

A Scoping Review of Gay Family Networks: HIV Preventative Implications for Black MSM

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Abstract

Gay family networks (GFNs) are social supports that have been shown to influence protective and risk factors for HIV transmission among Black men who have sex with men (MSM). The purpose of this scoping review is to provide a conceptual overview and mapping of HIV-related prevention research with Black MSM belonging to GFNs. We identified 352 articles for title and abstract review; of these, 28 were included in the final analysis. Our review includes a discussion of identified themes including, social network characteristics of GFNs, psychosocial factors affecting vulnerability for HIV transmission, and HIV prevention interventions. Research suggests the potential to bolster GFN assets to promote protective factors against HIV acquisition for Black MSM. The few HIV prevention interventions involving GFNs show promise, but only quasi-experimental studies have been completed to date. Identifying and strengthening assets among Black MSM's GFNs, as well as utilizing experimental study designs should be a priority for future research.

Introduction

In 2019, there were approximately 1.1 million people are living with HIV in the U.S (CDC, 2020). In the same year, Black Americans accounted for 43% of those newly diagnosed with HIV, despite comprising only 13% of the Nation's total population (CDC, 2020). Black men who have sex with men (MSM) are increasingly disproportionately impacted by HIV, accounting for 58% of all new HIV diagnoses among Black Americans and 25% of all diagnoses in the U.S. (CDC, 2020). Projections indicate that 1 in 2 Black MSM will be diagnosed with HIV during their lifetime if current trends persist (Levy et al., 2014). Despite the belief that HIV incidence is perpetuated by individual behaviors (unprotected sex, multiple sex partners, and intravenous substance use), Black MSM face an array of socioecological barriers that increase their vulnerability to HIV infection, including disproportionate rates of undiagnosed HIV and sexually transmitted infections (STI) (CDC, 2020; Mannheimer et al., 2014; Millett et al., 2012). Low income, inadequate employment, incarceration, inequities in educational resources, lack of access to culturally competent medical care (Dyer et al., 2020; Levy et al., 2014; Malebranche et al., 2004; Mayer et al., 2014; Mena et al., 2017; Nelson et al., 2016), homophobia, HIV-related stigma, and experiences anti-Black racism all contribute to disproportionate rates of new HIV diagnoses among Black MSM (Millett et al., 2012; Nelson et al., 2014; Nelson et al., 2016; Nelson et al., 2017).

In the face of multiple socioecological stressors, some Black MSM have formed or joined gay family networks (GFN)s – mutually chosen, non-genetic, named chosen kinship groups. As the familial titles imply, GFNs are often modeled or conceived utilizing westernized concepts of family structure, such as “mothers” and “fathers” who mentor their members (“children”) in various aspects of life (Arnold & Bailey, 2009; Bailey, 2009; Hailey et al., 2020; Harper et al., 2020; Horne et al., 2015; Levitt et al., 2017; Levitt et al., 2015; Young et al., 2017; M. C. Zarwell & W. T. Robinson, 2018). Such GFNs often act as a “social home” for participants, providing a centralized social structure from which participants can obtain and provide emotional and instrumental support (Arnold & Bailey, 2009; Arnold et al., 2018; Bailey, 2009). Numerous types of GFNs have been identified in scholarly literature (Arnold & Bailey, 2009; Dickson-Gomez et al.,

2014; Horne et al., 2015; Levitt et al., 2015; M. C. Zarwell & W. T. Robinson, 2018). In this article, we use the term "gay family network(s)" as an umbrella term to capture the various types of chosen kinship networks that are common among Black MSM, including houses in the house ball community (HBC), houses in the pageant community, and gay families (Horne et al., 2015; Levitt et al., 2017; Levitt et al., 2015; M. C. Zarwell & W. T. Robinson, 2018) (see Table 1). The social support afforded by members of GFNs have been noted to have positive implications for health outcomes, including the promotion of behavioral sexual health strategies among peers (discouraging sex-based drug use, encouraging condom use, providing support for HIV testing or treatment), and high rates of PrEP awareness, high rates of primary care provider coverage, and high rates of sexual identity disclosure to healthcare providers (Alio et al., 2020; Dickson-Gomez et al., 2014; Horne et al., 2015; Levitt et al., 2017; M. C. Zarwell & W. T. Robinson, 2018). Additionally, participants with more social network members who provided support for HIV testing had decreased odds of engaging in condomless anal intercourse (CAI) and reduced odds of delayed HIV testing in the past 6 months (Arnold et al., 2018). Despite such positive effects, threats to sexual health may persist among Black MSM belonging to GFNs, while outside influences, such as those from non-house members may contribute to decreased sexual health promotion behaviors, including CAI and sex-drug use (Schrager et al., 2014).

Today, there is an emerging body of HIV prevention literature centered on gay family networks, most notably, ballroom houses. Three relevant systematic reviews have been published in the scientific literature; two reviews focused on health-related topics in the house ball community and one involved a systematic review of African American youth belonging to chosen/created families (Hailey et al., 2020; Olivas et al., 2019; Phillips et al., 2011). Phillips et al. (Phillips et al., 2011) synthesized peer-reviewed and web-based literature on African American transgender persons and young Black MSM who were members of HBC. These authors provided a brief history of the house ball community, along with definitions of key concepts including houses, balls, and HIV prevention activities taken up by the community, but included only 4 empirical studies in their review. More recently, Olivas et al. conducted a systematic review of empirical studies on HBC houses to identify relevant research on health and wellness to inform future research (Olivas et al., 2019). Hailey et al. conducted a systematic review of the literature to capture the experiences of sexual and gender minority African American youth (≥ 29 years of age) who belong to chosen or created families (Hailey et al., 2020). GFN member experiences were characterized by rejection and discrimination from their family of origin, as well as by anxiety and trauma related to such experiences, which were often perpetrated by sexual/gender identity stigma, HIV stigma, and religiosity. More importantly, African American sexual and gender minority youth reported that their chosen families were vital sources of resiliency, providing significant social support and moderating physical stress via identity affirmation, advice provision, and role modeling (Hailey et al., 2020). To date, however, no systematic reviews have focused exclusively on HIV prevention research with Black MSM belonging to GFNs more broadly. This scoping review seeks to answer the following research questions: What is known in the scholarly literature about the psychosocial factors, including GFN characteristics, that influence risk and protective HIV-related behaviors among Black MSM who belong to GFNs in the United States? Additionally, what is the state of the science regarding interventions designed to address

HIV prevention in this population? Such knowledge will illuminate the current state of science as it relates to HIV prevention research with Black MSM belonging to GFNs and provide directions for future research.

Methods

To gain a better understanding of current HIV prevention research among Black MSM belonging to GFNs we employed Arksey and O'Malley's five-step methodological framework for scoping reviews: (1) identify the research question(s), (2) comprehensively search for relevant studies, (3) select studies based on established inclusion and exclusion criteria that are relevant to the literature, (4) chart the data according to key issues and themes, and (5) collate, summarize, and report the results (Arksey & O'Malley, 2005; Colquhoun et al., 2014). Findings were reported according to PRISMA for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018).

Inclusion criteria were scholarly, peer-reviewed articles, written in English and published in academic and/or scientific journals (research reports and literature reviews) between January 2006 and December 2020. Study samples of eligible articles had to include some portion of Black MSM who belonged to some form of GFN. No peer-reviewed articles were found on the topic prior to 2006. Sources were excluded if they were not published in scholarly, peer-reviewed journals (e.g., books, book chapters, news articles, dissertations, blog posts, and op-eds). Articles were not excluded if they were included in previous systematic reviews.

Search Strategy

To identify scholarly articles related to the population of interest, a 2-step search process was conducted in partnership with a librarian (See Supplemental Materials). PubMed/MEDLINE, CINAHL, PsychINFO, and SocINDEX were first searched using MeSH terms. A second search of databases with EMBASE and PsycINFO was conducted using keyword search strings. Words contained in the title and texts of articles, as well as index terms used to describe the articles, were analyzed for appropriateness of results. Reference lists were reviewed to identify articles not found via database searches (Levac et al., 2010). Finally, reference lists of publications included in the final analysis were searched.

The results from each search were digitally transferred into data management software (EndNote) for ease of management. The following data were extracted from each article and charted on a spreadsheet: author(s), year of publication, timeframe of data collection, location of data collection, type of study (qualitative vs. quantitative), aims/purpose, study population, sample size, study design, and major findings (Table 2). The final analysis included 28 article (see CONSORT chart in Figure 1).

Analyses were performed in several steps. First, each publication was grouped by the type of data presented in the results (e.g. quantitative, qualitative, mixed-methods). It is important to note that some studies were mixed-method in design but only included one type of finding in the respective article(s) (quantitative or qualitative). Next, each publication was organized into at least one of three non-mutually exclusive themes according to major findings (social network characteristics of GFNs, psychosocial

factors affecting vulnerability for HIV transmission, and HIV prevention interventions,). Then, each theme was examined for common patterns and exceptions. Finally, gaps were identified as possible areas for future research.

Results

Overall Sample for Analysis

The 28 articles identified by the search process were generated from 18 unique studies. Authors published 12 articles that contained only qualitative findings, 12 articles that contained only quantitative results, and 4 articles that contained both qualitative and quantitative findings. Sources consisted of characteristics of social networks (n=15), psychosocial factors affecting vulnerability for HIV transmission (n=13), and HIV prevention intervention studies (n=4) (Figure 2).

Social Network Characteristics of GFNs

Designs and Methods

The publications that were categorized in this theme were based on 7 cross-sectional quantitative analyses (Cahill et al., 2018; Holloway et al., 2014; Hosek et al., 2019; Murrill et al., 2008; Sanchez et al., 2010; Young et al., 2017; M. C. Zarwell & W. T. Robinson, 2018), 4 qualitative analyses (Arnold & Bailey, 2009; Dickson-Gomez et al., 2014; Galindo, 2013; Kubicek, Beyer, et al., 2013), and three mixed-method analyses (Holloway et al., 2012; Kipke et al., 2013; Kubicek, McNeeley, et al., 2013). Detailed information on the study design and methods is included in Table 2.

Sample Characteristics

Out of the 14 publications that were categorized as Social Network Characteristics of GFNs, 11 were based on data collected exclusively from HBC (Arnold & Bailey, 2009; Cahill et al., 2018; Galindo, 2013; Holloway et al., 2014; Holloway et al., 2012; Hosek et al., 2019; Kipke et al., 2013; Kubicek, Beyer, et al., 2013; Kubicek, McNeeley, et al., 2013; Murrill et al., 2008; Sanchez et al., 2010). Three studies were based on data collected from members of gay families and/or ballroom houses (Young et al., 2017), and constructed families (Dickson-Gomez et al., 2014; M. C. Zarwell & W. T. Robinson, 2018). Most publications (n=9) were based on studies conducted in Los Angeles (Holloway et al., 2014; Holloway et al., 2012; Kipke et al., 2013; Kubicek, Beyer, et al., 2013; Kubicek, McNeeley, et al., 2013), and New York City (Cahill et al., 2018; Galindo, 2013; Murrill et al., 2008; Sanchez et al., 2010). Young et al.'s study included the largest sample size (N=618) (Young et al., 2017) and Galindo's study included the smallest sample size (N=20) (Galindo, 2013).

Study Purposes

Primary topics of investigation included risk and protective factors for sexual health, roles taken up amongst GFN members, social inequities along lines of race and culture, as well as differences in social

versus sexual network members and GFN members versus non-GFN members in risk and protective factors (Arnold & Bailey, 2009; Dickson-Gomez et al., 2014; Holloway et al., 2014; Kubicek, Beyer, et al., 2013; Sanchez et al., 2010; Young et al., 2017; M. C. Zarwell & W. T. Robinson, 2018). Authors identified HIV prevention activities that occurred within the Los Angeles HBC and gauged HBC leaders' thoughts on culturally relevant approaches to HIV prevention (Holloway et al., 2012). Another study indicated various domains of resiliency and assets among GFNs that could be leveraged for intervention development (Kubicek, McNeeley, et al., 2013). Authors also investigated HIV risk behaviors and HIV prevalence (Hosek et al., 2019; Murrill et al., 2008), HIV-related stigma within the context of HBC (Galindo, 2013), rates of sexual and gender identity disclosure to healthcare providers, and healthcare access (Cahill et al., 2018). A more recent publication was based on baseline findings from a hybrid-design clinical trial to test the efficiency of a community-based sexual health intervention designed for HBC members (Hosek et al., 2019).

Major Findings

Individuals living with HIV were evenly spread out across GFNs and not clustered in specific networks as previously expected (Young et al., 2017). However, Black MSM who were members of ballroom houses seemed to have a high prevalence of HIV, being unaware of HIV status, high rates of CAI, lack of health insurance (approximately 45% of participants in Young et al.'s Chicago-based sample)(Young et al., 2017), substance use before or during sex, and higher rates of exchange sex (defined as sex in exchange for money and/or goods)(Hosek et al., 2019; Kipke et al., 2013; Murrill et al., 2008; Sanchez et al., 2010; Young et al., 2017). Black MSM in HBC specifically who reported a negative or unknown HIV status and were not tested for HIV infection within the past year had increased odds of being diagnosed with HIV while enrolled in the study (Murrill et al., 2008).

Protective features of GFNs have also been reported in the literature, including fewer risk behaviors on average among members of GFNs and frequent HIV/STI testing. Many participants reported at least one healthcare provider whom they saw on a regular basis, participation in at least one HIV prevention program, and high rates of lifetime HIV and STI testing (Cahill et al., 2018; Holloway et al., 2012; Young et al., 2017; M. C. Zarwell & W. T. Robinson, 2018).

Qualitative studies revealed that GFNs, primarily ballroom houses, had a longstanding history of conducting organically fostered methods of HIV prevention, termed *intravention*, by Bailey (Arnold & Bailey, 2009). Intravention is a term used to describe prevention and intervention activities organically taken up by communities encountering any given health disparity (Arnold & Bailey, 2009; Friedman et al., 2004). Intraventions were first introduced by the ballroom house, House of Latex in New York City during the early 90's and subsequently adopted by the House of Omni in Chicago (Phillips et al., 2011). HBC and GFN members partake in the processes of family making, reconstitution of gender/gender roles, and competition as a method to withstand and creatively respond to socioeconomic marginalization (Bailey, 2009). Arnold and Bailey contextualized the importance of "nurturing house mothers," who often provided safe sex advice based on life experience. Equal importance was placed on "guiding house fathers," who

held members accountable for bettering themselves economically as a means of addressing socioeconomic and systemic influences of HIV vulnerability (Arnold & Bailey, 2009). Thus, it is plausible that emotional support from house parents and members may mitigate the impact of various socioeconomic stressors, including homophobia, transphobia, and HIV-related stigma, among other forms of stress. HIV-related stigma within HBC houses was found to be the root of HIV concealment from fellow HBC members and, at times, subsequent withdrawal from the community (Galindo, 2013).

In addition to serving as structures for the deployment of HIV interventions, GFNs are social homes and sources of identity affirmation for lesbian, gay, bisexual, transgender, and queer youth of color (Arnold & Bailey, 2009; Dickson-Gomez et al., 2014; Holloway et al., 2014; Kubicek, Beyer, et al., 2013; Kubicek, McNeeley, et al., 2013) and other non-heteronormative individuals. Since these networks act as social homes, the roles adopted by members often include the provision of various forms of social support to other members, making GFNs ripe for culturally-tailored HIV prevention interventions (Arnold & Bailey, 2009; Dickson-Gomez et al., 2014; Kubicek, Beyer, et al., 2013).

Psychosocial Predictors of HIV Risk

Designs and Methods

Researchers conducted 11 distinct studies, which resulted in 13 published works. Seven articles were based on 5 unique quantitative analyses (Arnold et al., 2018; Cahill et al., 2018; Holloway et al., 2014; Hotton et al., 2020; Sanchez et al., 2010; Schrager et al., 2014; M. C. Zarwell & W. T. Robinson, 2018), and 5 articles based on 5 unique qualitative analyses (Alio et al., 2020; Castillo et al., 2012; Horne et al., 2015; Lemos et al., 2015; Levitt et al., 2017; Telander et al., 2017). One study conducted a mixed-method analysis based on qualitative interviews and self-report quantitative survey measures (Alio et al., 2020). Two of the 5 quantitative papers and 4 of the qualitative papers were based on studies that incorporated community-based participatory research principles (Alio et al., 2020; Castillo et al., 2012; Holloway et al., 2014; Lemos et al., 2015; Schrager et al., 2014; Telander et al., 2017). All results were based on cross-sectional observations (Table 2). Authors of quantitative publications reported utilizing Computer-Assisted Self Interviewing (CASI) to collect data (Arnold et al., 2018; Cahill et al., 2018; Holloway et al., 2014; Hotton et al., 2020; Sanchez et al., 2010; Schrager et al., 2014; M. C. Zarwell & W. T. Robinson, 2018). Grounded theory was commonly used to guide much of the qualitative analyses (Alio et al., 2020; Horne et al., 2015; Levitt et al., 2017).

Sample Characteristics

Authors identified a variety of psychosocial predictors of behaviors commonly associated with increased vulnerability for HIV transmission among GFNs. Samples consisted primarily of HBC parents and participants (Alio et al., 2020; Arnold et al., 2018; Cahill et al., 2018; Castillo et al., 2012; Holloway et al., 2014; Hotton et al., 2020; Lemos et al., 2015; Sanchez et al., 2010; Schrager et al., 2014; Telander et al., 2017). Two articles were based on samples of individuals who belonged to GFNs largely, some of whom were HBC-affiliated families (houses) while others were not (Levitt et al., 2017; M. C. Zarwell & W. T.

Robinson, 2018). One article was based on a sample of individuals seeking to join or already belonging to gay families (Horne et al., 2015). Zarwell and Robinson (M. C. Zarwell & W. T. Robinson, 2018) and Levitt et al. (Levitt et al., 2017) focused on “constructed families,” which was an encompassing term for ballroom houses, gay families, pageant houses and other forms of participant-reported named chosen kinship groups. Information on geographical locations of data collection can be found in Table 2.

Zarwell and Robinson's publication had the largest number of participants (N=533), which was based on data collected in New Orleans, Louisiana (M. C. Zarwell & W. T. Robinson, 2018). Studies conducted in New York City (Cahill et al., 2018; Sanchez et al., 2010) and Los Angeles (Arnold et al., 2018; Holloway et al., 2014; Schrager et al., 2014) had moderate samples (N=209 to 367). Horne et al.'s qualitative analysis based on data collected in Memphis, Tennessee had the lowest number of participants (N=10) (Horne et al., 2015), followed by Alio et al.'s qualitative analysis which consisted of 14 HBC leaders in Western New York (Alio et al., 2020).

Study Purposes

Publications that were categorized in this theme covered a variety of purposes related to sexual health and risk (Arnold et al., 2018; Castillo et al., 2012; Holloway et al., 2014; Horne et al., 2015; Sanchez et al., 2010; Schrager et al., 2014; M. C. Zarwell & W. T. Robinson, 2018). Some authors incorporated measures of social support (e.g. emotional and tangible support received from the fellow house and/or gay family members), connectedness to social networks, and how these concepts correlated to measures of sexual risk behaviors and substance use (Arnold et al., 2018; Holloway et al., 2014; Schrager et al., 2014). Lemos et al. incorporated the Diffusion of Innovation framework to explore social norms around HIV risk behaviors and how HIV prevention services can be modified to be more culturally responsive to the needs of HBC participants (Lemos et al., 2015). Alio et al. explored efforts by HBC leaders in Western New York (Rochester and Buffalo, NY) to address HIV and social issues among participants, as well as HBC leaders' knowledge of HIV prevention strategies, including HIV vaccine clinical trials (Alio et al., 2020).

Major Findings

Factors associated with decreased risk of HIV included behavioral factors (STI testing, reduced instances of CAI, decreased lifetime substance use) and psychosocial factors (having sexual partners with a high level of influence on the participant's life, being a member of a house, increased number of supportive social network members (Arnold et al., 2018; Holloway et al., 2014; Schrager et al., 2014; M. C. Zarwell & W. T. Robinson, 2018). In addition, participants belonging to networks that provided high levels of HIV-related support, as well as networks that had high levels of sexual and gender identity homophily, had significantly reduced instances of CAI and were more likely to have been tested for HIV and STIs in the past 6 months than those who had less social support (Arnold et al., 2018). Among MSM with greater numbers of sexual partners, having sexual partners who were highly influential (such as house parents) was associated with less risky sexual behavior (Schrager et al., 2014). Lastly, belonging to a named GFN, regardless of HBC affiliation, was also associated with less risky sexual behavior in comparison to

participants who did not belong to such networks (Holloway et al., 2014; M. C. Zarwell & W. T. Robinson, 2018).

Quantitatively-measured factors that were associated with increased HIV risk included a previous diagnosis of an STI, increased number of sexual partners, multi- and white ethnicity, alcohol and illicit substance use, and younger age (Schrager et al., 2014; M. C. Zarwell & W. T. Robinson, 2018). Hotton et al., published findings that illuminate a plausible mechanism for increased CAI among HBC participants (Hotton et al., 2020); namely, that depressive symptoms are positively associated with socio-structural stressors (intimate partner violence, perceived HIV stigma, Post-Traumatic Stress Syndrome symptoms, socio-economic marginalization [history of homelessness and sex in exchange for shelter, money or drugs]) and that both depressive symptoms and socio-structural stressors are positively associated with CAI (Hotton et al., 2020).

In our review of qualitative studies that were categorized in the Psychosocial Predictors of HIV Risk theme, we found that GFNs provide coping strategies to their members that can contribute to increased or decreased HIV-risk behaviors, particularly within the face of intersectional marginalization (Horne et al., 2015; Levitt et al., 2017). More specifically, the quality of relationships moderate protective factors against HIV among family networks; however, stigma can act as a barrier against discussing HIV (Horne et al., 2015; Lemos et al., 2015; Levitt et al., 2017). For example, HIV stigma may prevent some members from disclosing their HIV status to fellow GFN members. On the other hand, GFN members' demonstration of care regardless of HIV status is something that can reduce stigma among the family members. Additionally, values instilled within GFNs such as promoting high self-esteem and protection of family members, may serve as additional protective factors against HIV risk (Levitt et al., 2017; Telander et al., 2017). In contrast, some GFNs may promote sex work as a survival tool or encourage a risky sexual environment, thus promoting HIV risk factors (Castillo et al., 2012; Levitt et al., 2017). Additionally, in response to stigma, decisions to celebrate and self-define sexuality within affirming contexts may undermine HIV risk reduction efforts (Levitt et al., 2017).

HIV Prevention Intervention Studies

Designs and Methods

A total of 4 articles were categorized as HIV Prevention Intervention studies. Articles were categorized as HIV prevention intervention studies if they met the following criteria: 1) the article was focused on testing an intervention and 2) the article contained post-intervention findings. Two studies assessed community-informed interventions using quasi-experimental research designs, neither of which included control groups (Alio et al., 2014; Hosek et al., 2015). One intervention was developed based on data collected from in-depth interviews and collaborative workshops (Arnold et al., 2020). Finally, Castillo et al. identified risk factors that placed Young HBC Black MSM at increased risk for HIV and subsequently implemented structural processes to mitigate the impacts of such risk (Castillo et al., 2012). HIV prevention interventions were aimed at increasing social support, -HIV-related knowledge, access to health-specific resources, and willingness to participate in HIV vaccine research while decreasing HIV risk behavior and

structural barriers to HIV testing (Alio et al., 2014; Arnold et al., 2020; Castillo et al., 2012; Hosek et al., 2015). Findings were primarily reported quantitatively (Alio et al., 2014; Hosek et al., 2015), whereas Arnold et al. (Arnold et al., 2020) shared only qualitative results, and Castillo et al. shared both qualitative and quantitative findings (Castillo et al., 2012)

Sample Characteristics

The four articles in this theme encompassed 4 unique HIV prevention intervention studies composed primarily of Black MSM and transwomen. All participants were members of HBC. One publication, by Alio et al., was based on Project VOGUE, conducted in Western New York State from 2009 to 2011 (Alio et al., 2014). The POSSE Project was piloted in Chicago, Illinois prior to 2015 by Hosek et al. (Hosek et al., 2015). Castillo et al. conducted a root cause analysis involving local HBC youth ages 13-24 from Philadelphia, but did not indicate the data collection period (Castillo et al., 2012). Arnold et al., collected data between August 2016 – December 2017 in Oakland, California (Arnold et al., 2020). Sample sizes varied across the studies, with 14 participants included in Project VOGUE and 406 participants included in the Chicago-based POSSE Project pilot.

Study Purposes

Castillo's root cause analysis identified factors that placed HBC youth at an increased risk for HIV and implemented structural changes to increase HIV prevention and education (Castillo et al., 2012). Project VOGUE was designed to examine whether a culturally-tailored educational intervention increased willingness to participate in HIV vaccine research (Alio et al., 2014). The POSSE Project was conducted to test the preliminary feasibility and efficacy of a culturally-tailored HIV prevention intervention (Hosek et al., 2015). Arnold et al., worked with HBC members to co-create a mobile app aimed at promoting HIV testing, PrEP uptake, and linkage to HIV/STI care (Arnold et al., 2020).

Major Findings

The four HIV prevention interventions reviewed here were the only to be conducted with GFNs broadly, and were all conducted with the HBC (Alio et al., 2014; Arnold et al., 2020; Castillo et al., 2012; Hosek et al., 2015). Overall, these interventions addressed key drivers of vulnerability for HIV transmission such as CAI with multiple partners (of both known and unknown serostatus), self-reported HIV stigma, and HIV/STI testing (Alio et al., 2014; Castillo et al., 2012; Hosek et al., 2015). Increases in protective factors were noted, including the average amount of safer-sex conversations with GFN members across observation time points (Hosek et al., 2015), and HIV-related knowledge (Alio et al., 2014). Castillo et al.'s intervention led to the implementation of several strategies to address HIV risk among young Black HBC MSM: prevention themed balls, where HBC community members were expected to incorporate HIV prevention messaging into their competition; offering incentives for HBC members to get tested at balls; holding local houses accountable for educating their youth on HIV prevention and treatment; the addition of a HBC-specific workshop for Philadelphia's annual AIDS Education Month to discuss best practices and promising approaches. The HIV prevention intervention led by Arnold et al. identified features to make an

mHealth app for HIV education, prevention, and care engaging. The mHealth app featured: a minimalist, modern design; relatable and personable faces visible on the app; positive and fun themes; community-generated content; and a safe space for sharing vital information (Arnold et al., 2020). Although some of the outcomes from the aforementioned interventions are promising with regards to reducing vulnerability to HIV transmission for Black HBC MSM, authors also detailed findings that point to a dire need for additional work. Collectively, the authors noted the need for multi-tiered approaches that address individual HIV prevention and treatment needs, while addressing the macro context of structural violence in which such prevention and treatment needs arise.

Discussion

Despite numerous protective features associated with GFN membership, including fewer sexual risk behaviors in comparison to MSM who do not belong to GFN, frequent HIV and STI testing, and access to healthcare, Black HBC MSM still face disproportionately high HIV risk (Arnold et al., 2018; Hosek et al., 2019; Murrill et al., 2008). In the face of such health disparities, GFNs, particularly ballroom houses, have organically fostered and deployed HIV interventions (Bailey, 2009). The HBC, and GFNs at large, have found creative ways to combat socioeconomic marginalization; through the family-making and competitive processes of HBC, as well as through the gendered roles often taken on by GFN mothers and fathers (Arnold & Bailey, 2017; Horne et al., 2015; Levitt et al., 2017; Levitt et al., 2015). It is the “nurturing house mother” who often provides space for safer sex conversations, while the “guiding house father” holds his house children for bettering themselves economically as a method of addressing vulnerability for HIV (Arnold & Bailey, 2009; Bailey, 2009). These gendered and family-based connections between GFN parents and children, as well as the social connections established among fellow GFN children serve as the basis for provision of various forms of social support (Schrager et al., 2014; M. C. Zarwell & W. T. Robinson, 2018).

Network structure can be used to explain how GFN membership (or lack thereof) contributes to both protective factors and vulnerabilities for HIV (da Silva et al., 2020; Young et al., 2017). Being a member of a GFN is associated with several protective factors; increased HIV and STI testing, reduced instances of CAI, increased number of supportive social network members, decreased lifetime substance use (Arnold et al., 2018). Yet, GFN membership has also been associated with increased vulnerabilities: previous STI diagnosis, increased number of sexual partners, alcohol and illicit substance use, younger age (Schrager et al., 2014). Quality of relationships fostered within GFN as well as values central to specific GFNs play a key role in determining what protective factors and vulnerabilities are at play (Hotton et al., 2020). For example, members of a GFN that emphasizes open communication amongst members, fosters a destigmatizing environment via education, and serves as a source of emotional and instrumental support may be more likely to utilize preventative and treatment services for sexual health. Simultaneously, the same GFN may include members who are more likely to utilize survival sex for subsistence, are unstably housed, and use illicit substances recreationally. The social capital garnered by individual GFN members and the GFN as a collective may work to mitigate the deleterious impacts of persistent threats to sexual health (M. Zarwell & W. T. Robinson, 2018).

Although few HIV prevention interventions for GFNs have been conducted to date, there is early evidence of their saliency in addressing vulnerability to HIV infection among a sub-population of MSM. Interventions led to an overall increase in factors that promote sexual health as well as a decrease in factors that threaten sexual health; reduction of self-reported HIV stigma, decreases in CAI, increases in the number of reported safer sex conversations among GFN members, increases in HIV testing across measurement waves (Hosek et al., 2015), the implementation of local structural strategies to address HIV among Black HBC MSM (Arnold et al., 2020; Castillo et al., 2012), and increases in HIV-related knowledge across interventions (Alio et al., 2014). Culturally-tailored HIV prevention interventions may promote participation in HIV vaccine trials and reduce sexual risk factors for HIV, respectively. This finding is consistent with findings from HIV Vaccine Trials Networks (HPTN) 073 study, which revealed that culturally-tailored, client-centered counseling (C4) led to increases in HIV pre-exposure prophylaxis (PrEP) uptake among Black MSM (Wheeler et al., 2019). One finding that raises concern, discussed by Hosek et al., is the increase of substance use prior to sexual activity throughout a community-level risk-reduction messaging intervention (Hosek et al., 2015). This concern, however, should be interpreted with caution due to lack of a control group for the intervention. Without a control group, there is no way of knowing if increases in substance use prior to sexual activity were due to the intervention.

Several research teams utilized principles of CBPR to inform study design and implementation (Alio et al., 2014; Alio et al., 2020; Holloway et al., 2014; Murrill et al., 2008; Sanchez et al., 2010; Schragger et al., 2014). Some of the authors noted members of HBC in the acknowledgment section. Others noted that HBC members sometimes are employed by community organizations that serve Black MSM who are members of GFNs. GFN members, particularly GFN leaders (parents) are often well-positioned to provide input from the community to interventionists and researchers due to their existing social capital within their communities (Arnold & Bailey, 2017; Bailey, 2009, 2014; Kubicek, Beyer, et al., 2013). Such connections are in line with Colon's work on HBC members in New York City organizing around HIV prevention (Colon, 2012), as well as Castillo's root cause analysis conducted with the Connect-2-Protect project in Philadelphia (Castillo et al., 2012). Furthermore, such community-based practices are in line with Arnold and Bailey's call for more interdisciplinary research teams and CBPR projects that prioritize HBC members' experiences as they relate to HIV intervention (Arnold & Bailey, 2017).

Black MSM within and outside GFNs share common factors driving risk but GFNs have unique factors as well, which is largely derived from their network structure (Arnold et al., 2018; Horne et al., 2015; Young et al., 2017). The ways in which Black MSM who are members of GFNs experience protective and risk factors is structurally and contextually bound (largely dependent upon social determinants, such as the family/network and the geographic context they operate and are embedded in), which is supported by findings from social network studies on Black MSM and HIV risk (Bonett et al., 2020; da Silva et al., 2020; Hermanstynne et al., 2018).

Limitations

Although we conducted a rigorous review of relevant research, several limitations remain. Sources that were not English and/or published after April of 2020 were not included in this analysis, which could have reduced the ability to identify additional relevant sources. Many of the studies were cross-sectional and the intervention studies did not include control groups, thus limiting our ability to assume causality. Moreover, many of the articles did not report the specific number of Black MSM in samples. In other instances, findings based on Black MSM and transwomen were unable to be disaggregated, thus findings may be more reflective of the two populations and not just Black MSM. Furthermore, due to the heterogeneity of research types, aims, study designs, analyses, and outcomes, a meta-analysis could not be conducted.

Conclusions And Implications For Future Research

The unique social bonds fostered within gay family networks have the power to shape and reinforce social group norms which may promote or hinder risk and protective factors for HIV. Evidence to date has supported the influence of various psychosocial factors (e.g. regular STI testing, reduced instances of risky sex, buffering effects from stress, and decreased lifetime substance use) on decreased risk for HIV. Factors that were associated with increased HIV risk included the previous diagnosis of an STI, the number of sexual partners, and multi-ethnicity. Additionally, researchers have reported on various social network characteristics of GFNs including healthcare indicators, seroprevalence, distribution of seroprevalence across houses and gay families, and differences between Black MSM belonging to HBC and general samples of Black MSM.

Moving forward, researchers should quantitatively explore possible mechanisms through which gay family networks promote the reduction of risk behaviors (i.e. unprotected sexual intercourse and substance use). Furthermore, several researchers suggested utilizing the existing familial structure of these social networks to inform future HIV prevention and intervention research, as well as promote the general health of this unique subpopulation. The strong social bonds fostered via familial connections increases the potential influence of such family to motivate members to take action regarding health and wellness.

The HBC has received scholarly attention as a site for HIV prevention intervention research, as well as several cross-sectional studies of various network characteristics and psychosocial factors impacting HBC participants. However, much less is known about gay families, pageant houses, and other variations of gay family networks. Additional exploratory and quantitative research is suggested to increase knowledge about these alternative kinship structures and their potential role in furthering health disparities research and prevention. Future studies should also further contextualize the family dynamics of GFNs and how these dynamics influence sexual behaviors.

Declarations

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Ethics approval: This is a systematic review. The Research Subjects Review Board confirmed that no ethical approval is required.

Author contributions: MDRS conceived the paper, developed the search strategy, and drafted the manuscript. NML and JM refined the title, abstract, introduction, and search strategy. MDRS and NML contributed to the data extraction and full-text review processes. All authors revised and approved the final manuscript.

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Consent for publication: N/A

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Data Availability

All data generated and analyzed for this systematic review are included in this published article. All primary and secondary sources supporting the findings of this study were all publicly available at the time of submission.

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Tables

Tables 1 to 2 are available in the Supplementary Files section

Figures

Figure 1

CONSORT Chart

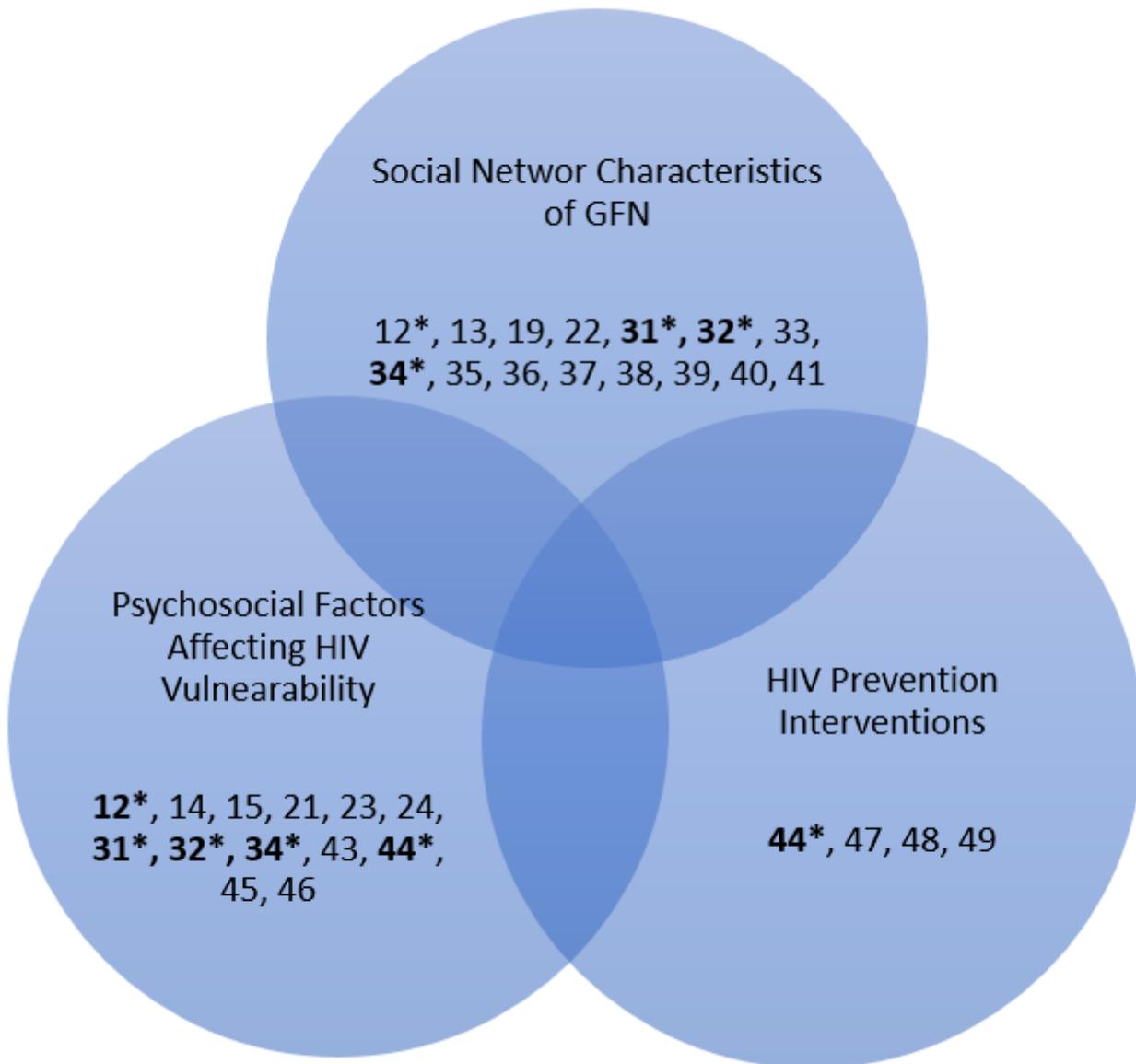


Figure 2

Concept Map

*Categorized into more than one theme

Supplementary Files

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