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# Increasing STI and HIV Preventive Behaviors and Addressing Community-Prioritized Social Determinants of Health Among Young GBQMSM and Transgender Women of Color: Piloting a Bilingual Multilevel Intervention

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**Background:** Sexually transmitted infections (STIs) and HIV disproportionately affect young people; gay, bisexual, queer, and other men who have sex with men (GBQMSM); transgender women; and persons of color. Our community-based participatory research partnership developed and implemented *Impact Triad*, a bilingual multilevel intervention harnessing peer navigation and mHealth to increase STI/HIV preventive behaviors and address 4 community-prioritized social determinants of health—education, employment, social support, and discrimination—among young African American/Black and Latine GBQMSM and transgender women.

**Methods:** Fifteen community-based peer navigators were trained to work within their social networks for 12 months. Each navigator engaged 5 social network members who completed baseline and immediate post-intervention assessments (retention rate, 97.3%). Regression modeling was used to assess changes in outcomes between baseline and follow-up.

**Results:** Among 74 enrolled social network members, the average age was 27.8 years; 61% identified as African American/Black, 31% as Latine, and 8% as multiracial/multiethnic. The majority self-identified as cisgender men and 8% as transgender women; 78% identified as gay. About half reported monthly income below \$1000.

Compared with baseline, at follow-up, social network members increased: STI screening ( $P = 0.001$ ), HIV testing ( $P = 0.001$ ), condom use ( $P = 0.03$ ), and preexposure prophylaxis use ( $P = 0.02$ ). Knowledge of preexposure prophylaxis ( $P < 0.0001$ ) and of community-based educational ( $P = 0.047$ ), job-training ( $P = 0.002$ ), and job-finding resources ( $P = 0.02$ ) also increased. Social support increased ( $P < 0.0001$ ) and perceived discrimination decreased ( $P < 0.01$ ).

**Conclusions:** Pilot findings suggest that *Impact Triad* is promising in increasing STI/HIV protective behaviors and addressing social determinants of health among young GBQMSM and transgender women of color; further testing is warranted.

Sexually transmitted infections (STIs) and HIV are among the most commonly reported diseases and contribute to some of the United States' most significant health disparities.<sup>1</sup> In 2022, more than 2.5 million cases of chlamydia, gonorrhea, and syphilis were reported in the United States,<sup>2</sup> and about half of these infections were among young people aged 15 to 24 years.<sup>3</sup> Furthermore, an estimated 1.2 million people in the United States are living with HIV, and 1 in 7 of them does not know it. Of those diagnosed with HIV in 2021, about 56% were among persons aged 13 to 34 years.<sup>4</sup>

The US South continues to experience disproportionate rates of STIs and HIV compared with other regions of the country. The South has the highest rates of chlamydia and gonorrhea and the second-highest rate of syphilis.<sup>2</sup> Southern states also account for an estimated 52% of new HIV cases annually, although 38% of the US population lives in the region. Eight of the 10 states with the highest rates of new HIV diagnoses, and 9 of the 10 metropolitan statistical areas with the highest rates, are in the South.<sup>5</sup> In 2022, North Carolina ranked 7th in the country for reported cases of chlamydia, 8th for gonorrhea, and 15th for primary and secondary syphilis.<sup>2</sup> Moreover, North Carolina consistently ranks in the top 12 US states with the highest rates of new HIV diagnoses.<sup>4</sup>

Gay, bisexual, queer, and other men who have sex with men (GBQMSM) and transgender women are severely impacted by STIs and HIV. Although GBQMSM represent approximately 4% of the adult male population in the United States,<sup>6</sup> in 2022 they accounted for more than a third of all primary and secondary syphilis cases and 71% of all new HIV infections.<sup>2,4</sup> It is estimated that about 14% of transgender women are living with HIV. In addition, transgender women tend to have low rates of screening for STIs and HIV, and thus, many are unaware of their status.<sup>7</sup> Moreover,

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STI and HIV disparities are particularly pronounced among GBQMSM and transgender women of color. If current HIV diagnosis rates persist, 1 in 2 African American/Black GBQMSM and 1 in 4 Latine\* GBQMSM may be diagnosed with HIV during their lifetime.<sup>8</sup> Similarly, HIV prevalence rates are estimated to be 44% among African American/Black transgender women and 26% among Latine transgender women, compared with 7% among White transgender women.<sup>7</sup>

The disproportionate rates of STIs and HIV among young GBQMSM and transgender women of color are influenced by multilevel determinants, including individual-level determinants (e.g., knowledge of STI and HIV transmission and prevention) and upstream social determinants of health including interpersonal (e.g., social and sexual networks and social support), societal (e.g., stigma, homophobia, and transphobia), and structural (e.g., poverty, violence, discrimination, and immigration status) factors. However, STI and HIV prevention efforts designed for GBQMSM and transgender women of color tend to focus only on changing individual-level determinants to reduce risk and often do not address the social determinants that affect the health of communities.<sup>9</sup> There remains a profound need for novel approaches to reduce STI and HIV disparities by addressing social determinants of health, while harnessing community lived experiences and existing assets.<sup>10,11</sup>

As part of Community Approaches to Reducing Sexually Transmitted Disease (CARS), a unique initiative of the US Centers for Disease Control and Prevention (CDC) designed to promote community engagement to increase STI prevention, screening, and treatment and to address related social determinants of health within communities experiencing STI and HIV disparities,<sup>12</sup> our long-standing and multisectoral community-based participatory research (CBPR) partnership developed<sup>13</sup> and piloted the *Impact Triad* intervention. Our objective was to determine whether young GBQMSM and transgender women of color who participated in the pilot of *Impact Triad* increased STI screening, HIV testing, condom use, preexposure prophylaxis (PrEP) use, and knowledge of existing resources to address community-prioritized social determinants of health. We conducted this study in Guilford County in the Piedmont Triad region of North Carolina, 2017–2022. This region has consistently higher rates of STIs and HIV than North Carolina and the United States overall.<sup>14</sup>

## METHODS

### Community-Based Participatory Research

Members of our partnership strive to reduce health disparities from positive, ecological perspectives; equalize power among partners; harness the strengths and resources of each partner; promote co-learning; and integrate knowledge acquisition and intervention.<sup>13,15</sup> The pilot of the *Impact Triad* intervention was guided by a 15-person study-specific steering committee, comprising local community members and representatives from community organizations.<sup>13</sup> Sixty-seven percent of the committee self-identified as GBQMSM and 27% as transgender women; 60% self-identified as African American/Black and 27% as Latine.

Throughout this study, we adhered to characteristics of effective community engagement<sup>12</sup> including nontoken representation of the impacted community in the study, agreement among steering committee members and the study team on the goals of the study, ongoing commitment and negotiation among steering committee members and the study team to work toward goals,

transparent processes and open communication among all committee members and the study team, a focus on community empowerment and an assets-based orientation to health promotion and disease prevention, ongoing reflection to ensure adherence to values and goals, and shared power and resources among committee members and the study team. Each committee member received a \$25 Visa card and a meal at each meeting.

### The *Impact Triad* Intervention

*Impact Triad* is based on the *HoMBReS*<sup>16</sup> and *HOLA*<sup>17</sup> interventions that our partnership developed and tested previously using CBPR. They are included in the *Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention*, compiled by the CDC (<https://www.cdc.gov/hiv/research/interventionresearch/compendium/>). These interventions leverage existing social networks within Spanish-speaking Latine communities. *HoMBReS* harnesses the social networks within recreational soccer leagues, and *HOLA* harnesses informal social networks among GBQMSM and transgender women.

*Impact Triad* includes 3 primary multilevel strategies: community-based peer navigation, use of social media, and anti-discrimination videos for service provider staff. The intervention aims to increase awareness of the magnitude and impact of STIs and HIV on GBQMSM and transgender communities; knowledge of different types of STIs and HIV, their modes of transmission, prevention, signs and symptoms, and local screening, testing, and treatment options; correct and consistent use of condoms and PrEP; understanding of how social determinants of health influence health outcomes including STIs and HIV; and use of available community resources that address STIs, HIV, and prioritized social determinants of health among young African American/Black and Latine GBQMSM and transgender women. The intervention also aims to reduce discrimination experienced by young African American/Black and Latine GBQMSM and transgender women when accessing local resources.

The intervention is based on social cognitive<sup>18</sup> and empowerment<sup>19</sup> theories and uses natural helping.<sup>16,20,21</sup> Natural helping refers to the spontaneous, informal style of social support provided by individuals or groups to others in their social networks or communities. Community leaders are trained and supported to use their personal relationships to support the needs of their social network members and help them engage with services. Natural helping has advantages over other strategies because, with carefully personalized messaging and support, these leaders can reach community members who are considered “hard-to-reach.” Because they are trusted community members, these leaders are turned to for assistance and are effective because they are part of the networks in which they work, in terms of self-identity, socioeconomic status, values, and lived experience; understand community needs and strengths and what is meaningful to members; communicate in the language of social network members; and incorporate culture to promote health.<sup>16,20,21</sup>

In this pilot, we recruited 15 African American/Black and Latine GBQMSM and transgender women who were informal community leaders to serve as community-based peer navigators, known as “community navigators” in English and “*navegantes comunitarios*” in Spanish. Because the reputation of each navigator as a leader within existing social networks is critical to the success of interventions that harness natural helping,<sup>16,20,21</sup> we recruited navigator candidates primarily through word-of-mouth and conducted individual interviews to assess and select them. Selection of navigators focused on 3 domains of primary characteristics that our CBPR partnership identified as essential to *Impact*

\*The term “Latine” uses a gender-neutral “e,” which replaces the gendered endings “a” and “o” as in “Latina” and “Latino” and is similar to “Latinx.” This term is increasingly used within Latine LGBTQ+ communities.

*Triad* navigator success: personal, performance, and situational characteristics (Table 1).

Mean navigator age was 31 years. Navigators identified as African American/Black (n = 7), Latine (n = 5), multiracial/multiethnic (n = 2), and Asian American (n = 1); cisgender men (n = 10), transgender women (n = 4), and nonbinary (n = 1); and gay (n = 10), heterosexual (n = 4), and bisexual (n = 1). All navigators reported sex with men.

In addition, each of 14 navigators recruited 5 members of their social networks who were not already participating through enrollment with another navigator; 1 navigator, however, recruited only 4 social network members. Other inclusion criteria for social network members were self-identifying as an African American/Black or Latine man or transgender women and reporting any sexual activity with men since the age of 16. Inclusion was assessed through an interviewer-administered screener. Although each navigator would work with more than 5 social network members, we wanted to collect data from a sample of their social network members to evaluate the pilot implementation of the intervention.

After navigators were consented, they were trained on how to explain details of the study to their social network members. After enrollment and collection of baseline data from social network members, navigators were trained in the *Impact Triad* intervention by a Latino cisgender gay man, a White cisgender heterosexual woman, and a White cisgender gay man during 4 sessions of 4 hours each in private meeting rooms within conveniently located community organizations. Sessions were held for 4 sequential weeks. The training sessions and activities are outlined in Table 2.

Training sessions were bilingual and interactive, and included opportunities for navigators to role play and practice informal helping. Each navigator received a satchel with the intervention logo embroidered on it that contained materials to distribute to their social network members as warranted, including all presentations used during the training and an instructional penis model. They also received pocket-sized cards outlining the locations of STI screening and HIV testing sites and depicting how to correctly use a condom, condoms, water-based lubricants, and brochures about STIs, HIV, and PrEP to share within their social networks. Navigators also received T-shirts and identification badges with the project logo. At the final training session, navigators participated in a graduation ceremony, and each received a framed signed certificate of training completion. Navigators then met monthly for 12 months as a group with the intervention coordinator to obtain additional support, restock satchels with materials to distribute to social network members, submit Activity Logs (which provided a mechanism for navigators to document their helping activities), share successes and problem-solve challenges, and build a sense of community among navigators. During this period, navigators promoted STI screening, HIV testing, and condom and PrEP use, and use of available resources (i.e., education, job training, and job-finding resources) to address social determinants of health among their social network members, using skills gained through the training.

There were no prescribed activities; rather, navigators informally provided personalized information to meet social network member individual and group needs and priorities related to prevention behaviors and social determinants of health, offered guidance on where and how to access local available services, reframed unhealthy and bolstered healthy norms and expectations related to sexual health, and brought the voices of young GBQMSM and transgender women of color to local community organizations. Each navigator received a \$50 stipend per month and was reimbursed for travel.

The steering committee, navigators, and study team also produced 6 brief online videos in English and Spanish presenting testimonials designed to raise consciousness among service providers about the challenges and barriers young African American/Black and Latine GBQMSM and transgender women face when seeking resources related to STIs and HIV and social determinants of health, and how providers can facilitate access. The videos were designed to not require a large commitment of time to watch and to meet the learning needs of service providers at all levels, with a particular focus on frontline staff. These videos were broadly disseminated by community partners, steering committee, navigators, and study team to providers of local services (e.g., health departments, libraries, Goodwill, and other social service organizations). They were also distributed by the project Facebook and Instagram accounts. Videos are available at: <https://www.youtube.com/channel/UCd7gOGhBerT0w1CTq5BwMcQ>.

**Pilot Design**

The *Triad Impact* intervention was tested using a single-group pretest-posttest design. Our partnership chose this design because we wanted to obtain early evidence of the efficacy of the intervention.

**Measurement**

Data were collected from enrolled social network participants at baseline and at immediate post-intervention, after 12 months of intervention. The assessment contained 48 items with both pre-defined and open-ended response categories and was completed in about 10 minutes. The assessment was read aloud by trained study team members in the language preferred by the participant (English or Spanish). Participants were reimbursed \$5 for their participation in each assessment.

**Demographic Characteristics**

Baseline demographic data, including age in years, race/ethnicity, country of origin, sexual orientation, gender identity, educational attainment, employment, and monthly income, were collected using measures that have been validated among English- and Spanish-speaking sexual and gender minorities.<sup>17,22</sup>

**TABLE 1.** Key Characteristics for Community Navigators

Domain	Operationalization
Personal characteristics	Being a natural leader, being dedicated and respectful, and having a sense of humor Each potential community navigator being (or have the potential to be trained to be) comfortable talking and offering sound advice about sensitive issues (e.g. sexual health, STIs, and HIV) while remaining discreet
Performance characteristics	Having the ability to read low-literacy intervention materials, complete low-literacy process evaluation data collection forms (i.e., Activity Logs), communicate orally, participate in meetings, and work with members of their social networks
Situational characteristics	Having time availability and access to transportation

**TABLE 2.** The *Impact Triad* Community Navigator Training Outline

Module	Activity	Brief Title/Description
1. Introduction to the Intervention, STIs, HIV, and Social Determinants of Health	Activity 1	Introductions and Intervention Rationale and Background
	Activity 2	Establishment of Group Norms
	Activity 3	Ice Breaker: Find Someone Who...
	Activity 4	Introduction to STIs and HIV
	Activity 5	Factors that Affect Our Health: Social Determinants of Health
	Activity 6	Practicing Roles of Community Navigators Homework: <i>Bring up STIs, HIV, or a social determinant of health during a conversation at least one friend.</i>
2. STI/HIV Prevention, Screening/Testing, and Treatment	Activity 1	Review of Previous Module and Discussion of Homework ( <i>How did it go? What did you learn?</i> )
	Activity 2	Learning and Practicing Correct Condom Use
	Activity 3	Why Some People Use Condoms and Why Some Don't
	Activity 4	Preventing HIV Using PrEP
	Activity 5	The Steps for Using PrEP
	Activity 6	STI Screening, HIV Testing, and PrEP Resources Homework: <i>Ask a friend if they know what PrEP is and explain it to them if they don't. What did you learn?</i>
3. Addressing Social Determinants of Health	Activity 1	Review of Previous Module and Discussion of Homework ( <i>How did it go? What did you learn?</i> )
	Activity 2	What It Means to Be a Gay, Bisexual, Queer, or Other MSM, or a Transgender Woman of Color
	Activity 3	How Our Environment Can Affect Our Health, and Our Behavior and How We Can Affect Our Environment
	Activity 4	Overcoming Barriers to Access Community Resources
	Activity 5	Learning How to Help Our Friends More Effectively Homework: <i>Tell a friend about a local resource that could help address one of their needs.</i>
4. Putting It Altogether	Activity 1	Review of Previous Module and Discussion of Homework ( <i>How did it go? What did you learn?</i> )
	Activity 2	Community Navigator Role Play
	Activity 3	The Role of the Community Navigator
	Activity 4	Review: Modes of Transmission, Prevention, Screening/Testing, and Treatment of STIs and HIV
	Activity 5	Myths and Facts about STIs and HIV
	Activity 6	Evaluating <i>Impact Triad</i>
	Activity 7	Using the Community Navigator Activity Log
	Activity 8	Training Conclusion and Distribution of Materials

## Primary Outcomes

We assessed STI screening and HIV testing during the past 12 months, condom use at most recent sex, and current PrEP use.

## Intermediate Outcomes

We also assessed knowledge of PrEP using a single item: “On a scale from 0 to 5, with 0 being knowing nothing at all and 5 being a lot, how much would you say you know about PrEP?” Knowledge of resources associated with prioritized social determinants of health was operationalized using these items: “If a friend of yours wanted to get help related to education, where would you send them?” “If a friend of yours wanted to get help related to job training, where would you send them?” and “If a friend of yours wanted to get help related to finding a job, where would you send them?” Response options were open ended and included “Don't know.” The open-ended responses were adjudicated to confirm whether the responses were locations that offered the resource.

We assessed perceived social support using an abbreviated and revised version of the 3-item social support subscale ( $\alpha = 0.74$ ) from The Coping Self Efficacy Scale.<sup>23</sup> We also assessed perceived discrimination ( $\alpha = 0.89$ ) using items that we adapted from a study of unfairness.<sup>24</sup> Of the 6 items, sample items include the following: “I often have the feeling that I am being treated unfairly because of my ethnicity or race”; “I have experienced violence due to my ethnicity or race”; and “I have experienced discrimination due to

my ethnicity or race.” Response options range from “Strongly disagree” (1) to “Strongly agree” (4).

Although partnership members were aware of other important constructs associated with STI screening, HIV testing, and sexual protective and risk factors (e.g., adherence to traditional notions of masculinity, homonegativity, transphobia, and community attachment), we strived to ensure low participant burden and focused on measuring variables that the steering committee and study team perceived to be most proximal to STIs, HIV, and social determinants of health.

## Statistical Analyses

We used descriptive statistical analyses to summarize participant demographics at baseline and for prevalence of primary and intermediate outcomes at both baseline and immediate post-intervention follow-up. Bivariate and multivariate regression modeling were used to assess the change in primary and intermediate outcomes between baseline and follow-up with random intercept for the individual participant and navigator. We used mixed-effects linear and logistic regression modeling for continuous and ordinal and binary outcomes, respectively, and multivariate models adjusted for baseline score, age, education, employment, country of origin, and clustering by social network group to obtain adjusted odds ratios and corresponding *P* values. We fit models using PROC MIXED procedure for continuous and ordinal

**TABLE 3.** Selected Baseline Characteristics of *Impact Triad* Pilot Participants (N = 74\*)

Characteristics	Mean (SD, Range) or N (%)
Age, y	27.8 (5.9, 18–40)
Race/ethnicity	
Black or African American	45 (60.8)
Latine	23 (31.1)
Other	6 (8.11)
Birth country	
El Salvador	2 (2.70)
Guatemala	2 (2.70)
Mexico	15 (20.3)
USA	55 (74.3)
Gender identity	
Man	68 (91.9)
Woman	2 (2.70)
Transgender woman	4 (5.41)
Sexual orientation	
Gay	58 (78.4)
Straight	1 (1.35)
Bisexual	12 (16.2)
Other	3 (4.05)
Educational attainment	
Less than high school or equivalent (GED)	11 (14.9)
High school or equivalent (GED)	21 (28.4)
Some college	23 (31.1)
2-y college degree	6 (8.11)
4-y college degree	10 (13.5)
Master's degree, professional degree, or more	3 (4.05)
Current employment status	
Employed	56 (76.7)
Unemployed	15 (20.6)
Disabled or not working	2 (2.74)
Monthly income	
None	7 (9.46)
\$1–\$499	11 (14.9)
\$500–\$999	16 (21.6)
\$1000–\$1999	25 (33.8)
\$2000–\$2999	9 (12.2)
\$3000 or more	6 (8.11)

\*One navigator recruited only 4 social network members as opposed to 5.

outcomes and PROC GLIMMIX procedure for all other binary outcomes. All analyses were conducted in SAS V9.4.

## Human Subjects

Human subject oversight was provided by the Institutional Review Board of Wake Forest University School of Medicine.

## RESULTS

At baseline, the mean age of the enrolled social network participants (N = 74) was 27.8 years; 61% identified as Black/African American, 31% as Latine, and 8% as other (e.g., more than 1 race/ethnicity), and 26% reported being born outside the United States. In terms of gender identity, 92% identified as men, 8% identified as transgender women, and 78% identified as gay. The majority reported full-time employment, and about a quarter reported having a 2-year college degree or higher. Almost half of the sample reported a monthly income less than \$1000 (Table 3). We had a 97.3% retention rate.

## Intervention Effects

At immediate post-intervention, participant STI screening, HIV testing, condom use, and PrEP use increased significantly (Table 4). After adjusting for baseline outcome score, age, education, employment, country of origin, and clustering by social network group, at 12-month follow-up, participants were as follows: 34.1 times as likely to report past 12-month STI screening ( $P = 0.001$ ), 12.6 times as likely to report past 12-month HIV testing ( $P = 0.001$ ), 2.6 times as likely to report condom use at most recent sex ( $P = 0.03$ ), and 28.2 times as likely to report current PrEP use ( $P = 0.02$ ).

We also observed marked differences in most intermediate outcomes. Participants also significantly increased knowledge of PrEP ( $P < 0.0001$ ) and of community-based educational ( $P = 0.047$ ), job-training resources ( $P = 0.002$ ), and job-finding resources ( $P = 0.02$ ). However, knowledge of STI screening and HIV testing did not increase significantly. Social support increased ( $P < 0.0001$ ) and perceived discrimination decreased ( $P < 0.01$ ).

## DISCUSSION

There remains a need for interventions that address multi-level factors that influence sexual risk. Although the use of peer

**TABLE 4.** Effects of the *Impact Triad* Intervention on Primary and Intermediate Intervention Outcomes: Bivariate and Multivariate Modeling

Variable	Baseline (% or $\bar{x}$ [SD] as Appropriate)	Immediate Post-Intervention (% or $\bar{x}$ [SD] as Appropriate)	OR	P	AOR	95% CI	P
Primary outcomes							
STI screening, past 12 mo	33.8	84.2	31.7	0.0006	34.1	4.5–261.3	0.001
HIV testing, past 12 mo	35.1	78.6	12.4	0.0001	12.6	2.9–52.8	0.001
Condom use, most recent	46.5	68.4	2.63	0.02	2.6	1.1–5.9	0.03
Current PrEP use	8.1	28.1	25.4	0.0003	28.2	1.8–431.3	0.02
Intermediate outcomes							
PrEP knowledge	2.9 (SD, 1.7)	3.9 (SD, 1.3)	1.04	<0.0001	1.1	0.7–1.5	<0.0001
Knowledge of STI screening and HIV testing resources	86.5	94.7	4.90	0.10	6.5	0.8–54.4	0.08
Knowledge of educational resources	60.8	75.4	2.02	0.09	2.3	1.01–5.68	0.047
Knowledge of job-training resources	37.8	68.4	6.41	0.002	6.9	2.1–22.8	0.002
Knowledge of job-finding resources	60.8	77.2	3.8	0.03	4.2	1.3–14.1	0.02
Social support	9.9 (SD, 3.1)	12.7 (SD, 2.6)	2.8	<0.0001	2.8	2.2–3.5	<0.0001
Perceived discrimination	16.1 (SD, 4.9)	14.5 (SD, 3.1)	0.9	0.03	1.3	0.3–6.6	0.048

AOR indicates adjusted odds ratio; CI, confidence interval; OR, odds ratio.

navigators has been shown to be potentially promising, community-based navigation has been understudied and the evidence of effectiveness remains limited.<sup>13,21</sup> The findings of this pilot demonstrate the potential of *Impact Triad*, which harnesses community-based peer navigators, in increasing STI and HIV preventive behaviors and addressing social determinants of health, including knowledge of educational, job-training, and job-finding resources; social support; and discrimination among young GBQMSM and transgender women of color.

The retention rate underscores the feasibility and acceptability of the intervention and suggests that *Impact Triad* engaged participants throughout the 12-month intervention period. This is particularly critical given that the population reached was highly vulnerable and considered to be difficult to reach, engage, and retain by researchers and practitioners because of a variety of factors, including their being marginalized and social and structural stigmas related to their identities and behaviors.<sup>24,25</sup>

By leveraging community-based peer navigators and existing social networks, *Impact Triad* effectively reached and engaged young GBQMSM and transgender women of color and addressed their barriers to accessing and using STI and HIV-related services. Furthermore, the intervention's impact on addressing social determinants of health is noteworthy. The increased knowledge of available resources for education, job training, and job finding indicates a positive shift in participants' awareness of local services to address upstream barriers to health. The observed increase in social support and decrease in perceived discrimination among participants suggest improvements in psychosocial factors that contribute to overall health outcomes.<sup>26</sup>

*Impact Triad* was a bilingual intervention, and we built cross-culture and cross-language relationships, learning, and understanding, which may contribute to a sense of social support, empowerment, and community capacity. Furthermore, the intervention leveraged the existing relationships among GBQMSM and transgender women. Our CBPR partnership has learned the importance of leveraging the existing supportive relationships across minoritized GBQMSM and transgender communities to support the health of these communities; GBQMSM and transgender women are often in intersecting social networks and rely on one another for support. This may be particularly true in lower density communities in the US South that often do not have the political, religious, social, ideological, economic, or cultural diversity and support of larger urban settings.<sup>17,27–29</sup>

## Limitations


Limitations of this pilot include its reliance on self-reported measures, which may be subject to social desirability biases. However, participants were provided motivating instructions that ensured confidentiality of responses and explained the importance of truthful answers to guide future efforts, which has been shown to increase honesty in self-reports.<sup>30</sup> Furthermore, the single-group design without a comparison or control group limits the ability to establish causality and rule out alternative explanations for the observed outcomes. Future research should incorporate designs that can strengthen causal inference and further evaluate the intervention.

Improved knowledge of educational and employment resources is an initial, but insufficient, step to addressing upstream social determinants of health. Future research should explore whether the use of resources increases and should expand the social determinants of health addressed by interventions such as *Impact Triad*. Since this pilot was conceptualized, additional social determinants of health have become increasingly relevant within our community, including food insecurity, housing access, and immigration policy.

## CONCLUSIONS

Important gaps exist in the current intervention arsenal for reducing STI and HIV risk among minoritized populations. *Impact Triad* represents a promising approach to addressing the complex interplay of individual, interpersonal, societal, and structural factors driving STI and HIV disparities among young GBQMSM and transgender women of color and can serve as a foundation for interventions designed to reduce STI and HIV risk and address social determinants of health among other populations.

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