> Structural racism is not just the water we drink, but the pipes that deliver it to us; it is not just the air we breathe, but our proximity to highways and factories; it is not just the neighborhoods we live in, but the invisible walls built up around them. (p. 7)

Public institutions in the U.S.—including healthcare, education, employment, housing, and public health—are structured in a manner that disadvantages historically oppressed groups such as racial and ethnic minorities, making structural racism a potent underlying cause of health inequities (Yearby, 2020). Rather than focusing exclusively on individual level causes such as attitudes or implicit bias, structural racism perspectives assert that racial health inequities are indicators of racist oppression in the U.S. (Williams, 1997; Blankenship et al., 2023), not simply the result of individual attitudes or behaviors.

Racial residential segregation, for example, was designed to protect White people in the U.S. from physical and social interaction with Black people (Williams & Collins, 2001). Segregation "was imposed by legislation, supported by major economic institutions, enshrined in the housing policies of the federal government, enforced by the judicial system, and legitimized by the ideology of white supremacy" (Williams & Collins, 2001, p. 405). Limiting where Black people can live in turn limits their social and sexual networks, opportunities, and access to resources (Brawner et al., 2022) such as education, health care, and safety. Empirical sociological and public health research shows that indices of racial neighborhood segregation predict racialized inequities in health such as self-rated health, coronary heart disease mortality, and life expectancy (Hardeman et al., 2022; Williams & Collins, 2001). Racial residential segregation harms the health of racial/ethnic minorities through a variety of direct and indirect pathways (Bailey et al., 2017) including by hindering access to quality healthcare (Landrine & Corral, 2009), healthy food stores (Bower et al., 2014), and affordable housing (Blankenship et al., 2023; Kramer & Hogue, 2009; White & Borrell, 2011), and by thwarting access to quality education and employment which consequently limits economic opportunities and mobility (Collins & Williams, 1999; Williams & Collins, 2001). It also creates risky neighborhood environments (Landrine & Corral, 2009; Williams & Collins, 2001) such as those exposed to more environmental hazards (Bravo et al., 2016; Mohai et al., 2009; Woo et al., 2018), clustered alcohol and tobacco shops and targeted product marketing (Moore et al., 1996; Rabow & Watt, 1982), and harsh or fatal policing and surveillance (Bowleg et al., 2021; Soss & Weaver, 2017).

Due to the ways in which it is rooted in U.S. society, HIV experts argue that structural racism is its own pandemic and a major obstacle to ending the HIV epidemic (Blackstock, 2021). Data from a systematic review of 55 quantitative and qualitative studies on the relationship between neighborhoods and HIV vulnerability indicate that structural racism increases Black people's HIV risk through racial residential segregation and inequitable housing policies that limit where they can live, concentrate poverty in their neighborhoods, and hinder their access to health promotive resources and prevention services (Brawner et al., 2022). According to Millett's (2020) commentary, structural racism contributes to HIV inequities through multiple determinants including income inequality, homelessness, unemployment, residential segregation, lack of access to insurance and healthcare, incarceration, healthcare provider biases, and discriminatory laws and policies. Adequately measuring the construct is therefore challenging as it requires first identifying and then capturing complex and multidimensional elements that exist across the various institutions that perpetuate structural racism (Dean & Thorpe, 2022; Muno et al., 2024). One study for example, used a latent structural racism measure with indicators across multiple domains including residential segregation and found a strong association between the measure and Black-White disparities of HIV mortality (Siegel et al., 2023). Structural racism is not merely an isolated risk factor for poor health but rather a "ubiquitous system of exposure that unevenly distributes the social determinants of health" (Riley, 2018, p. 7).

Because of how it amplifies socioeconomic inequities among racial/ethnic groups, structural racism must also be examined in conjunction with structural classism. In the following subsection, I explain how structural racism and classism in the U.S. are

intertwined and function to amplify health inequities, including those related to HIV, for racialized groups such as BHCW.

Classism

Structural classism is understood as systematic inequities based on social class or economic-related factors such as individual income or neighborhood socioeconomic characteristics (Krieger et al., 1997). A key aspect of classism in a capitalist society like the U.S. is an asymmetry of economic exploitation among groups, wherein the financial success of individuals in the higher income group is causally associated with the deprivation of those in lower income groups (Krieger et al., 1997). Poverty disproportionately harms Black and Brown communities in the U.S. (Aholou et al., 2016) because, as described in the previous section, economic institutions have been historically structured to privilege White people. For example, areas with higher levels of poverty and economic inequality today had higher proportions of enslaved people in 1860 (Payne et al., 2019).

The New Deal policies in the 1930s that aimed to boost economic recovery after the Great Depression served to expand only the White middle class while widening the Black-White wealth gap (Faber, 2020). Racial/ethnic minorities were excluded from protections within the Social Security Act and the National Labor Relations Act, which supported employee labor rights and unionization (Rolley, 2020). One particularly impactful New Deal policy was redlining, or the practice of systematically denying housing loans to residents in neighborhoods with majority people of color, which is considered a modern system of segregation (Rothstein, 2017). The Serviceman's Readjustment Act of 1944, or GI Bill, amplified these racialized economic inequities by

denying Black veterans the same educational opportunities and housing loans awarded to their White counterparts, hindering the social mobility of Black service members and their families for decades to come (Horvath, 2023).

Empirical data suggests there is a high correlation between racial residential segregation and neighborhood poverty, and segregation and redlining are still neighborhood level predictors of racial inequities in socioeconomic status (Williams & Collins, 2001) and in health (Hardeman et al., 2022) today. Economic divestment of predominantly Black neighborhoods reduces quality of life for its residents as these areas receive fewer health promoting resources including reduced access to healthcare services (Burns et al., 2021), lower quality health facilities with fewer clinicians (Bailey et al., 2017), and less safe physical infrastructure such as recreational facilities for exercise (Williams & Collins, 2001). Low-income neighborhoods are more likely to have poor housing conditions with high levels of crowding and noise, and increased exposure to violence and crime (Bullard, 1994; Evans & Saegert, 2000).

Further, the "hyperincarceration" of Black men in the U.S. (Wacquant, 2010) wherein 1 in 3 Black males can expect to go to prison in their lifetime (American Civil Liberties Union, 2025), is another relic of slavery that has collateral consequences on health of all neighborhood residents. Over-policing in Black communities (Alexander, 2011) and racially discriminatory sentencing laws ensure that Black men are incarcerated at a rate approximately 8 times higher than are White men (Craigie et al., 2018). Federal housing regulations prevent individuals with criminal records from accessing affordable public housing, and landlords can choose not to rent to those with criminal backgrounds, keeping many formerly incarcerated individuals in racially segregated, low-income

neighborhoods (Blankenship et al., 2023). These neighborhoods are also heavily surveilled by police, who implement a wide range of acts of brutality against Black people including verbal, sexual, and physical abuse, violations of rights, unwarranted arrests and detainments, and acts of lethal violence (Bowleg et al., 2021), all of which diminish neighborhood security and residents' sense of safety (Blankenship et al., 2023). Law enforcement officers also profile, physically and sexually assault, and murder Black women, though their experiences and stories are often ignored and less visible in the media (African American Policy Forum, 2015; Jacobs, 2017). In two in-depth interview studies, one with 26 Black women in Baltimore (Decker et al., 2019) and one with 9 Black women in Chicago (Long & Ullman, 2013), participants who had experienced sexual violence reported that they avoided contacting law enforcement for help because of a history of negative experiences with police including brutality, abuse, and victim-blaming.

Structural classism and conditions of poverty can harm individual health through the acute and chronic stress pathways. Poverty is positively correlated with high levels of stress due to issues including greater exposure to crime and physical hazards, elevated fears of crime and concerns over safety, substandard access to transportation, and increased time and effort required to access basic services and complete basic living tasks (Logan et al., 2002; Taylor et al., 1997). Additionally, Black women are more than twice as likely and Black teen and young adult women are more than five times as likely to be incarcerated than their White counterparts (Goodwin, 2020). The hyperincarceration of Black men (Wacquant, 2010) reduces the number of males in Black communities, disadvantages BHCW's partnership prospects, and increases the number of single female

family headship (Craigie et al., 2018). Black women are more likely to be heads of their household and, in 2023, 47% of Black mothers in the U.S. were single compared to 14% of White mothers (Salas-Betsch, 2024). Single-headed households have less income and higher rates of household poverty, conditions that increase parental stress, adversely affecting the health of all family members (Salas-Betsch, 2024). Poverty itself is stressful and can drain cognitive resources (Mani et al., 2013), and exposure to chronic stress can yield behaviors inimical to health such as increased substance use and constrain opportunities for health promotive behaviors such as physical exercise (Sinha, 2008; Williams & Collins, 2001) and HIV prevention.

In addition to amplifying economic inequities and stress, the intersection of structural classism and racism also influence HIV-related outcomes for racial/ethnic minorities living in low-income areas. Poverty and income inequality are key drivers of HIV transmission and linked to higher HIV incidence in Black communities (Buot et al., 2014; Millet, 2020; White House, 2021). A neighborhood is an important geographical unit (or place) that is characterized by the lived experiences and behaviors of its residents (Taggart et al., 2022). Because racial and economic segregation are strongly associated (Latkin et al., 2013), neighborhood inequities cluster with individual level social, economic, and health-related factors such as income, employment, healthcare access, and HIV-related behaviors and outcomes (Burns et al., 2021; Riley, 2018; Taggart et al., 2022). Burns and colleagues (2021) explain that:

> Neighborhoods are socially constructed environments of unequal distribution of power relations and resources which contribute to the production of 'HIV riskscapes' or spaces of increased HIV vulnerability… and [they] shape an

> individual's ability to avoid risk or minimize the effects of structural discrimination and in turn can have profound consequences on PrEP engagement. (p. 9)

People who live in neighborhoods with fewer health promotive resources, for example, face increased risk for worse HIV-related outcomes (Taggart et al., 2022; Taggart et al., 2023). In their systematic review, Brawner and colleagues (2022) found that, across studies, neighborhood disadvantage—evaluated by objective measures such as percentage of residents living in poverty or subjective measures such as perceived neighborhood quality—is strongly associated with HIV risk outcomes. Though the intersection of structural racism and classism is damaging to the health of racial/ethnic minorities in the U.S., it is particularly detrimental to Black women's health outcomes and behaviors, including those related to HIV prevention.

Sexism/Gendered Racism

The American Psychological Association (2023) defines sexism as prejudicial beliefs about and discriminatory practices toward a person based on their sex or gender. Sexism is most typically studied as targeted toward women because of their subordination within the patriarchy, the dominant social system globally in which cisgender men primarily hold positions of power and privilege (Pratto, 1996). (It should be noted that this definition and conceptualization of sexism exclude sex- or gender-based discrimination against men, non-binary persons, and transgender people who also face oppressive conditions under the patriarchy.) In contrast to social psychological approaches that examine how gender norms are internalized at the individual-level or manifest in interpersonal relationships, sociologists conceptualize gender as a social

structure that manifests in interactions and power dynamics at the individual, interpersonal, and institutional levels of society (Ridgeway & Correll, 2004; Risman, 2004). Sociologists define structural sexism as systematic gender inequality in a society's institutions, power, and resources, an outcome of the patriarchy (Homan, 2019). Though structural sexism can enable interpersonal overt or perceived sexism, it goes beyond individual experiences to include macro level, gender-based hierarchy that directly and indirectly harms women's health outcomes (Homan, 2019; Homan, 2024). As with other types of structural oppression, structural sexism functions across multiple systems and institutions and serves to amplify health inequities for women (Homan, 2024).

Public health experts argue that to fully understand determinants of women's health, research must incorporate data on their social roles and economic positions (Krieger et al., 1997). Specifically, understanding why women are at risk for HIV requires situating their health within social, economic, political, and geographical inequities (Zierler & Krieger, 1997). In the context of discrimination against Black women, one cannot examine sexism without also examining racism because the two experiences are not separate (Sands, 2001). Black women "experience discrimination as Black women – not the sum of race or sex discrimination, but as Black women" (Crenshaw, 1989, p. 149). Gendered racism (Essed, 1991) is an intersectional interpretation of discrimination that attends to how sexism and racism fuse to create conditions that limit Black women's capacity to implement health-promoting strategies such as PrEP uptake to prevent HIV (Bowleg, 2025). Structural gendered racism is the intersection between White supremacy and patriarchy, wherein both an ideology and multilevel structure work to justify and reinforce the oppression of Black women due to

their race and gender (Lewis, 2023). To be specific to the history, experiences, and health needs of BHCW, and to avoid a single-axis analysis, I will discuss sexism intersectionally as gendered racism.

Beginning with slavery in the U.S., Black girls and women were legally commodified sexually and reproductively (West & Johnson, 2018), used by slaveowners to breed more slaves (Ashley, 2012; Bridgewater, 2001). They were also exploited by surgeons for gynecological experimentation, simultaneously "vital to their research yet dispensable once their bodies and labor were no longer required" (Owens, 2017, p. 3). After slavery, many Black women were subjected to forced sterilizations as part of state-sanctioned eugenic programs (Akpan, 2013; Ross, 1992; Schoen, 2005), and *de facto* discrimination against Black women in healthcare settings continued even after the Civil Rights Act of 1964 prohibited it *de jure* (Prather et al., 2018; Smith, 2005). This history of enslavers exploiting Black women's bodies for breeding and capitalistic profits is embedded in the U.S.'s current reproductive medical system (Ahmed, 2002; Howell, 2023), and it influences how Black women experience and navigate their healthcare, including seeking HIV prevention care.

Because their bodies have been historically commodified, stereotypes about Black women are unique (Harris-Perry, 2011; Hudson, 2024; Spates et al., 2020). Black women are stereotyped for being hypersexual, promiscuous, difficult, incompetent, angry, or aggressive (Cazeau & Ho, 2022; Howell, 2023; Prather et al., 2018; Rosenthal & Lobel, 2020; Spates et al., 2020). They have been depicted as welfare queens (meaning lazy, fraudulent, abusers of the social welfare system; Spates et al., 2020; Triece, 2012), a particularly ugly stereotype given that the intersection of structural racism and classism

have ensured that Black people have fewer economic opportunities and thus may be more likely to need support from social programs. These stereotypes contribute to Black women's intersectional invisibility (Purdie-Vaughns & Eibach, 2008) because, as Fiske (1993) described, "the powerless are stereotyped because no one needs to, can, or wants to be detailed and accurate about them" (p. 624). Intersectional invisibility (Purdie-Vaughns & Eibach, 2008) is a phenomenon in which the needs of a group who is multiply oppressed based on intersecting identities are ignored at least partially because their identities are considered not prototypical. Because of Whitecentrism and androcentrism respectively, the prototypical "woman" is a White woman, and the prototypical "Black person" is a Black man, and therefore Black women are rendered intersectionally invisible in society (Hudson, 2024). As will be described in detail in a subsequent section, these stereotypes and prejudices contribute to Black women's intersectional invisibility or missingness in healthcare settings, health research, and HIV prevention solutions, which serve to impede their PrEP uptake behaviors through processes such as anticipated stigma.

Black women's subjugation during slavery also shaped their gender roles in society and subsequent survival coping mechanisms. While White girls and women are typically depicted as pure, submissive, and in need of protection and adoration from men (Glick & Fiske, 2001; Glick et al., 2000), gender traits which are considered hegemonically feminine (Collins, 2004; Davis et al., 2018; Pyke & Johnson, 2003), Black girls are socialized to adopt both typically masculine and feminine gender traits, expected to be both powerful and submissive (Hill, 2002; Vance & Wade, 2021). In practice, gender role flexibility is a survival mechanism that Black women have had to employ

since slavery, taking on responsibilities both at home and at work to compensate for structural oppressions (i.e., racism and classism) that have kept Black parents unemployed or in low-wage jobs (Cole & Zucker, 2007; Collins, 2004; Davis et al., 2018; Konrad & Harris, 2002). Another coping mechanism Black women have employed to survive persistent oppression is known as the Superwoman Schema (SWS; Woods-Giscombe, 2010). The SWS is a set of learned coping behaviors wherein Black women are expected to project strength, suppress their emotions, resist vulnerability or dependency, succeed despite limited resources and structural barriers, and put others' needs before their own (Abrams et al., 2019; Allen et al., 2019). Balancing multiple stressors related to gendered racism and their dual gender roles while being strong and not seeking help from others is stressful (Spates et al., 2020), leading to Black women's increased risk of adverse health outcomes including infant and maternal morbidity and mortality, cancer mortality (DeSantis et al., 2016), uterine fibroid progression and symptom severity (Dye et al., 2024; Zota et al., 2022), hypertension, high blood pressure, mental health issues (Jerald et al., 2017; Williams & Williams-Morris, 2000), and adverse health behaviors such as lack of PrEP uptake (Knight et al., 2024; Nydegger at al., 2021).

There is a plethora of examples of structural sexism in the U.S. today, including related to labor, healthcare, and sexual violence, that perpetuate gender health inequities (Krieger, 2023), all of which are exacerbated for Black women because of the intersection of gendered racism and classism. Closures during the COVID-19 pandemic pushed millions of women out of the American workforce to focus on unpaid child and family caregiving, an expectation seeded in traditional gender norms that perpetuates gendered economic oppression (Kisner, 2021) and propagates women's socially

constructed vulnerability (Foster & Foster-Palmer, 2023). The losses, however, did not equally harm all women: they were greatest among Black women who were more likely to be working in sectors hit hardest by the pandemic closures such as hospitality and education (Coyle, 2021). Black women also faced additional barriers to re-employment including family caregiving responsibilities, health issues, high competition for minimum wage jobs, and difficulty finding re-employment regardless of their education level (Long & Van Dam, 2021). For White women still working today, their pay is on average only 83% of White men's pay, while Black and Hispanic women earn 70% and 65%, respectively (Kochhar, 2023). COVID-19 spotlighted how the intersection of structural oppressions (i.e., gendered racism and classism) continues to extract social reproductive (unpaid) labor from Black women and keep them unemployed or in unstable and low-wage jobs. COVID-19 also amplified gendered racialized wealth inequities (Foster & Foster-Palmer, 2023), which adversely impacts Black women's health by leaving fewer resources (e.g., money, time) for preventative healthcare such as related to HIV.

Legal restrictions to reproductive healthcare are another example of how structural gendered racism and classism intersect to exacerbate health inequities for Black women, particularly those of low-income. In 1976, the U.S. Congress passed the Hyde Amendment, an annual appropriations measure that intentionally discriminates against low-income women by prohibiting federal funding for abortion care (except in cases of rape or incest) through Medicaid, the federal health insurance program for people of low-income (Arons & Rosenthal, 2013; Baden et al., 2024; Salganicoff et al., 2024). Over time, this ban has been extended to other federal programs that provide reproductive health services including the Federal Employees Health Benefits Program, the military's

TRICARE program, the Peace Corps, federal prisons, the Indian Health Service, Medicare, and the Children's Health Insurance Program (Salganicoff et al., 2024). In 2022, the U.S. Supreme Court's decision in *Dobbs v. Jackson Women's Health Organization* eliminated women's constitutional right to bodily autonomy by relegating abortion authority to state legislatures (Pew Research Center, 2022). In many U.S. states, this legal shift has resulted in forced pregnancies, reduced access to reproductive clinics and emergency obstetric care, increased barriers to contraceptive care, fewer maternity care providers, higher risk for maternal and infant mortality, and worsening mental health among women, all of which disproportionately harm poor women of color (Baden et al., 2024). Most of the 13 states that have fully banned or severely restricted abortion since *Dobbs* no longer have exceptions for rape or incest (Salganicoff et al., 2024). Without insurance coverage, women must either pay out-of-pocket or travel to another state for abortion care, creating financial and logistical barriers that are often impossible for low-income women to overcome (Salganicoff et al., 2024). When women cannot control when or whether they have children, they lack control over their economic opportunities and outcomes (Bahn et al., 2017), which impacts their ability to attend to other aspects of their health, including HIV prevention.

Sexual violence against women is another example of how structural gendered racism and classism intersect to amplify health inequities for Black women. In a nationally representative survey, 81% of women reported experiencing sexual harassment and/or assault in their lifetime (Stop Street Harassment, 2018). Black women are disproportionately harmed by sexual violence, as 41% of Black women have experienced sexual coercion or unwanted sexual contact and 1 in 5 have survived rape (National

Black Women's Justice Institute, 2023). Two studies (Kearns et al., 2020; Willie & Kershaw, 2019) with nationally representative samples examined indicators of sexual violence against women with state-level gender inequality dimensions related to reproductive health (maternal mortality and adolescent birth rates) and empowerment (proportions of female-to-male educational attainment and legislature seats). They found that U.S. states with higher gender inequality had higher prevalence of intimate partner violence (IPV; Willie & Kershaw, 2019) and completed or attempted rape using physical force (Kearns et al., 2020). IPV not only places women at higher risk for HIV, but it also limits a woman's power in heterosexual relationships which can hinder her PrEP uptake opportunities by impeding her access to the money or medical visits required to get a prescription (Flash et al., 2017). Further, as Black women are already stereotyped for being promiscuous, hypersexual, and "unrapeable" (Tillman et al., 2010) and socialized to resist vulnerability and suppress their needs (Woods-Giscombe, 2010), they may be less inclined to seek sexual health care after experiencing sexual violence (Long & Ullman, 2013; Ullman & Lorenz, 2020), thus thwarting their HIV prevention behaviors.

In a recent national study, researchers examined the link between state level structural sexism and participants' use of preventative care including for HIV (Dore et al., 2024). Dore and colleagues (2024) measured structural sexism with a composite score of political (percentage of state legislature seats occupied by men), economic (ratios of men's to women's labor force participation rates, poverty rates, and median weekly earnings), cultural (percentage of state population composed of religious conservatives), and physical/reproductive (access to reproductive healthcare) factors. They found that women who lived in U.S. states with more structural sexism were less likely to use

preventative services and get tested for HIV compared to those in states with less structural sexism (Dore et al., 2024). Another study found that among Black women, higher structural sexism at the state level was linked to more affordability and availability barriers to accessing healthcare generally (Rapp et al., 2021). These data indicate that structural sexism can adversely impact health prevention behaviors, and that these effects are particularly detrimental for Black women due to gendered racism.

Theoretical Framework: Structural Intersectionality

As described in sections above, Black women are disproportionately harmed by structural discrimination in part because they face multiple oppressions simultaneously and the experience of one type cannot be separated from another (Bowleg, 2008; Collins, 1995; Cuadraz & Uttal, 1999). Crenshaw (1989) notes that "the intersectional experience is greater than the sum of racism and sexism" (p. 140), and thus it is their multiplicative influence that forms systems of disadvantage for BHCW and harms their health outcomes. Structural racism, classism, and sexism are each central components of the social system (Bonilla-Silva, 1997). Yet, to understand fully how structural determinants impact BHCW's HIV prevention-related behaviors such as PrEP uptake, researchers must look beyond a single structural determinant or system of oppression (e.g., racism *or* classism *or* sexism) and examine their interlocking influence (Bowleg, 2012; Earnshaw et al., 2022; Muno et al., 2024). Further, analyses of BHCW's health inequities must be situated within the context of the unequal power relations and structures that perpetuate their oppression (Bowleg, 2008; Collins, 1995; Weber & Parra-Medina, 2003).

Building upon intersectionality (Collins, 1991; Combahee River Collective, 1977; Crenshaw, 1991) and the literature of Black feminists including Francis Beale (1970),

bell hooks (1981), Angela Davis (1983), and Beverly Greene (1995), Crenshaw (1989), a critical legal scholar, conceptualized structural intersectionality as how legal, political, and cultural institutions and norms combine to create systems of oppression for Black women. Public health researchers have developed this concept into a theoretical framework that aims to measure multiple structural determinants simultaneously and assess how they influence the health of individuals at different intersectional sociodemographic positions (Homan et al., 2021).

Structural intersectionality, as an intersectionality-informed empirical research approach, provides guidance for researchers to utilize multilevel measures to analyze how multiple structural forms of power and oppression together drive health inequities beyond what is individually perceivable (Zubizarreta & Beccia, 2025). Following the structural intersectionality framework, Homan and colleagues (2021) analyzed state level measures of structural racism, income inequality, and sexism with individual health data to assess how multiple systems of oppression intersectionally influence population health in the U.S. They found that structural inequities jointly and adversely impacted the self-rated health of all participants in the national sample, but that they most harmed the health of Black women (Homan et al., 2021), demonstrating the multiplicative effects of intersecting structural oppressions on Black women's health outcomes. Another quantitative study guided by the structural intersectionality framework found that people living in states with high structural racism, income inequality, and sexism had increased odds of edentulism (i.e., tooth loss), demonstrating how macro level conditions may affect individual health outcomes (Bastos et al., 2023). Rapp and colleagues' (2021) quantitative study, also guided by an intersectional perspective, examined the effects of

structural sexism on women's access to healthcare and found that for Black and Hispanic women—but not non-Hispanic White women—higher state level sexism exposure was associated with increased barriers to accessing healthcare. The authors posit that this racial/ethnic inequity is likely due to the intersecting and multiple forms of oppression that perpetuate social and economic disenfranchisement of Black and Hispanic women and, in turn, hinder their healthcare access (Rapp et al., 2021).

Using a latent profile analysis, Riley and colleagues' (2024) examined the association between preterm birth and state level structural gendered racism with social and economic inequity indicators including college education, service industry employment, income/poverty, homeownership, health insurance, residential segregation, voting, political representation, and incarceration. They found that across 4 state level latent classes, due to structural gendered racism, Black women faced higher levels of disadvantage compared to White men, that they had higher risk of preterm birth compared to White women, and that this risk varied more among Black women compared to White women (Riley et al., 2024). Relatedly, using a gendered racism lens to examine the relationship between state level support for reproductive rights and maternal mortality, Patterson and colleagues (2022) found that Black women residing in U.S. states with higher levels of support for reproductive rights had higher maternal mortality and associated risk factor rates compared to White women in states with high, moderate, and low levels of support. In two quantitative studies (Everett et al., 2022; Everett et al., 2024), researchers created a composite measure of structural heteropatriarchy, or the intersection between structural sexism and discrimination against lesbian, gay, and bisexual (LGB) people, with area-based inequity indicators including those related to

income, unemployment, abortion policies, and LGB-related policies. They found that, among majority White participants, higher levels of structural heteropatriarchy were associated with an increased risk of preterm birth and decreased birth weight (Everett et al., 2022) and with an increased risk of reported maternal morbidities (Everett et al., 2024).

These data provide insight into how different types of structural discrimination (e.g., racism, classism, sexism, gendered racism, heteropatriarchy) can intersect to amplify health inequities and outcomes for multiply oppressed individuals. Across studies (Homan et al., 2021; Patterson et al., 2022; Rapp et al., 2021; Riley et al., 2024), intersectional structural discrimination generated the worst health outcomes and adverse behaviors for Black women. A structural intersectionality perspective can help explain why the HIV epidemic persists for historically oppressed groups but not others (Bowleg, 2020). Specifically, in this dissertation, I draw upon the body of work based on this theoretical framework to demonstrate how three structural determinants (i.e., racism, classism, sexism) intersect to impede BHCW's PrEP uptake.

Applying Structural Intersectionality to BHCW's PrEP Uptake

As described through the empirical research above, perceived HIV risk and anticipated PrEP stigma are psychosocial determinants that adversely influence BHCW's ability to engage in HIV prevention strategies such as PrEP uptake, which in turn amplifies their HIV risk. From a structural intersectionality perspective however, sole focus on the individual level ignores the broader context in which BHCW live and the institutional barriers, including discrimination from HCPs and impoverished neighborhood conditions, that may impede their ability to prevent HIV. Applying a

structural intersectionality lens can shed light on how antecedent intersectional structural determinants (i.e., racism, classism, and sexism) impact BHCW's PrEP uptake above and beyond individual psychosocial factors.

Anticipated PrEP Stigma

Empirical research described in a previous section illustrates how anticipated HIV or PrEP stigma can be a psychosocial barrier to PrEP uptake for BHCW (Calabrese et al., 2018; Irie et al., 2024; Knight et al., 2024; Scott et al., 2022). Experts argue that the co-occurrence of racism, classism, sexism and other structural inequities can exacerbate barriers to uptake such as PrEP stigma (Mayer et al., 2020) and that though stigma is typically understood as an individual cognitive process, it must be examined with the social and structural determinants that produce it (Pantelic et al., 2019). Although in this dissertation I will explore the influence of anticipated stigma on BHCW's PrEP uptake as a psychosocial variable, applying a structural intersectionality lens requires examination of the how intersectional structural discrimination generates the conditions in which BHCW may anticipate the PrEP stigma that in turn hinders their access to, seeking, or uptake of the medication.

Structural gendered racism can make Black women intersectionally invisible in healthcare settings wherein their health needs are ignored by healthcare staff including by HCPs (Bond et al., 2021). Empirical data shows that HCPs tend to disregard Black women's pain (Thorpe et al., 2022), dismiss or ignore their health concerns while providing inadequate health information (Howell, 2023; Malekzadeh et al., 2025; VanNoy et al., 2021), undertreat them compared to non-Black women (Hoffman et al., 2016), and recommend invasive treatments when more mild options are available

(Callegari et al., 2019; Kjerulff et al., 1993; Malekzadeh et al., 2025). In one interview study with 12 middle-class Black women, participants felt they embodied the haunting experiences of historical gendered racism in gynecology, which produced stress and feelings of vulnerability when they anticipated or experienced discrimination from HCPs in sexual and reproductive healthcare settings (Howell, 2023). Howell (2023) also found that participants' middle-class status and access to resources, such as having the ability to seek alternative HCPs, did not fully buffer the adverse effects of gendered racism. These findings indicate how structural gendered racism can harm patient-provider interactions, even when BHCW have access to resources that are health protective for their White counterparts.

Given that PrEP requires a prescription and regular follow-up appointments, HCPs are a mandatory route to access the medication, and thus their discriminatory behavior can be pivotal in amplifying BHCW's HIV inequities (Hull et al., 2021). For example, in a qualitative study with Black women living in low-income housing communities in the U.S. South, participants reported multiple ways that structural discrimination based on their race, gender, and class hindered their ability to access HIV prevention care (Randolph et al., 2020). These included poor interactions with their HCPs where participants felt judged and discriminated against *because* they were Black, women, and low-income, which in turn exacerbated their existing mistrust of providers and medical institutions (Randolph et al., 2020). A recent qualitative study applied structural intersectionality to examine healthcare access among Black women living with HIV and found that patients perceived that HCPs were stigmatizing and discriminatory because of the combination of the participants' HIV status, race, class, and gender. This in

turn further increased their medical mistrust and disengagement in care (Small et al., 2023). Analyses of qualitative data from BHCW reveal that BHCW's distrust of and anticipated stigma from their HCPs— stemming from the historical and ongoing pattern of gendered racism towards BHCW in healthcare settings— are critical hindrances to their PrEP uptake (Knight et al., 2024), the outcome of interest in this dissertation.

Anticipated PrEP stigma can also extend to expecting disapproval or rejection from people in one's social network such as friends, family, and sexual partners (Bond et al., 2021), including for taking a medication that is affiliated with HIV or being stereotyped as promiscuous or unfaithful to their partners (Bradley et al., 2018; Chittamuru et al., 2020). In one qualitative study with majority BHCW, participants reported that while they feared judgement and harsh treatment from their HCPs when discussing sexual health matters, they also had concerns of stigmatization from close others if they were to take a medication associated with HIV, for example fearing that taking PrEP would signal to their male partners a lack of trust or infidelity (Goparaju et al., 2017). Similarly, BHCW in a focus group study shared that their distrust of the healthcare system and HCPs as well as anticipation of stigmatization from others who may assume they had HIV led to their reduced willingness to use PrEP (Bond et al., 2021). A cross-sectional study with 40% Black women found that anticipated PrEP disapproval from close others was negatively associated with interest in using PrEP (Calabrese et al., 2018), a finding that was echoed in a similar study with BHCW (Irie et al., 2024). These data suggest that anticipated stigma does not occur in a vacuum and thus it must be contextualized to include broader antecedent structural determinants. In my

dissertation I will therefore go beyond the individual level and employ a multilevel approach to assess the influence of PrEP stigma on BHCW's PrEP uptake.

Perceived HIV Risk

In empirical research delineated in a section above, researchers found low HIV risk perceptions among cohorts of BHCW despite their high actual risk (Frew et al., 2016; Hill et al., 2021; Scott et al., 2021; Willie et al., 2022; Younge et al., 2010), and findings from Hallfors and colleagues' (2007) study indicates that among Black participants, high HIV risk cannot be attributed to more risky sexual behavior compared to White participants. From a structural intersectionality perspective, there are several possible explanations for why BHCW have low HIV risk perceptions, which in turn can impede their health protective behaviors such as PrEP uptake. In this dissertation, though I will examine BHCW's perceived HIV risk as a psychosocial barrier to their PrEP uptake, it is critical to understand the structural context that may shape these risk perceptions.

One explanation for BHCW's low HIV risk perceptions may be that they do not receive information about their HIV risk or about PrEP from their HCPs. In three focus group studies with majority Black women for example, participants stated that their HCPs had not told them about PrEP, a problem that researchers concluded contributed to the participants' low perceived HIV risk (Auerbach et al., 2015; Bond et al., 2021; Hirschhorn et al., 2020). BHCW residing in Mississippi reported in focus groups that they were not receiving enough information from their providers about PrEP including about the medication's effectiveness, cost, and how long it needs to be taken (Willie et al., 2022). One BHCW in Chicago expressed in an interview that she felt HCPs were

hiding information about PrEP from her because she is from a low-income community (Hirschhorn et al., 2020), suggesting that the informational gap may be due to classism. One experiment with 160 HCPs found that those who scored high on a modern racism scale had lower willingness to discuss PrEP or prescribe it to their BHCW patients and that this willingness was mediated by racially biased assumptions that Black women would be unable to adhere to PrEP as compared to White women (Hull et al., 2021). Though the study only tested a racism measure, the authors argue that an intersectional lens is critical because BHCW face multiple and overlapping barriers related to discrimination (e.g., gendered racism) that influence how HCPs interact with BHCW and the information HCPs choose to share, which play a vital role in shaping HIV prevention inequities (Hull et al., 2021).

A second possible explanation for BHCW's low HIV risk perceptions is that they may not know that they *should* prioritize PrEP uptake due to a lack of PrEP information and advertising specifically focused on BHCW. HIV prevention messaging has been criticized for having a White middle-class bias (Bowleg, 2012) and for ignoring how racism and poverty constrain the HIV prevention behaviors of Black Americans who are at high HIV risk (Cochran & Mays, 1993). Clinical guidelines for discussing PrEP with patients have largely focused on men, excluding cisgender women and more specifically BHCW, helping to amplify HIV inequities (Calabrese et al., 2019; Irie & Blackstock, 2024). In a qualitative study with 68 women (69% of whom were Black) living in areas characterized by high poverty including in D.C. for example, participants cited lack of access to quality health information and education as a key structural determinant that

diminished their ability to engage in HIV prevention behaviors such as condom use and HIV testing (Blackstock et al., 2015).

In two studies with Black women living in low-income housing in the U.S. South, participants shared that they had not received HIV risk information (Randolph et al., 2020) and a mere 37% of participants knew about PrEP while only 16% were aware that is an HIV prevention medication (Hill et al., 2021). BHCW in a qualitative study in New York City voiced anger about the paucity of PrEP marketing for Black women specifically, and many perceived PrEP to be for MSM (Bond et al., 2021). In two qualitative studies, 37 BHCW in Mississippi shared that they had seen PrEP advertised but did not know whether they were eligible for it (Willie et al., 2022), and 15 BHCW in Georgia said they thought PrEP was only for gay men (Chandler et al., 2022). BHCW in focus groups in Chicago reported that the PrEP campaigns they had seen seemed to target only men (Hirschhorn et al., 2020), a problem that was echoed in interviews with majority Black criminal justice-involved women in California (Dauria et al., 2021). One BHCW in New York City reported in an interview that she could not get a prescription because her HCP thought that PrEP was for gay men and not safe for breastfeeding women (Park et al., 2019), demonstrating that even medical experts may be ignorant about PrEP's benefits for BHCW.

A third possible explanation for BHCW's low HIV risk perceptions and subsequent lack of PrEP uptake has little to do with HIV or risk perceptions. Rather, it pertains to power, particularly power over resources and social role obligations. The bases of gendered power (Pratto & Walker, 2004) is a theoretical model that describes how gender, as a social construct, is used by men within the patriarchy to hold power

over women. It argues that power is a dynamic relationship that is wielded by men through force, resource control, ideological advantage and asymmetrical obligations to maintain the oppression of women (Pratto & Walker, 2004). Importantly, the model highlights that gender inequality is dynamically related to other forms of group-based inequality, such as those based on race/ethnicity and class (Pratto & Walker, 2004). Because of structural sexism and traditional gender roles, women have less control over resources which can leave them economically dependent upon men and/or limit their economic opportunities (Pratto & Walker, 2004; Rosenthal & Levy, 2010). They are also socialized and expected to place others' needs ahead of their own, including by prioritizing their caregiving responsibilities over their health concerns (Pratto & Walker, 2004; Rosenthal & Levy, 2010).

I argue that the gendered bases of power can be integrated with structural intersectionality to shed light on why BHCW with fewer resources may lack the ability to prioritize HIV prevention. Specifically, structural gendered racism limits BHCW's economic opportunities so that even if they do learn about PrEP from their HCPs or through advertising, many cannot choose PrEP over more acute risks to the health and safety of their families. Empirical data supports this, showing that for some BHCW, particularly those of low-income, even if they are aware of their HIV risk, they may not have the means to reduce it (Mays & Cochran, 1988; Ramos et al., 1995). Survival in the face of financial strain is inevitably their top priority, not HIV prevention (Blackstock et al., 2015; Nydegger et al., 2021). In a large qualitative study conducted across several U.S. sites including D.C., researchers found that financial insecurity was a primary driver of HIV risk among a large cohort of majority Black women, as their priorities were food

and housing security for their families (Frew et al., 2016), the most basic of human needs. BHCW have reported that basic needs such as caregiving duties, rigid work schedules, contraception, and primary healthcare take precedence over HIV prevention (Bond et al., 2021; Flash et al., 2017).

In a qualitative individual interview study examining structural and syndemic barriers to PrEP adoption, 30 BHCW cited poverty as both a direct and indirect barrier to PrEP uptake: PrEP was a low priority given their limited financial resources, and getting a prescription for PrEP requires attending multiple and regular clinic appointments which can be time consuming and difficult, particularly when women are looking after young children (Nydegger et al., 2021). For Black women living in low-income housing in the U.S. South, accessing sexual health services required overcoming multiple structural obstacles related to access to finances, health insurance, transportation, and childcare (Hill et al., 2021; Jones et al., 2018). Structural poverty and its intersections impede PrEP uptake for BHCW by creating conflicting priorities including caregiving and employment responsibilities, scheduling difficulties for health appointments, housing instability, transportation, and healthcare and insurance access (Boudreaux et al., 2025; Chandler et al., 2022; Park et al., 2019; Randolph et al., 2020). These data demonstrate that BHCW's low perceived HIV risk is influenced by numerous structural factors. A structural intersectionality lens helps situate this individual level psychosocial variable within the multilevel context in which it occurs.

Neighborhood Poverty

Examining neighborhood poverty through a structural intersectionality lens elucidates the unique strain that impoverished living conditions can place on BHCW

living in low-income communities and the collateral consequences it can have on their HIV and other health outcomes. In an analytic review, Riley (2020) argued that fundamental causes of health inequities must be framed within the context of dynamic systems of exposures and resource distribution such as within one's neighborhood because, as Latkin and colleagues (2013) posit, "HIV-related behaviors are geographically clustered" (p. 1). Structural racism and classism—vestiges of slavery—create disadvantaged neighborhood conditions including poverty, unemployment, and inadequate and unstable housing that in turn increase HIV risk for BHCW who live in low-income communities by facilitating or restricting health behaviors (Adimora et al., 2006; Brawer et al., 2022; Dickson-Gomez et al., 2017; Hill et al., 2021; Nydegger et al., 2017; Taggart et al., 2022). Hill and colleagues (2021) argue that structural determinants place Black women living in low-income communities at greater risk for HIV than do individual behavioral determinants. Particularly among women, sexual behaviors are not necessarily fully under one's control but rather are influenced by multiple environmental and contextual factors (Amaro, 1995; Logan et al., 2002).

For example, in a focus group study with BHCW, participants shared that regardless of their individual HIV prevention behaviors, their health outcomes were out of their control because of structural challenges such as living in a poor neighborhood environment where there is poorer access to quality healthcare and health promotive resources (Lewandowski et al., 2011). Findings from a large qualitative study across multiple cities including D.C. demonstrated that community violence and poor housing conditions, including those that are structurally deteriorating, unsafe, and unsanitary, were key structural determinants of increased HIV risk among cohorts of low-income

BHCW (Frew et al., 2016). Similar to individual level poverty, managing the stressors associated with living in an impoverished or precarious environment can constrain BHCW's mental resources and diminish their mental and physical health (Frew et al., 2016). As explained with the empirical literature in the section above, when BHCW's mental and financial resources are strained, HIV prevention practices such as PrEP uptake necessarily become deprioritized (Blackstock et al., 2015; Boudreaux et al., 2025; Nydegger et al., 2021). Women may also be more willing to engage in sexual behaviors that may be considered high risk to feel connected with others as a way of coping with stressors, such as those related to living in an impoverished neighborhood (Logan et al., 2002).

Additionally, racial residential segregation clusters Black people into neighborhoods with higher HIV prevalence (Brawner et al., 2017; Burns et al., 2021; Latkin et al., 2013). Living in close proximity to others, one feature of residential segregation, can increase BHCW's risk of acquiring HIV through increased likelihood of risky sexual encounters (Blackstock et al., 2015; Hallfors et al., 2007). Racially segregated communities limit BHCW's sexual networks, increasing their chances of choosing Black male sexual partners who are living in places with heightened HIV exposure, which consequently increases their HIV risk (Adimora et al., 2006; Aholou et al., 2016). In a cross-sectional study with 526 heterosexual Black men in Philadelphia, researchers found direct links between participants' reports of negative neighborhood contexts (measured with items related to neighborhood disorder and exposure to violence) and increased sexual HIV risk behaviors (i.e., lack of condom use during vaginal sex; Bowleg et al., 2014). The authors emphasized that managing the structural

stressors of challenging neighborhood environments (e.g., poverty and safety) may make HIV prevention a low priority for their participants, and that though risky sexual activity can increase their HIV risk, it may be one way for them to cope with living in a difficult context (Bowleg et al., 2014). Neighborhood poverty and racial residential segregation also intersect with the hyperincarceration of Black men to exacerbate HIV risk for BHCW (Boudreaux et al., 2025; Ojikutu et al., 2018). Incarceration limits employment options such that Black men often return to the same neighborhoods they previously lived that have heightened HIV prevalence (Blankenship et al., 2023; Bowleg et al., 2014), creating a "revolving door" between prison and the community that increases the HIV risk of their entire sexual network, particularly their female partners (Adimora et al., 2006; Harawa & Adimora, 2008; HHS, 2024b).

Further, the hyperincarceration of Black men yields a low male-to-female sex ratio in Black communities (Aholou et al., 2016, Adimora & Schoenbach, 2013; Sidanius & Pratto, 1999). This numerical imbalance is hypothesized to heighten BHCW's HIV vulnerability by increasing their exposure to sexual networks with higher rates of HIV (Boudreaux et al., 2025; Frew et al., 2016). Paired with traditional gender roles and sexual norms, a gender imbalance in Black communities diminishes BHCW's power in heterosexual relationships and decreases their ability to negotiate safe sex practices with their male partners, such as using condoms to prevent HIV (Brawner et al., 2022; Bowleg et al., 2000; Bowleg et al., 2014; Caldwell & Mathews, 2015; Wendlandt et al., 2016). Neighborhood poverty can exacerbate the HIV risk-related consequences of gendered power dynamics for BHCW (Bradley et al., 2018) and economic insecurity may increase Black women's vulnerability to HIV by reducing their power in sexual relationships

(Chatterjee et al., 2006). One qualitative study with focus groups and individual interviews found that higher individual socioeconomic status did not fully protect a cohort of 23 middle-income BHCW from HIV risk (Caldwell & Matthews, 2015), suggesting that the intersection of structural gendered racism and classism may be more influential on BHCW's HIV risk than are individual level determinants. Together these studies' findings emphasize that neighborhood poverty, an influential intersectional structural determinant, must be considered when examining HIV risk and prevention behaviors among BHCW.

Research Gaps and Questions

As illustrated through the literature in the previous section, structural factors including neighborhood poverty influence BHCW's PrEP uptake behaviors, and this can be mediated by individual level psychosocial determinants such as anticipated PrEP stigma and perceived HIV risk. Similarly, structural determinants of HIV have been examined among Black MSM (Burns et al., 2021; Maulsby et al., 2014; Millet et al., 2006) and experts argue that their vulnerability to HIV is heightened when they live in geographic areas "characterized by violence, poverty, unemployment, social disorder, and lower social capital and social cohesion" (Taggart et al., 2022, p. S37). For example, Burns and colleagues (2021) used multilevel structural equation modeling to examine the influence of individual (i.e., age, income, social support, education, incarceration, housing insecurity, insurance, number of sexual partners, and healthcare access) and structural (i.e., zip code median household income as a representation of zip code poverty or neighborhood disadvantage) determinants on PrEP use among Black MSM in the Deep South. They found that neighborhood poverty was associated with decreased PrEP use

above and beyond individual level factors (Burns et al., 2021). As one of the few studies that examined the underlying structural mechanisms that promote or dissuade PrEP utilization among people living in low-income urban neighborhoods, the authors argue that these mechanisms are understudied (Burns et al., 2021).

Relatedly, one systematic review (Brawner et al., 2022) assessed 55 empirical studies between 2007 and 2017 on the relationships between neighborhood level factors and HIV vulnerability and found no studies that examined the effects of neighborhood disadvantage on PrEP uptake for any population. Brawner and colleagues (2022) posit that the empirical links between neighborhood disadvantage and HIV risk outcomes, as well as their mediating pathways, are undertested. Their review additionally found that most existing HIV prevention studies rely on similar ecology-oriented theoretical approaches that lack attendance to intersectionality (Brawner et al., 2022). Further, there is a dearth of studies on the influence of neighborhood poverty on PrEP uptake among BHCW. One study with majority Black women living with HIV in U.S. cities including D.C. found that neighborhood median income was positively associated with internalized HIV stigma and perceived HIV discrimination (Crockett et al., 2019). Yet to my knowledge, the link between these variables has not been examined among HIV-negative BHCW, nor whether anticipated stigma and perceived HIV risk serve as mediators between neighborhood poverty and PrEP uptake. These are critical empirical gaps given the data shows that BHCW's health outcomes are adversely affected by structural intersectional discrimination (Homan et al., 2021), given the high HIV incidence rate among BHCW in the DMV area, and given that the D.C. neighborhoods with the highest poverty rates also have the highest HIV prevalence rates (AIDSVu, 2021). In this

dissertation, I aim to fill these gaps by examining the multilevel determinants and mediating pathways that influence PrEP uptake among BHCW.

This dissertation is guided by the structural intersectionality theoretical framework and the following research questions: 1) To what extent do individual level psychosocial determinants (perceived HIV risk, anticipated PrEP stigma) influence BHCW's PrEP uptake? 2) To what extent does an intersectional structural level determinant (neighborhood poverty) affect individual perceived HIV risk and anticipated PrEP stigma? 3) To what extent does neighborhood poverty have a direct effect on BHCW's PrEP uptake above and beyond the individual level psychosocial determinants? 4) To what extent do perceived HIV risk and anticipated PrEP stigma mediate the relationship between neighborhood poverty and BHCW's PrEP uptake?

Hypotheses

My hypotheses for this dissertation are:

H1: Individual level perceived HIV risk will have a direct effect on BHCW's PrEP uptake interest such that lower perceived HIV risk will be associated with lower PrEP uptake interest.

H2: Individual level anticipated PrEP stigma will have a direct effect on BHCW's PrEP uptake interest such that greater anticipated stigma will be associated with lower PrEP uptake interest.

H3: Neighborhood level poverty will have a direct effect on BHCW's individual level PrEP uptake interest such that higher levels of neighborhood poverty will be associated with lower PrEP uptake interest.

H4: Neighborhood level poverty will have a direct effect on BHCW's perceived HIV risk such that higher levels of neighborhood poverty will be associated with lower perceived HIV risk.

H5: Neighborhood level poverty will have a direct effect on BHCW's anticipated PrEP stigma such that higher levels of neighborhood poverty will be associated with greater anticipated PrEP stigma.

H6: BHCW's individual level perceived HIV risk will mediate the relationship between neighborhood level poverty and individual level PrEP uptake interest.

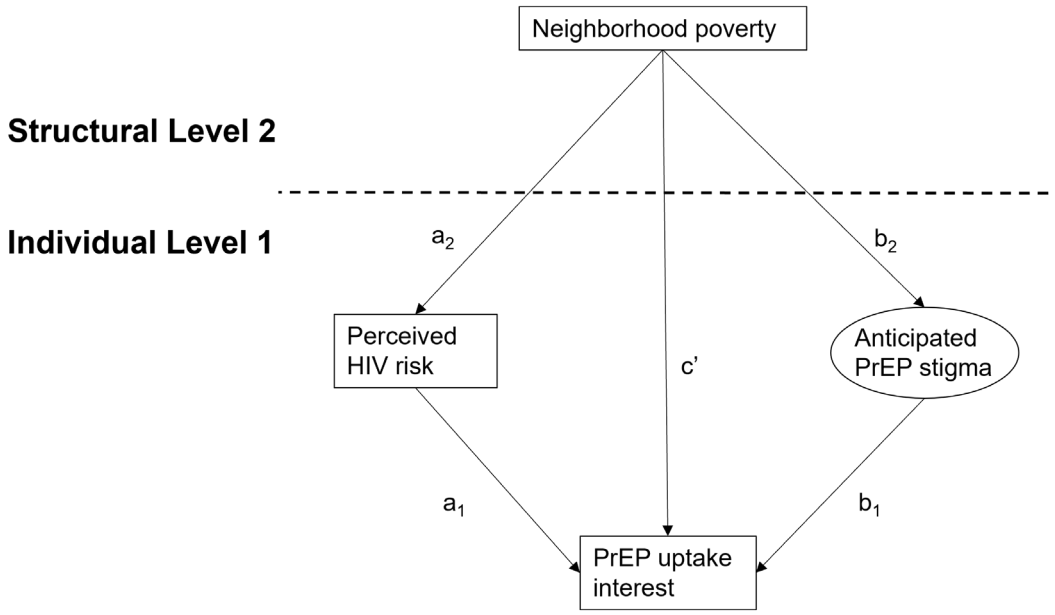
H7: BHCW's individual level anticipated PrEP stigma will mediate the relationship between neighborhood level poverty and individual level PrEP uptake interest.

Conceptual Model

Informed by the structural intersectionality theoretical framework and Burns and colleagues' (2021) methods, I used the following multilevel conceptual model (Figure 1) as a guide to examine how neighborhood poverty (Level 2) influences BHCW's PrEP uptake interest (Level 1) and the mediating effects of perceived HIV risk and anticipated PrEP stigma (Level 1).

Figure 1.

Multilevel Conceptual Model: Influence of Structural Level Neighborhood Poverty on Individual Level Psychosocial Determinants for BHCW



Chapter 3: Method

Parent Study Procedures

This dissertation is based on secondary data analyses of quantitative data from *The Preferences of Women Regarding Long-Acting PrEP Outside Trial Settings* (*PrEP Preferences*) study [RDP217564; PI: Kerrigan]. The *PrEP Preferences* study was conducted in 2023 in a MedStar Health reproductive health clinic in D.C. and was supported by ViiV Healthcare. The purpose of the parent study was to understand the perspectives on and preferences for oral and injectable PrEP among cisgender women who can benefit from PrEP including BHCW and among HCPs. Investigators first conducted in-depth individual interviews with 20 BHCW who could benefit from PrEP and 10 HCPs to characterize perspectives and experiences regarding oral and injectable PrEP options. Based on the interview findings, investigators then conducted a quantitative survey with a larger sample of women to examine specific attributes such as convenience, side effects, and stigma that may serve as facilitators or barriers to PrEP uptake. Preliminary examination of the data and participant sociodemographics shows that these data are well-suited to examine this dissertation's research questions.

Participants were recruited through D.C. family planning, women's health, and HIV/STI clinics. Participants completed the self-administered survey on tablets at the study sites. Data were stored in secure, password-protected electronic files accessible only to the research team based on their role and deleted from the tablets after database storage. All research team members were trained in human participant research protections and all the data collected were anonymous or deidentified. All study

procedures for the *PrEP Preferences* study were approved by The George Washington University Institutional Review Board.

Participant Eligibility

Among the 277 adult women who participated in the parent study's survey assessment, 240 met the eligibility criteria for this dissertation. Eligibility criteria were adult, Black, cisgender women who live in the DMV metropolitan area and identify as heterosexual, bisexual, or pansexual (i.e., have heterosexual exposure to HIV). Participants lived across 39 zip codes in the DMV region. Although participants' individual household income was collected, these data are omitted from analyses as the parent study researchers noted that the question was not written clearly which resulted in inaccurate data.

Measures

Structural

The primary predictor is neighborhood poverty, a structural variable that was measured by zip code median household income in 2023 (the year the survey was conducted; Census Reporter, 2023). Though zip codes are imperfect approximations of neighborhoods because they encompass large geographic areas with sociodemographically heterogenous populations (Krieger et al., 1997), their use is common in research on neighborhood effects on health (Riley, 2018). Among the DMV zip codes in which participants lived, the median household income ranged from $48,146 (lowest) to $179,107 (highest; Census Reporter, 2023).

Psychosocial

Two individual level psychosocial items were assessed: perceived HIV risk and anticipated PrEP stigma. Perceived HIV risk was examined with the item: "What do you think the chances are that you will ever get HIV?" Response options were on a 4-point Likert-type scale ranging from 1 (*very likely*) to 4 (*impossible*). The item was reverse coded with a higher score indicating greater perceived risk. Anticipated PrEP stigma was examined with a 7-item scale. Example items include "If I use PrEP, I'd worry about people discriminating against me" and "I would feel ashamed of using PrEP." Response options were on a 4-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*), with a higher score reflecting greater anticipated PrEP stigma.

Behavioral

Individual level PrEP uptake interest was assessed with the item: "Would you be interested in using some form of PrEP to help prevent HIV?" Response options were on a 5-point Likert-type scale ranging from 1 (*definitely no*) to 5 (*definitely yes*), with a higher score indicating greater interest in using PrEP in the future. At the start of the survey, participants were provided with basic information about PrEP including that it is an HIV prevention medication and descriptions of its available oral and injectable forms.

Covariates

Participants' age in years was included as a continuous covariate. Previous PrEP use (i.e., "In the last 6 months, have you used PrEP?") was also controlled for, with response options dichotomized as 1 (*yes*) or 0 (*no*).

Data Cleaning and Preparation

Prior to analyses, I inspected the dataset for duplicate entries, invalid zip codes, out-of-range values, and coding inconsistencies. Zip codes were cross-checked against the United States Postal Service (USPS) directory. Seven participants were excluded from analyses because they reported non-residential zip codes, resided outside the DMV area, or provided invalid zip codes (e.g., entries with fewer than five digits), and thus they did not meet the eligibility criteria for this dissertation. No duplicate cases, out-of-range responses, or other data entry errors were identified. The cleaned dataset was used for all analyses.

Software

Data cleaning and preliminary descriptive analyses were conducted in SPSS (version 31). Multilevel structural equation modeling (MSEM) and structural equation modeling (SEM) were conducted using Mplus Base Program with Mixture and Multilevel Add-Ons (version 8).

Data Analysis Approach

Missing Data Handling

Missing data were evaluated prior to model estimation in SPSS. Missingness was assessed using descriptive frequencies and cross-tabulations with sociodemographic and structural variables (age, previous PrEP use, zip code). All covariate and predictor variables (age, previous PrEP use, perceived HIV risk, anticipated PrEP stigma items, zip code) had complete data (0% missing). Missingness only occurred for the primary outcome, PrEP uptake interest (n = 7; 2.9%), the majority of which reflected survey skip

logic as participants who reported previous PrEP use were not asked about future interest in PrEP uptake. Because missingness in PrEP uptake interest was fully explained by an observed covariate (previous PrEP use) that is included in the MSEM, the missingness mechanism was considered Missing at Random (MAR). Missing data was handled using Full Information Maximum Likelihood (FIML) estimation with robust maximum likelihood estimation (MLR).

Preliminary Analyses

Using SPSS, I conducted preliminary univariate and bivariate analyses to examine distributions and associations among study variables. For descriptive purposes, Likert-type variables were summarized using means, standard deviations, and frequencies, and bivariate associations were examined using Spearman correlations for ordinal variables and Pearson correlations for continuous variables. Bivariate correlations among observed predictors were examined to assess potential multicollinearity. Group differences were evaluated using non-parametric tests where appropriate (e.g., Mann–Whitney U) and chi-square tests for categorical variables. These descriptive analyses were used to characterize associations only; in the MSEM, ordinal indicators were modeled categorically. Because MSEM will be estimated using MLR, which provides standard errors and fit statistics robust to non-normality, no normality assumptions were required.

In preliminary analyses of the data, perceived HIV risk showed a strongly skewed distribution with a majority (70.8%) of participants endorsing the “not likely” category. Because of this skew and the limited use of higher-risk categories, the item was treated as an ordinal categorical variable in analyses. Each anticipated PrEP stigma item was rated on a 4-point scale and the distributions showed that most participants selected greater

stigma response options (i.e., 33-55% endorsing “strongly agree” across all 7 items). Because these items displayed skew and did not behave like continuous variables, they were treated as ordinal categorical indicators of a latent stigma factor. PrEP uptake interest used a 5-point scale and showed sufficient spread and variability across all response categories. There was no extreme floor or ceiling effects and thus it was treated as a continuous variable in MSEM analyses.

Model Specification

I initially tested my hypotheses using MSEM, which allows for the simultaneous examination of associations among individual level psychosocial factors (perceived HIV risk, anticipated PrEP stigma) and PrEP uptake interest, while accounting for structural influences (zip code median household income). MSEM is an appropriate approach given the hierarchical structure of the data, with individual participants (Level 1, $N = 240$) nested within zip codes (Level 2, n = 39). Anticipated PrEP stigma was modeled as a latent construct because it is a psychosocial measure with a theoretical basis as an underlying, unobservable factor (Earnshaw & Chaudoir, 2009). Perceived HIV risk, PrEP uptake interest, and neighborhood poverty were modeled as observed constructs because each were measured using a single-item indicator thus precluding latent variable estimation.

The hypothesized multilevel model was estimated at two levels: the individual Level 1 ($N = 240$) nested within the structural Level 2 (n = 39). The individual Level 1 includes participant-specific variables (perceived HIV risk, anticipated PrEP stigma, PrEP uptake interest, and covariates), while the structural Level 2 includes neighborhood poverty (the primary predictor). Cluster means of individual level predictors were

considered for inclusion at Level 2 to represent contextual effects when theoretically justified and when preliminary analyses indicated sufficient between-cluster variability to support aggregation. To describe the degree of clustering in the data, I calculated the intraclass correlation coefficient (ICC) for the primary outcome variable (PrEP uptake interest). The ICC quantifies the proportion of variance attributable to differences between zip codes. Although higher ICC values indicate stronger clustering, ICC alone did not determine the choice of analytic approach. Because the primary predictor (neighborhood poverty) is a Level 2 variable and the theoretical framework emphasizes structural influences, MSEM is appropriate even when ICC values are modest.

A multilevel assessment aligns with my aim to assess the unique contributions of neighborhood level poverty factors on individual psychosocial and behavioral HIV prevention-related factors. Additionally, a multilevel approach helps avoid both the ecological fallacy, wherein individual level relationships are erroneously inferred from group level data, and the individualistic fallacy, wherein group level outcomes are incorrectly explained by individual level attributes (Alker, 1969; Krieger et al., 1997). By modeling both within- and between-cluster effects, variation can be attributed to the theoretically grounded level of analysis.

Given the uneven number of clusters at Level 2, I also estimated a single-level SEM in which all variables including zip code median household income were treated as individual level variables. A single-level approach did not allow me to compare individual level variation within zip codes (i.e., how people differ within neighborhoods; Level 1) with structural level variation between zip codes (i.e., how neighborhoods differ

from one another; Level 2), but it can be used to evaluate the robustness of the hypothesized pathways using a fully saturated structural model.

Estimation and Mediation Analyses

SEM's flexibility enables testing for mediation effects while accounting for individual and contextual factors (Bryan et al., 2007; Hayes, 2009). Previous studies demonstrate SEM's utility for analyzing complex models in the context of HIV (Rao et al., 2012; Simoni et al., 2006) and neighborhood poverty and HIV prevention (Burns et al., 2021). The use of multilevel data has advanced neighborhood effects research by allowing investigators to isolate the influence of structural level indicators while controlling for individual level factors (Riley, 2018). Having a zip code level predictor aligns with my structural intersectionality theoretical framework, which may elucidate how structural determinants influence BHCW's PrEP uptake interest through multilevel direct and indirect psychosocial pathways. MSEM is thus well suited to address this dissertation's research questions.

Using Mplus, I conducted MSEM to simultaneously examine individual level (Level 1) and structural level (Level 2) effects on perceived HIV risk, anticipated PrEP stigma, and PrEP uptake interest. Perceived HIV risk and anticipated PrEP stigma were modeled as Level 1 psychosocial variables, with stigma specified as a latent factor estimated only at the individual level. PrEP uptake interest was modeled as the Level 1 outcome with corresponding within- and between-level variance components. This analytic approach allowed for the separation of variance into within- and between-cluster components, which gives an estimation of structural level influences while adjusting for the non-independence of participants nested within zip codes.

Because perceived HIV risk is categorical, paths predicting this variable were estimated using probit regression, while paths for the latent stigma factor and PrEP uptake interest were estimated using linear regression within the MSEM framework. I conducted mediation analyses to test whether the individual psychosocial variables (perceived HIV risk, anticipated PrEP stigma) explain the relationship between neighborhood poverty and BHCW's PrEP uptake interest. Each mediation pathway was tested separately within the MSEM framework. Because the multilevel model could not ultimately be estimated due to non-identification, indirect effects in the final design-effect SEM were evaluated using delta method standard errors and their corresponding 95% confidence intervals.

Reliability Estimation

The internal consistency of the individual level (Level 1) multi-item scale anticipated stigma was estimated using Cronbach's alpha, with >.80 indicating good reliability. Because anticipated PrEP stigma items are ordinal, Cronbach's alpha (based on Pearson correlations) may underestimate reliability; however, it was reported for comparability with other studies (Irie et al., 2024; Liu et al., 2020).

Model Fit

Model fit was evaluated using standard robust fit indices provided by Mplus estimated with MLR. These included the robust chi-square test of model fit, robust Comparative Fit Index (CFI), robust Tucker–Lewis Index (TLI), robust Root Mean Square Error of Approximation (RMSEA), and the within- and between-level Standardized Root Mean Square Residual (SRMR). Consistent with conventional SEM guidelines, acceptable fit was indicated by CFI and TLI values ≥ .90, RMSEA ≤ .06, and

SRMR ≤ .06 at each level. Because the chi-square statistic is sensitive to sample size and model complexity, particularly in multilevel models with categorical indicators, it was interpreted in conjunction with the other fit indices rather than as the sole criterion for evaluating model adequacy.

Sample Size and Statistical Power

At Level 1, the sample includes 240 BHCW, providing adequate power to estimate a relatively simple multilevel structural equation model with a small number of constructs and paths, particularly for detecting moderate within-level effects. At Level 2, participants are nested within 39 zip codes, with uneven clusters sizes across zip codes ranging from 1-48. Although having 39 clusters is generally sufficient for estimating random intercept models, the modest number of clusters combined with imbalance in cluster sizes reduces the power to detect small between-zip code effects, affects the stability and precision of Level 2 estimates, and makes multilevel mediation effects more difficult to detect.

Chapter 4: Results

Missing Data Patterns

PrEP uptake interest had 7 missing cases (2.9%), almost all of which were attributable to the survey skip pattern in which participants who reported PrEP use in the previous 6 months were not asked about future interest in PrEP uptake. All other variables (age, previous PrEP use, perceived HIV risk, anticipated PrEP stigma items, and zip code) had complete data (0% missing). Missingness in PrEP uptake interest was unrelated to zip code or age, and no cluster-level patterns were observed.

Participants

Participants were between the ages of 18-61 (M = 30.73 years; SD = 8.9 years); most identified as heterosexual (76.3%), were single/never married (66.7%), and on average had 1.75 children (SD = 1.62). Many participants reported having a high school diploma (47.9%) or completed some college/had an Associate's degree (24.2%). At the time of the survey, 37.9% of participants were working full-time and 39.6% were not employed. Most participants were stably housed in the previous six months (88.3%) and had Medicaid insurance (71.7%). See Table 1 for full participant sociodemographics. Participants lived across 39 DMV zip codes with variability in median household income levels (see Table 2).

Table 1.

Participant Sociodemographics		
		N = 240
	N	%
Sexuality		
Heterosexual	183	76.3%
Bisexual	54	22.5%
Pansexual	3	1.3%
Partnership Status		
Single/never married	160	66.7%
In a steady relationship/living together	25	10.4%
In a steady relationship/not living together	22	9.2%
Legally married	22	9.2%
Separated	6	2.5%
Widowed	4	1.7%
Divorced	1	<1%
Education (highest level)		
Did not complete high school	23	9.6%
GED	18	7.5%
High school diploma	115	47.9%
Some college/Associates degree	58	24.2%
Bachelors degree	19	7.9%
Graduate degree	7	2.9%
Employment (previous 6 months)		
Full-time	91	37.8%
Part-time	35	14.6%
Not employed	95	39.6%
Self-employed	19	7.9%
Unstably Housed (previous 6 months)		
No	212	88.3%
Yes	28	11.7%
*Health Insurance		
Medicaid	177	71.7%
Medicare	36	12.1%
Private	34	13.8%
Uninsured	3	1.3%
ACA	2	<1%
TRICARE/CHAMPUS	1	<1%

**Participants could choose more than one*

Table 2.

Zip Code Data

Zip Codes = 39; N = 240

ZIP Code	Jurisdiction	n	% of Sample	Median Household Income (USD)
20016	DC	1	<1%	$179,107
20720	MD	1	<1%	$162,976
20003	DC	2	<1%	$159,604
20007	DC	2	<1%	$142,783
20009	DC	4	1.7%	$140,555
20001	DC	10	4.2%	$138,730
22206	VA	1	<1%	$136,472
21114	MD	1	<1%	$136,250
20772	MD	1	<1%	$135,576
22003	VA	1	<1%	$134,109
22203	VA	1	<1%	$132,402
20012	DC	2	<1%	$128,234
20744	MD	1	<1%	$124,838
20716	MD	2	<1%	$122,683
20002	DC	21	8.8%	$114,482
20010	DC	13	5.4%	$110,260
22204	VA	1	<1%	$109,277
20011	DC	13	5.4%	$108,377
22191	VA	1	<1%	$107,993
20705	MD	2	<1%	$106,691
20024	DC	2	<1%	$102,623
20017	DC	5	2.1%	$101,543
20706	MD	1	<1%	$100,061
20037	DC	1	<1%	$98,917
20018	DC	8	3.3%	$92,569
20781	MD	1	<1%	$91,037
20737	MD	1	<1%	$84,241
20770	MD	1	<1%	$84,125
20785	MD	2	<1%	$83,690
20748	MD	1	<1%	$82,160
20745	MD	2	<1%	$80,649

Table 2.

Zip Code Data

Zip Codes = 39; N = 240

ZIP Code	Jurisdiction	n	% of Sample	Median Household Income (USD)
20746	MD	5	2.1%	$78,391
20743	MD	9	3.8%	$76,332
20747	MD	1	<1%	$72,931
20712	MD	2	<1%	$68,452
20710	MD	1	<1%	$64,406
20019	DC	48	20%	$57,031
20020	DC	47	19.6%	$53,015
20032	DC	21	8.8%	$48,146

Descriptive Analyses

Only 6 participants (2.5%) reported PrEP use in the previous 6 months. Perceived HIV risk was measured with a 4-point response item. Responses were highly skewed toward low perceived risk, with 70.8% of participants indicating that their chances of acquiring HIV was “not likely” and 17.5% reporting that it was “impossible.” A smaller proportion of participants endorsed “somewhat likely” (8.8%) or “very likely” (2.9%). This strong skew supports modeling perceived HIV risk as an ordinal categorical variable. PrEP uptake interest was measured with a 5-point Likert-type scale with nearly one-third of participants responding “definitely no” (28.7%) or “probably no” (28.7%), followed by “might or might not” (24.2%), “probably yes” (10.4%), and “definitely yes” (5.2%). PrEP uptake interest showed variability across categories, supporting its treatment as a continuous observed variable. See Table 3 for details.

Table 3.

Frequency Distributions for Previous PrEP Use, Perceived HIV Risk, and PrEP Uptake Interest

		N = 240
Variable / Response Category	**Frequency**	**%**
Previous PrEP Use (last 6 months)		
No	234	97.5%
Yes	6	2.5%
Perceived HIV Risk		
Impossible	42	17.5%
Not likely	170	70.8%
Somewhat likely	21	8.8%
Very likely	7	2.9%
PrEP Uptake Interest		
Definitely no	69	28.7%
Probably no	69	28.7%
Might or might not	58	24.2%
Probably yes	25	10.4%
Definitely yes	12	5%
Missing	7	2.9%

Across the 7 anticipated PrEP stigma items, 33-55% of participants selected "strongly agree" while only 6-17% responded "strongly disagree." This skewed distribution justifies modeling the items as ordinal categorical indicators of a latent anticipated PrEP stigma factor (see Table 4). The Cronbach's alpha for this population is $\alpha = .925$ indicating high internal consistency.

Table 4.

Anticipated PrEP Stigma Scale and Item Descriptive Statistics

		$N = 240$
Variable / Item	**Mean**	**SD**
Anticipated PrEP Stigma (7-item scale)	21.5	5.89
1. If I use PrEP, I'd worry about people discriminating against me	3	1.04
2. If I use PrEP, no one would date or become involved with me	3.07	1.02
3. If I use PrEP, no one would want to have sex with me	3.05	1.06
4. If I use PrEP, I would work hard to keep my PrEP use a secret	2.73	1.1
5. If I use PrEP, I would feel set apart and isolated from the rest of the world	3.13	.99
6. If I use PrEP, I would feel I was not as good a person as others	3.25	.97
7. I would feel ashamed of using PrEP	3.26	.91

Bivariate Analyses

I examined bivariate associations among Level 1 variables using Pearson correlations for continuous variables and Spearman correlations for ordinal variables (see Table 5). Age showed a small but statistically significant negative correlation with PrEP uptake interest, with older participants reporting slightly lower PrEP uptake interest (ρ = -.189, p = .004; r = -.154, p = .019). Perceived HIV risk was not significantly associated with PrEP uptake interest (ρ = .08, p = .226). The 7 anticipated PrEP stigma items demonstrated strong intercorrelations ranging from ρ = .463 to ρ = .867 (all $p < .001$), indicating substantial shared variance and supporting the expectation of an underlying latent stigma construct in MSEM analyses. The individual stigma items had small and non-significant correlations with PrEP uptake interest ranging from ρ = -.057 to ρ = .033 (all $p > .05$). This is consistent with my expectation that the shared variance captured by the stigma latent factor may provide a more reliable indicator of anticipated PrEP stigma

than any single item. Spearman correlations among Level 1 predictors (age and perceived HIV risk) and the stigma indicators were small (ρ range = -.119 to .078), below the threshold indicating multicollinearity and thus suggesting that each predictor contributes unique variance to the model.

Table 5.

Correlation Matrix for Individual Level Variables

$N = 240$

Variable	1	2	3	4	5	6	7	8	9	10
1. Age	-	-.154*	.015	.015	-.04	-.119	-.108	.005	.027	.078
2. PrEP interest	-.154*	-	.08	-.057	-.019	.033	.005	.017	-.027	-.04
3. Perceived HIV risk	.015	.08	-	-.014	-.041	-.038	-.049	-.01	-.02	-.012
4. Stigma 1	.015	-.057	-.014	-	.692***	.646***	.664***	.595***	.463***	.602***
5. Stigma 2	-.04	-.019	-.041	.692***	-	.867***	.643***	.688***	.582***	.668***
6. Stigma 3	-.119	.033	-.038	.646***	.867***	-	.686***	.722***	.575***	.703***
7. Stigma 4	-.108	.005	-.049	.664***	.643***	.686***	-	.613***	.469***	.577***
8. Stigma 5	.005	.017	-.01	.595***	.688***	.722***	.613***	-	.713***	.743***
9. Stigma 6	.027	-.027	-.02	.463***	.582***	.575***	.469***	.713***	-	.739***
10. Stigma 7	.078	-.04	-.012	.602***	.668***	.703***	.577***	.743***	.739***	-

Note. Values represent Spearman's rho except for age–interest which is Pearson's r. * $p < .05$, ** $p < .01$, *** $p < .001$.

Chi-square tests were used for categorical variables and Mann–Whitney U tests were used for comparisons involving non-normally distributed ordinal outcomes. Due to survey skip logic, participants who reported previous PrEP use did not complete the PrEP uptake interest item and thus interest in PrEP uptake could not be compared across previous PrEP use groups. Perceived HIV risk did not differ significantly by previous PrEP use (Mann-Whitney U = 627.5, Z = -.555, p = .579). A chi-square test also showed no significant link between perceived HIV risk and previous PrEP use $x^2(3, N = 240) = 1.879$, p = .598.

Cluster-Level Variability

I calculated the ICC to quantify the proportion of variance in PrEP uptake interest that is attributable to differences between zip codes. A one-way random-effects ANOVA indicated no significant between-cluster variability ($F(38,194) = .979$, p = .511). The estimated between-group mean square (1.316) was slightly smaller than the within-group mean square (1.345). Using the standard ICC formula with the average cluster size (k = 5.974), the ICC = -.004. This indicates that nearly all variation in PrEP uptake interest occurs within rather than between zip codes. Although the ICC is negligible, attempting multilevel modeling remains appropriate because the primary predictor (neighborhood poverty) is a Level 2 variable and the study's theoretical framework prioritizes examining structural level influences.

To avoid overfitting the model and preserve model stability given the modest number of clusters (n = 39) that are uneven in size, cluster means of individual level predictors were not included at Level 2. Although perceived HIV risk had theoretical justification for aggregation (e.g., to reflect neighborhood level normative HIV risk

perceptions), the between-cluster variability was minimal, with most participants across zip codes endorsing "not likely." Aggregating this variable would therefore contribute little meaningful contextual information while increasing the risk of model convergence and unstable Level 2 parameter estimates. Accordingly, all individual level predictors (age, perceived HIV risk, anticipated PrEP stigma) were modeled exclusively at Level 1, while neighborhood poverty was modeled at Level 2. This approach maintained a parsimonious multilevel model that is aligned with my theoretical framework.

Confirmatory Factor Analysis

As detailed in a previous section, the 7 anticipated PrEP stigma items had strong theoretical and psychometric support for their inclusion as indicators of a single latent factor. I therefore conducted a confirmatory factor analysis (CFA) of the items to evaluate whether they loaded onto a single latent anticipated PrEP stigma factor. Because the items were ordinal, the model was estimated using WLSMV with a probit link and THETA parameterization. The one-factor CFA model demonstrated excellent fit to the data $x^2(71) = 127.13$, CFI = .993, TLI = .992, RMSEA = .058 (90% CI: .041-.074), SRMR = .073. All items loaded strongly and significantly onto the latent factor, with standardized loadings ranging from .80 to .94 and item R^2 values ranging from .64 to .89 indicating substantial shared variance (see Table 6). All loadings were statistically significant ($p < .001$). I used individual factor scores to model stigma as an observed predictor in subsequent analyses.

Table 6.

Standardized CFA Loadings for Anticipated PrEP Stigma Items		
		N = 234
Item	**Standardized Loadings**	**R^2**
1. If I use PrEP, I'd worry about people discriminating against me	.802	.643
2. If I use PrEP, no one would date or become involved with me	.944	.892
3. If I use PrEP, no one would want to have sex with me	.944	.891
4. If I use PrEP, I would work hard to keep my PrEP use a secret	.803	.644
5. If I use PrEP, I would feel I was not as good a person as others	.895	.801
6. I would feel ashamed of using PrEP	.848	.719
7. If I use PrEP, I would feel set apart and isolated from the rest of the world	.836	.699

Multilevel SEM Analyses

In alignment with my theoretical framework, I specified a two-level MSEM with neighborhood poverty at Level 2 (between zip codes) and age, previous PrEP use, perceived HIV risk, anticipated PrEP stigma (latent from 7 items), and PrEP uptake interest at Level 1 (within zip codes). Although the CFA showed that the anticipated PrEP stigma items formed a strong single factor at the individual level, the latent factor did not have sufficient between-cluster variance for Mplus to estimate a Level 2 component of the latent variable. As a result, the model produced non-identification errors indicating that the Level 1 latent factor could not be extended to the between-level. Further, with 39

zip codes, many with only 1 or 2 participants, there was insufficient Level 2 sample size for stable multilevel analyses. Thus, the two-level MSEM could not be reliably estimated.

Single Level SEM Analyses

I then conducted a single level SEM adjusted for the design effect. This approach accounted for the clustering of participants within zip codes and produced cluster-robust standard errors and design-corrected chi-square and fit indices, while treating all variables as operating at Level 1 (see Figure 2). All parameters were estimated using MLR. The design effect-adjusted structural model demonstrated excellent overall fit to the data: $x^2(1) = .196$, $p = .658$; RMSEA = .000 (90% CI: .000-.132; $p = .74$); CFI = 1; TLI = 1; SRMR = .006.

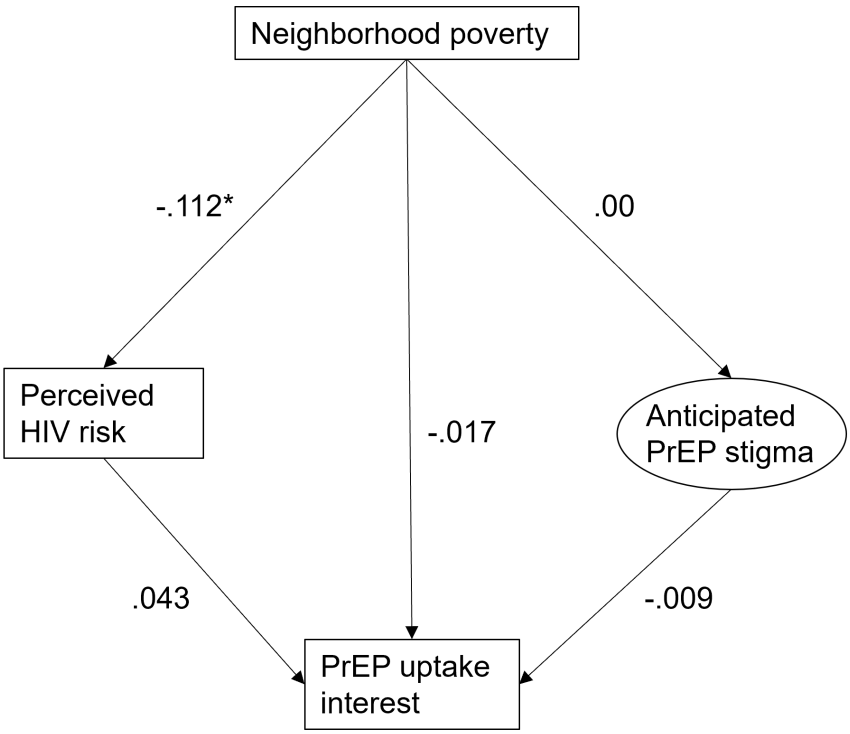
See Figure 2 and Table 7 for single level SEM direct effects. PrEP uptake interest was not significantly predicted by perceived HIV risk ($b = .074$, $SE = .092$, $p = .416$; $\beta = .043$), anticipated PrEP stigma ($b = -.009$, $SE = .059$, $p = .879$; $\beta = -.009$), nor neighborhood poverty ($b = -.006$, $SE = .033$, $p = .85$; $\beta = -.017$), and thus H1, H2, and H3 were not supported. H4 was supported as higher neighborhood poverty significantly predicted lower perceived HIV risk ($b = -.023$, $SE = .011$, $p = .039$; $\beta = -.112$). H5 was not supported as neighborhood poverty did not predict anticipated PrEP stigma ($b = .00$, $SE = .015$, $p = .999$; $\beta = .00$).

Previous PrEP use significantly predicted higher perceived HIV risk ($b = 1.376$, $SE = .211$, $p < .001$; $\beta = .297$). While previous PrEP use showed a statistically significant positive association with anticipated PrEP stigma ($b = 1.12$, $SE = .515$, $p = .03$; $\beta = .133$), this parameter estimate was flagged by Mplus as having potentially unstable standard errors and therefore this result should be interpreted with caution. Previous PrEP use

predicted lower PrEP uptake interest (b = -.626, SE = .319, p = .05; β = -.079), though the effect was very small and the statistical significance is borderline. Age did not predict perceived HIV risk (b = .005, SE = .005, p = .329; β = .063) nor anticipated PrEP stigma (b = -.001, SE = .009, p = .92; β = -.006). Age did significantly predict PrEP uptake interest (b = -.021, SE = .01, p = .039; β = -.164), with older women reporting lower interest.

Figure 2.

Single Level Conceptual Model: Influence of Neighborhood Poverty on Psychosocial Determinants for BHCW



Note. Standardized coefficients (β) are shown. p-value < .05.

Table 7.

Direct Effects Single Level SEM with Cluster-Robust Standard Errors

N = 234

Outcome	**Predictor**	***b***	***SE***	***β***	***p***
PrEP interest	Perceived HIV risk	.074	.092	.043	.416
PrEP interest	PrEP stigma	-.009	.059	-.009	.879
PrEP interest	Neighborhood poverty	-.006	.033	-.017	.85
PrEP interest	Previous PrEP use	-.626	.319	-.079	.05
PrEP interest	Age	-.021	.01	-.164	.039
Perceived HIV risk	Neighborhood poverty	-.023	.011	-.112	.039
Perceived HIV risk	Previous PrEP use	1.376	.211	.297	<.001
Perceived HIV risk	Age	.005	.005	.063	.329
PrEP stigma	Neighborhood poverty	.00	.015	.00	.999
PrEP stigma	Previous PrEP use	1.12	.515	.133	.03
PrEP stigma	Age	-.001	.009	-.006	.92

Note. *b* = unstandardized coefficient; *SE* = cluster-robust standard error; *β* = standardized coefficient.

The hypothesized indirect paths (H7 and H8) from neighborhood poverty to PrEP uptake interest were not supported (see Table 8). The path through perceived HIV risk was small and nonsignificant (*b* = -.002, *SE* = .002, *p* = .43, *β* = -.005), indicating that although higher neighborhood poverty predicted lower perceived risk (H4), this did not impact PrEP uptake interest. The path through anticipated PrEP stigma also showed no evidence that stigma mediated the relationship between neighborhood poverty and PrEP uptake interest (*b* = .00, *SE* = .00, *p* = .999; *β* = .00). The total indirect effect from neighborhood poverty to PrEP uptake interest also very small and not statistically

significant (b = -.002, SE = .002, p = .422; β = -.005). As shown in Table 9, the overall variance explained in this model was modest for perceived HIV risk (R^2 = .109), and small for anticipated PrEP stigma (R^2 = .018) and PrEP uptake interest (R^2 = .033).

Table 8.

Indirect Effects of Neighborhood Poverty on PrEP Uptake Interest

N = 234

Indirect Path	***b***	***SE***	***β***	***p***
Neighborhood poverty —> Perceived HIV risk —> PrEP uptake interest	-.002	.002	-.005	.43
Neighborhood poverty —> Anticipated PrEP stigma —> PrEP uptake interest	.00	.00	.00	.999
Total indirect effect	-.002	.002	-.005	.422

Note. b = unstandardized coefficient; SE = cluster-robust standard error; *β = standardized coefficient.*

Table 9.

Variance Explained (R^2) for Outcome Variable in Single Level SEM

N = 234

Variable	**R^2**
Perceived HIV risk	.109
Anticipated PrEP stigma	.018
PrEP uptake interest	.033

Chapter 5: Discussion

General Discussion

In this dissertation I applied the structural intersectionality theoretical framework to understand how 240 BHCW's PrEP uptake interest was influenced by neighborhood poverty (a structural level determinant), as well as perceived HIV risk and anticipated PrEP stigma (individual, psychosocial determinants). To my knowledge this was the first study to examine the influence of neighborhood poverty on BHCW's PrEP uptake interest, as well as the psychosocial factors that may mediate this pathway. Although the design effect-adjusted structural model demonstrated excellent fit, only one of the hypothesized pathways was supported. Results show that higher neighborhood poverty was linked to BHCW's lower perceived HIV risk, and that older participants had lower PrEP uptake interest. My findings indicate that understanding PrEP uptake among BHCW requires multilevel approaches that target multiple structural determinants of HIV prevention.

The hypothesized pathway from perceived HIV risk to PrEP uptake interest (H1) was not supported among my sample, nor was perceived HIV risk significantly associated with PrEP uptake interest in bivariate analyses. Notably, most participants reported low perceived HIV risk, indicating that they felt their chances of acquiring HIV were "not likely" (70.8%) or "impossible" (17.5%). Participants' low HIV risk perceptions—despite their high actual risk living in the DMV area—mirror the findings of BHCW in other studies (Blackstock et al., 2015; Frew et al., 2016; Younge et al., 2010), including studies conducted in D.C. (Scott et al., 2022), Mississippi (Willie et al., 2022), and the South (Hill et al., 2021). If an individual does not perceive themselves to

be at risk for HIV, then it is unlikely that they will be motivated to consider an HIV prevention strategy such as PrEP uptake.

From a structural intersectionality perspective, there are many possible reasons why BHCW have low perceived HIV risk, including because they may not receive adequate information about their risk or PrEP from HCPs (Auerbach et al., 2015; Bond et al., 2021; Hirschhorn et al., 2020; Hull et al., 2021; Randolph et al., 2020; Willie et al., 2022); they may not know they should prioritize PrEP due to lack of PrEP information and advertising specifically for BHCW (Blackstock et al., 2015; Bond et al., 2021; Calabrese et al., 2019; Chandler et al., 2022; Dauria et al., 2021; Hirschhorn et al., 2020; Irie & Blackstock, 2024; Willie et al., 2022); or they may be unable to prioritize HIV prevention over familial, financial, food, or other health-related needs (Bond et al., 2021; Boudreaux et al., 2025; Blackstock et al., 2015; Chandler et al., 2022; Flash et al., 2017; Frew et al., 2016; Nydegger et al., 2021; Park et al., 2019; Randolph et al., 2020). By hindering accurate HIV risk perceptions, these structural barriers may in turn attenuate the salience of PrEP as a necessary health promotive behavior. Evidence from several meta-analyses (Golub & Fikslin, 2019; LaCroix et al., 2014; Webb & Sheeran, 2006) refutes the notion that HIV prevention practices can be improved merely by increasing individual risk perceptions, and data from Hallfors and colleagues' (2007) national study indicate that such approaches are likely inappropriate for many Black people because they lack attendance to contextual factors that can heighten risk. The null pathway from perceived HIV risk to PrEP uptake interest in my sample therefore suggests that future research utilize structural approaches, as those that target risk perceptions without

consideration of the structural context may be culturally inappropriate and insufficient for improving BHCW's PrEP uptake.

Although previous studies found that anticipated PrEP stigma can hinder BHCW's PrEP uptake (Calabrese et al., 2018; Irie et al., 2024; Knight et al., 2024; Scott et al., 2022), I did not find support for H2 in my analysis. It is possible that internalized—rather than anticipated—PrEP stigma is a stronger influence on participants' PrEP uptake interest, as Auerbach and colleagues' (2015) found in their focus group study with majority Black women. As described above, average perceived HIV risk was low among my sample, and thus anticipated PrEP stigma may only be salient when HIV risk perception is high. It is also plausible that the items used to measure anticipated PrEP stigma among my participants did not target the primary source of discrimination, as they were focused on fears of stigmatization from potential sexual partners and others in one's social world. While quantitative studies from Calabrese et al. (2018) and Irie et al. (2024) found that anticipated PrEP stigma from close others was negatively correlated with PrEP interest, the participants in this dissertation may instead have anticipated PrEP stigma from HCPs, as was described by BHCW in multiple qualitative studies (Bond et al., 2021; Goparaju et al., 2017; Knight et al., 2024; Small et al., 2023). Given the importance of HCPs in the route to PrEP uptake, the structural intersectional discrimination that BHCW face in sexual healthcare settings, and the numerous structural barriers to accessing adequate HIV prevention care, subsequent research that aims to understand anticipated PrEP stigma may be most impactful by focusing on HCPs and the ways in which the healthcare system itself can breed anticipated PrEP stigma.

Though previous studies have not examined the direct effect of neighborhood poverty on BHCW's PrEP uptake interest, there is evidence that residing in a low-income neighborhood can adversely impact BHCW's HIV prevention behaviors more generally through structural barriers including reduced access to health promotive resources and quality healthcare (Lewandowski et al., 2011; Taggart et al., 2022; Taggart et al., 2023), lack of socioeconomic resources (Adimora et al., 2006; Latkin et al., 2013; Hill et al., 2021), increased economic insecurity (Bradley et al., 2018; Chatterjee et al., 2006), and exposure to chronic stress (Frew et al., 2016). Yet this hypothesized pathway (H3) was not supported in my sample. As health promotive interest can be hampered by structural obstacles (Bowleg, 2012; Bowleg et al., 2013; Flash et al., 2017; Hull et al., 2023), participants living in lower income neighborhoods may not have formed interest in a health promotive tool that they consider inaccessible. The path from neighborhood poverty to PrEP uptake interest may have also been affected by moderators not modeled in this dissertation, such as levels of healthcare engagement, medical mistrust, or perceived control or efficacy. Future studies should seek to identify proximal mechanisms through which structural determinants may alter BHCW's PrEP uptake interest. Further, though I followed the analytical approach from Burns and colleagues' (2021), who used MSEM and found support for the link between neighborhood poverty and PrEP use beyond individual level factors among Black MSM, the lack of between-cluster variance in my sample precluded a stable two-level analysis. Thus, I modeled neighborhood poverty within a single-level framework, which may have resulted in an underestimation of the structural influences functioning at the between-neighborhood level.

In support of H4, higher neighborhood poverty significantly predicted lower perceived HIV risk among my sample of BHCW. This finding may be best understood through the lens of structural stress. More impoverished neighborhoods yield higher levels of stress for their residents (Logan et al., 2002; Taylor et al., 1997), and elevated chronic stress has been linked to deteriorated coping resources and health promotive behaviors among Black women (Allen et al., 2019; Knighton et al., 2022). BHCW living in low-income, high stress contexts can lack a sense of control over their environment and in turn their ability to prevent HIV (Lewandowski & Holden, 2011). As was found in Younge and colleagues' (2010) study with low-income BHCW, underestimating one's personal HIV risk can be an adaptive coping mechanism used to manage the feeling of powerlessness to avoid HIV due to lack of resources.

In higher poverty contexts, HIV prevention is also unlikely to be BHCW's priority over their acute survival and healthcare concerns (Blackstock et al., 2015; Frew et al., 2016; Nydegger et al., 2021). Participants may have cognitively deprioritized HIV risk appraisal as a rational response to limited cognitive resources from stress, competing demands, or restricted perceived agency to address the health threat. The influence of neighborhood poverty on perceived HIV risk among participants provides evidence in support of interventions that target structural determinants, as individual level HIV risk-based interventions alone are unlikely to shift BHCW's HIV-related perceptions.

Nearly half (48.4%) of participants lived in the three zip codes with the lowest median household income (<$57,031). In addition, average anticipated PrEP stigma was generally high, with 33-55% of BHCW endorsing "strongly agree" across items. Yet, although neighborhood poverty and anticipated PrEP stigma were prevalent in this

sample, stigma levels did not vary systematically by neighborhood poverty. Accordingly, I did not detect a direct association between the two variables, and my hypothesized pathway from neighborhood poverty to anticipated PrEP stigma (H5) was not supported. It may be that neighborhood poverty is more strongly related to internalized HIV stigma, as was found among a cohort of majority Black women living with HIV (Crockett et al., 2019).

It may also be that anticipated PrEP stigma is pervasive across socioeconomic contexts, which would restrict the ability of neighborhood poverty to explain variability in stigma. However, because I could not estimate a multilevel model, I could not examine potential between-neighborhood differences in stigma. In addition to using multilevel modeling, because the structural determinant did not demonstrate a direct effect on this psychosocial process, future studies may benefit from examining mediators in the pathway from neighborhood poverty to anticipated PrEP stigma that are shaped by structural intersectional discrimination including healthcare access, HCP discrimination, partnership dynamics, sexual power, medical mistrust, or psychosocial stress load.

One of the aims of my dissertation was to understand whether individual psychosocial variables mediate the relationship between neighborhood poverty and BHCW's PrEP uptake interest because, as Brawner and colleagues' (2022) systematic review found, the mediating pathways between neighborhood disadvantage and HIV risk outcomes for all groups are undertested. However, the hypothesized indirect pathways from neighborhood poverty to PrEP uptake interest through perceived HIV risk (H6) and anticipated PrEP stigma (H7) were not supported in my sample. One explanation for these findings could be that the effect of neighborhood poverty on BHCW's PrEP uptake

interest is not reducible to individual perceptions about HIV risk or anticipated stigma. Neighborhood poverty may instead shape contextual or institutional constraints such as healthcare, provider, or insurance access to influence PrEP uptake, rather than operating through cognitive mediators. If so, future studies could examine structural mediators, rather than psychosocial ones.

These null findings may also indicate that the social-structural processes influencing BHCW's PrEP interest are truly multilevel, as I have theorized throughout this dissertation. These results underscore the importance of my initial effort to conduct multilevel modeling to capture downstream effects, as modeling neighborhood poverty (a structural determinant) at the individual level was insufficient for examining its effects on psychosocial outcomes. Capturing the between-level pathway with MSEM would allow assessment of whether neighborhoods differ in average perceived HIV risk or anticipated PrEP stigma, and whether those differences predict BHCW's PrEP uptake interest across neighborhoods. Flattening Level 2, although statistically necessary in this case, likely obscured how structural disadvantage functions to influence PrEP uptake interest. As experts (Blankenship et al., 2000; Brawner et al., 2022; Earnshaw et al., 2022; Krieger, 2021) have argued, multilevel research approaches are necessary to understanding how structural level factors impact HIV prevention health outcomes and behaviors.

I included previous PrEP use as a covariate in my model, and it was statistically associated with perceived HIV risk, anticipated PrEP stigma, and PrEP uptake interest. However, only 6 participants (2.5%) reported PrEP use in the previous 6 months, substantially limiting the reliability and interpretability of these results. Age was also included as a covariate and although it was not significantly associated with perceived

HIV risk nor anticipated PrEP stigma, it did predict PrEP uptake interest, with older participants reporting lower PrEP uptake interest. This finding echoes across the literature. A systematic review of 24 studies on PrEP uptake among U.S. Black women found that age is a predisposing factor for PrEP uptake (Sims Haynes et al., 2024). Compared with younger cohorts, older BHCW believe that their HIV risk—and by extension their need for PrEP—diminishes with age due to reduced frequency of HIV risk behavior (Sims Haynes et al., 2024) and increased relationship stability (Knight et al., 2025).

In addition, because of the history of medical gendered racism, higher levels of medical mistrust have been shown to drive lower PrEP uptake among older BHCW (Knight et al., 2025), alongside greater anticipated PrEP stigma (Knight et al., 2025; Zack et al., 2024). Older BHCW, who have likely faced more cumulative experiences of HCP discrimination over their lifetimes and have more knowledge of the history of medical gendered racism, need PrEP uptake interventions that aim to improve patient-provider interactions and trust in the healthcare system generally (Tekeste et al., 2019). Overall, these age-related data suggest that interventions to improve PrEP uptake among BHCW must account for life-course dynamics—including relationship status, trust in the healthcare system and providers, and perceptions about risk and stigma—reinforcing intersectionality's tenet that single-axis, one-size-fits-all approaches are unlikely to be effective.

Limitations

This dissertation has several limitations. First, this study is based on secondary data thus constraining my analyses to the variables, sampling, and data collection

decisions made by the parent study investigators. Second, two of the individual level variables are based on single item measures. In psychology, psychometric experts favor multi-item scales as they are considered to have higher reliability, stronger construct validity, and to better capture the complexity of psychological and behavioral constructs than single item scales (Allen et al., 2022; Song et al., 2022). However, the parent study was conducted by researchers in public health, a field that prioritizes pragmatism and feasibility in survey data collection, and thus single item measures are considered an acceptable method for reducing participant response burden and increasing cost-efficiency (Allen et al., 2022; Hoeppner et al., 2012). Third, the individual level data is cross-sectional, which limited my ability to draw causal conclusions about the relationship between the psychosocial determinants and PrEP uptake interest among BHCW. The related results were therefore interpreted as associations rather than causal pathways.

Fourth, my structural variable (zip code median household income) is based on participants' zip codes, which are imperfect proxies for neighborhood contexts because they include broad geographic regions with populations that can vary in sociodemographic characteristics (Krieger et al., 1997). However, using zip code level data is common in neighborhood level analyses because sociodemographic data at this level is publicly accessible (Riley, 2018). Additionally, this was the only structural level information available for me to analyze within the secondary data. Fifth, the uneven cluster sizes prevented multilevel modeling and my ability to distinguish between within- and between-level variance.

Sixth, this dissertation is reliant on a quantitative methodology grounded in a positivist paradigm, which assumes that there are objective truths that can be measured and generalized without attendance to time or context (Lincoln & Guba, 1985). These assumptions are misaligned with those of social constructivism that underlie intersectionality, my theoretical framework, wherein realities are considered subjective and knowledge contextually situated (Carter & Little, 2007). As such, my statistical methods may have insufficiently captured the complexities and nuance required to understand the influence of intersectional structural oppressions on BHCW's PrEP uptake. Finally, as I am not a member of this dissertation's population of focus (BHCW), my epistemological insights and ability to interpret the situated knowledge and culturally specific meanings within the data are limited. Although I do not have the lived experiences or perspectives that a BHCW researcher would, I approached this work with cultural humility. To enhance the integrity of my interpretations of these data, I incorporated feedback from my doctoral advisor, a Black woman with extensive research expertise on how intersectional structural discrimination influences health inequities for historically oppressed groups.

Implications and Future Directions

This dissertation provides some empirical support for the structural intersectionality theoretical framework. My finding that neighborhood poverty (an intersectional, structural determinant) shapes perceived HIV risk among this cohort of BHCW exemplifies that participants had an adaptive, cognitive response to a structural constraint. This result underscores that structural level indicators should be analyzed as antecedent determinants to individual level processes (Blankenship et al., 2000; Caldwell

& Mathews, 2015; Doshi et al., 2021; Taggart et al., 2021), challenging the use of exclusively individualistic models that examine BHCW's HIV risk perceptions without consideration of broader contextual influences (Cochran & Mays, 1993; Mays & Cochran, 1988; Logan et al., 2002). I did not find support for the other direct or indirect individual level pathways from neighborhood poverty to participants' PrEP uptake interest. These statistically non-significant results imply that structural disadvantages cannot be fully reduced to psychosocial processes, reinforcing critiques of individualistic health behavior frameworks to understand BHCW's sexual health behavior decisions and outcomes (Amaro, 1995; Pratto & Walker, 2004; Rosenthal & Levy, 2010).

Importantly, the null findings should not be interpreted as evidence of absence of structural influence on BHCW's HIV prevention behaviors and outcomes. Rather, they illustrate the limitations of modeling structural determinants at the individual level, as flattened models (such as the one used in this dissertation) can obscure between-context variability. Multilevel analytic approaches are best suited to shed light on the relationship between structural determinants and individual health outcomes (Zubizarreta & Beccia, 2025). Future studies on neighborhood poverty should prioritize multilevel designs with sufficient between-neighborhood variance so that health outcome and behavior effects across levels can be assessed. Structural, rather than psychosocial, factors shaping the pathway to BHCW's PrEP uptake interest should also be considered, including mediators such as neighborhood healthcare access, HCP discrimination, socioeconomic stability, and moderators such as medical mistrust and relationship dynamics.

To make the most impact, future HIV prevention interventions should be structurally- and community-informed. For example, Sisters Informing Sisters about

Topics on AIDS and Prevention (SISTA-P) is a novel, culturally grounded training program that increased PrEP uptake among BHCW by improving their efficacy and skills to overcome multilevel PrEP uptake barriers including related to sexual partners and HCPs (Hull et al., 2024). Such community-driven approaches that attend to multilevel determinants can help ensure that PrEP interventions are responsive to how intersectional structural discrimination shapes BHCW's lived realities.

Further, age-related differences in participants' PrEP uptake interest signify that interventions must be informed by life-course approaches. Younger participants had higher PrEP uptake interest, which implies that current PrEP uptake strategies have been successful at least for younger groups of BHCW and that HIV reduction interventions should be tailored specifically to older BHCW to be most impactful in reducing HIV incidence. Given that older Black women have high rates of medical mistrust that can reduce their comfort with discussing PrEP with their HCPs (Tekeste et al., 2019), integrating conversations about PrEP into routine healthcare care visits and teaching HCPs how to properly initiate these conversations may help reduce the stigma around it, address older BHCW's assumptions about their reduced HIV risk, and begin to dismantle suspicion toward reproductive healthcare.

The lack of association between anticipated PrEP stigma and PrEP uptake interest among participants indicates that stigma reduction interventions that solely target BHCW's peers or partners may be less effective. Future research should distinguish between the different sources of anticipated PrEP stigma, as intervening on PrEP stigma among HCPs or within the healthcare system itself may be more useful to improve BHCW's PrEP uptake. In addition to interventions that address HCP's gendered racial

biases (Hull et al., 2021), HCP training should incorporate teachings on intersectional structural discrimination and the myriad ways it contributes to BHCW's diminished HIV prevention care seeking and access. The Women's PrEP Project (W-PrEP) for example, is a structural intervention that was designed specifically to address the PrEP barriers that BHCW in D.C. face in sexual and reproductive healthcare clinics by providing resources and training that enable HCPs to provide non-discriminatory PrEP services (Scott et al., 2025). In addition to making PrEP appointments and resources more accessible by providing telehealth options, off-site laboratory referrals, and peer support services, W-PrEP prompts HCPs via electronic health records to discuss PrEP with their patients (Scott et al., 2025). W-PrEP also has HCP trainings on topics such as the social-structural determinants of HIV-related health, the epidemiology of the HIV epidemic, implicit and explicit biases, trauma-informed care, and positive PrEP-related communication (Scott et al., 2025). Together, this evidence highlights that efforts to reduce PrEP stigma and in turn increase PrEP uptake among BHCW will be most effective when they prioritize transforming healthcare systems and HCP practices.

Relatedly, policy changes should focus on adjusting structural barriers both within and outside of the healthcare system. Low-barrier PrEP delivery models should be implemented including by making PrEP discussions routine in primary and reproductive health visits, expanding telehealth access, improving PrEP insurance coverage, and eliminating out-of-pocket PrEP care costs. Investing in the expansion of sexual and reproductive care and PrEP infrastructure in low-income neighborhoods is also essential, as neighborhood poverty shaped HIV risk perceptions among this cohort of BHCW and may constrain their HIV and other health promotive behaviors. Policy directions that

advance structural accountability and system level changes are essential to increase PrEP access and uptake among BHCW.

Conclusion

In 2020, in response to the police murder of George Floyd (Krieger, 2020), structural racism was declared a public health crisis by U.S. states (Mendez et al., 2021; Zraick, 2021), scientific organizations such as the APA (APA, 2021) and the American Public Health Association (APHA, 2020), and federal government agencies including the National Institutes of Health (NIH; Collins et al., 2021). The NIH's National Institute of Mental Health (NIMH) subsequently prioritized funding for health research that attends to structural determinants of HIV (Greenwood et al., 2022; NIMH, 2022) and considers intersectionality when examining inequities in HIV-related perceptions and risk (Goodenow & Rausch, 2022). Understanding the impact of concentrated poverty and social-structural determinants on health, particularly through the lens of intersectionality, was recognized as a high priority area for NIH-funded research (Perez-Stable & Zenk, 2023). The first drafts of this dissertation in 2023 were written in response to those NIH calls and to the U.S. government's *Ending the HIV Epidemic* by 2030 Initiative goals to improve PrEP uptake among groups at increased risk for HIV in high priority areas including D.C. (CDC, 2022).

At the time of this writing (January 2026), however, the institutional landscape for HIV prevention research and practice is unrecognizable. In 2025, the federal government instructed federal health agencies to scrub websites and erase public health data related to diversity, equity, inclusion, a move that health scholar Dr. Nancy Krieger called a digital book burning (Fink et al., 2025). The NIH was forced to illegally end research grants

focused on advancing the health of minority groups including Black women (Montague, 2025; Rabin & Hwang, 2025). Foreign aid programs that funded PrEP and other essential HIV-related health services around the world were cut with the elimination of the United States Agency for International Development (USAID; Beusekom, 2026). Domestic programs that provided support for women in need of reproductive care and domestic violence support were shut down (Robins et al., 2025; Semuels, 2025), disproportionately harming the health and safety of low-income, racial/ethnic minoritized women and diminishing their autonomy.

All of the key terms of this dissertation were censored within federal institutions and their documents including: women, Black, intersectionality, discrimination, oppression, prejudice, inequity, health equity, anti-racism, minorities, critical race theory, diversity, historically, gender, gender-based violence, marginalized, people of color, segregation, vulnerable, underrepresented, and social justice (Connelly, 2025). These mutations to U.S. federal institutions are emblematic of intersectional structural discrimination, oppressive acts reflective of patriarchal White supremacist goals. Their work amplifies the intersectional invisibility of low-income BHCW in health research and ensures that HIV will persist in the U.S. long after the 2030 goal mark.

At the core of intersectionality is attendance to power, and its application in health research requires sustained attention to the structural conditions that produce and maintain health inequities (Bowleg, 2017; Collins, 1995; Weber & Parra-Medina, 2003). The current political context, in which the language needed to study inequity has been systematically erased from federal institutions, cannot be treated as external to HIV prevention research. Language reflects and reproduces power (Freire, 1970), and inequity

is reinforced both by what is said and by what is absent (Bowleg, 2023). The dismantling of health equity-oriented research, social safety net programs, and HIV prevention initiatives is a contemporary manifestation of intersectional structural discrimination. Equity is not a zero-sum game (McGhee, 2021), and addressing neighborhood poverty and other structural determinants is foundational to reducing HIV inequities. This dissertation's findings reinforce that neighborhood poverty is not ancillary to HIV prevention but rather integral to understanding BHCW's HIV-related perceptions, behaviors, and outcomes. Multilevel, multidisciplinary, and intersectional approaches are best suited to improve BHCW's PrEP uptake and to advance effective HIV prevention overall.

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