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Understanding Social and Sexual Networks of Sexual Minority Men and Transgender Women in Guatemala City to Improve HIV Prevention Efforts

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Abstract

Sexual minority men and transgender women are disproportionately affected by HIV in Guatemala. Innovative prevention strategies are urgently needed to address these disparities. While social network approaches are frequently used to reach sexual minorities, little is known about the unique network characteristics among sub-groups. We conducted in-depth qualitative interviews with 13 gay-identifying men, eight non-gay-identifying men who have sex with men (MSM) and eight transgender women in Guatemala City. Using narrative and thematic coding procedures, we identified distinct patterns in the size, composition, and overlap between social and sexual networks across groups. Gay-identifying men had the largest, most supportive social networks, predominantly comprising family. For both non-gay-identifying MSM and transgender women, friends and sex clients provided more support. Transgender women reported the smallest social networks, least social support, and the most discrimination. HIV prevention efforts should be tailored to the specific sexual minority population and engage with strong ties.

Keywords

Sexual minorities; social and sexual networks; HIV prevention; Guatemala

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Across the world, sexual minority men and transgender women are disproportionately affected by HIV.[1,2] In many locations, the prevalence of HIV is increasing among populations of men who have sex with men (MSM) while overall new HIV infections are declining.[1] HIV in Guatemala, as in other Central American countries, is largely concentrated among MSM and transgender women. Until recently, transgender women have been included as a sub-group of MSM, delaying recognition of the burden of HIV in this population. The most recent estimates of HIV prevalence in Guatemala, conducted between late 2012 and early 2013 using Respondent Driven Sampling, are 8.9% among MSM and 23.8% among transgender women.[3,4] Compared with 0.8% national HIV prevalence among adults in Guatemala, these numbers highlight the need for improved understanding of the context of HIV vulnerability in this setting to inform innovative prevention efforts.

To date, HIV prevention efforts among MSM and transgender communities in Guatemala have focused on promoting safer sex and have relied primarily on Behavior Change Communication (BCC) and condom distribution, in which individuals from the target communities conduct outreach to distribute information and condoms among their peers.[5,6] The current data suggest, however, that individual-level behavioral interventions alone are not sufficient to substantially reduce the burden of HIV among MSM and transgender women, and fail to address the context in which behaviors and vulnerability occur.[5,7] Innovative efforts are needed that extend beyond these current programs to address the social and structural determinants of HIV prevention among sexual minorities in Guatemala.[5]

Despite a stated commitment to human rights by the Guatemalan government, MSM and transgender Guatemalans are consistently denied basic human rights and experience disproportionate levels of violence in an already extremely violent society.[8] Violence against transgender women and general transphobia is especially rampant.[8,9] Homosexuality is still viewed as a pathology and is highly stigmatized at all levels of Guatemalan society.[9] As a result, a large proportion of the male sexual minority community maintains same-sex relations in secrecy, which hampers efforts to provide appropriate prevention and care services.[10,11] Fear of discrimination related to sexual and gender identity and behaviors, lack of confidentiality, fear of HIV/STI stigma and discrimination, and distrust of service providers are reported barriers to sexual health services for MSM and transgender women in Guatemala City.[12]

One key social determinant of HIV vulnerability is social networks. Social network characteristics including size, composition, density, norms, and communication patterns have been associated, with both HIV risk and protective behaviors across diverse populations.[13–17] Among highly marginalized populations, networks may provide the only source of social and informational support.[18] In a qualitative study among male to female transgender sex workers in Boston, MA, the authors found that social networks, particularly the role of the transgender or gay mother, were crucial for helping younger transgender sex workers to navigate transactional sex encounters, given that so many were alienated from their families and faced daunting stigma, discrimination, and poverty.[19] On the other hand, networks composed of individuals who engage in risk behaviors and lack access to resources may heighten vulnerability. For example, among MSM in China, having a small social

network or a network where few people had tested for HIV was associated with not testing for HIV.[20] Low peer support for condoms and having a large MSM network was associated with unprotected anal intercourse (UAI) with casual partners among Black and Latino MSM in three U.S. cities.[21] In contrast, another study conducted among MSM in the U.S., found that having dense networks, or networks where people know each other, was associated with having fewer numbers of anal sex partners, which may reflect the influence of network norms and scrutiny by peers in the network.[22] Similarly, among Black, Asian/Pacific Islander, and Latino MSM in Los Angeles, dense networks were associated with less engagement in HIV-nonconcordant UAI.[23] More specifically, safer sex peer norms were more protective against UAI among network ties in which men felt closer to those individuals compared with ties that men felt were less close.[23] These studies reflect the potentially influential role of networks, both positive and negative, among MSM and transgender populations.

Social influence-based interventions that utilize and/or cultivate social network ties have been the hallmark of HIV prevention interventions with gay and bisexual-identifying MSM. Such models are frequently informed by diffusion of innovation, social influence, and community empowerment theories and include the use of peer educators or natural opinion leaders within networks who promote HIV protective behaviors including condom use[18,24–29] and HIV testing.[29,30] While the success of these interventions confirm the potential for using social networks to promote prevention, very little research has compared social networks among different categories of MSM and transgender women in the same setting to elucidate how networks may differ and how different types of social network ties influence behavior.

Increasingly, researchers in the Latin American region are paying attention to the diversity of sexual identities, roles and behaviors, and the implications of these for disease transmission and vulnerability. For example, a qualitative study conducted in Guatemala documented important differences in health-seeking behaviors and barriers to using sexual health services in Guatemala based upon gender and sexual identity. Non-gay-identifying MSM did not want to call attention to their same sex behavior and thus were more comfortable accessing services at public health clinics.[12] Meanwhile, gay-identifying MSM more often sought care at one of the non-governmental organizations (NGOs) dedicated to the sexual diversity community, which were considered safe and welcoming spaces.[12] Specifically related to social network differences, among gay, non-gay identifying MSM, and transgender women in El Salvador, researchers found that transgender women had relatively homogenous social networks that were very efficient at reaching out to other transgender women as compared to the other groups.[31] A study conducted among MSM in Peru documented that identification with different sexual roles (*pasivo*/receptive/feminine, *activo*/insertive/masculine, or *moderno*/versatile) contributed to the formation of social networks, which in turn influenced access to sexual health education and prevention.[32] While study participants who endorsed *pasivo* (mostly transgender and some gay-identified participants) or *moderno* (mostly gay-identified participants) sex roles were integrated into social networks of MSM and aware of HIV prevention efforts, participants who endorsed *activo* roles (heterosexual-identified participants) were less knowledgeable of HIV/STI

prevention campaigns targeted to the MSM community.[32] Similarly, these men who endorsed an *activo* role were much more likely to report not having any friends who identified as gay, bisexual, or transgender (84.1% *vs*. 29.6% for *pasivo* and 35.2% for *moderno* participants) and that few or none of their friends knew about their same sex behavior (85.4% *vs*. 16.9% for *pasivo* and 18.9% for *moderno* participants).[32] Taken together, these studies indicate that network diversity within the larger MSM and transgender communities exists; questions remain about what these differences are and how they can be harnessed to deliver tailored and effective HIV prevention efforts.

The purpose of this study is to compare qualitatively social and sexual networks among three groups in Guatemala City: gay-identifying men, non-gay identifying MSM, and transgender women. Through this comparison, we provide insights into network composition and the contexts within which networks form and operate, and discuss the implications for network-based HIV prevention.

Methods

Participants and recruitment

We conducted in-depth interviews with: 1) gay-identified men (n=13), 2) non-gay-identified MSM (n=8), and 3) transgender women (n=8). Participants were purposively sampled from these sub-groups to obtain a range of perspectives and experiences. Study team members determined these three categories to be the most salient based on prior experience with the MSM and transgender communities in Guatemala City and based on our interest in providing applicable information for intervention design. Study eligibility within these groups required being at least 18 years old and having had sexual intercourse with a man in the previous 12 months.

Initial participants were identified by a Guatemalan NGO providing health education to sexual minorities. Given that some of their prevention campaigns specifically target sex workers, over one-third of the sample were former or current sex workers. Additionally, three participants were recruited *via* a gay social network site. Recruitment was completed once the study team agreed that a variety of perspectives from each of the three groups had been captured and thematic saturation regarding social network composition had been reached.[33]

Data collection took place between February and April, 2010. Interviews were conducted with consenting participants in Spanish by three Guatemalan male interviewers using a semi-structured guide. The guide consisted of questions about the participants' social and sexual networks, where they meet new partners, involvement in commercial sex work, as well as experiences with sexual health services, HIV testing, and prevention campaigns. For the purposes of this analysis, we focus on the questions about social and sexual network characteristics and involvement in prevention campaigns. Information on social networks was obtained by asking participants to think about their friends and people closest to them and to list up to eight people. For each identified social network member, a series of questions was asked about their relationship, how often they saw one another, where they would meet, communication patterns, social support, and alcohol and drug use. Sexual

networks were assessed by asking participants to list their three most recent sex partners in the past year. For each sexual partner, participants shared information about their relationship, drug and alcohol use, violence, condom use, and communication patterns. The same individuals could be listed in both social and sexual networks. Interviewers were trained on the semi-structured interview guide and encouraged to probe in order to obtain more depth. Interviews lasted 60–90 minutes and took place in private offices in public health clinics and NGO offices, and other places chosen by the participant. All interviews were audio-recorded and transcribed by native Spanish speakers.

All study procedures were approved by the Del Valle University Ethics Review Board, the Associate Director for Science from the US Centers for Disease Control and Prevention, and the University of North Carolina at Chapel Hill's Institutional Review Board.

Data analysis

Data were analyzed in Spanish. Following a thorough reading of transcripts from each group, we developed a list of descriptive and interpretive codes. All transcripts were coded by the first author using ATLAS.ti software (Version 6.2, Scientific Software Development, 2011). Examples of descriptive codes included alcohol, condoms, HIV and sex work. The code list was modified during the coding process to reflect newly identified categories and relationships between categories. For example, we used an *In Vivo* code "*siempre lo hacemos en contexto de trabajo*" (we always do it [alcohol] in the context of work [transactional sex]), to capture the overlapping narratives about alcohol and sex work among transgender participants. The stereotype held by family members of gay participants that all gay men were HIV positive was coded as "*gay es VIH*" (gay is HIV). In addition to the coding process, we wrote analytic summaries of each participant's social and sexual networks and made drawings to portray network size, composition, and the overlap between social and sexual networks.[34] A matrix was created in order to compare network characteristics across the three sub-groups and within individuals.[35] Quotations were translated into English by the first author, and were reviewed and edited by the last author. Both authors are native English speakers who are fluent in Spanish. Quotations are presented with pseudonyms.

Results

Among the three study groups, we observed distinct patterns in the size and composition of networks, as well as in the overlap between social and sexual networks. We begin by summarizing our findings on social networks, followed by sexual networks. Throughout the results section, we explore how these different network patterns are shaped by contextual factors, namely the participants' disclosure status of their sexual and gender identity, family relationships, and economic circumstances. Finally, we discuss sources of social support and communication about HIV within networks and their implications for HIV prevention. Although we organize our findings by the three groups into which participants were originally recruited based on their sexual and gender self-identification (e.g., gay-identifying, non-gay-identifying, and transgender), we acknowledge that these are not discrete categories and that within each group we observed fluidity across categories.

Sample characteristics

The majority of the sample was single and younger than 35-years-old (Table 1). Two non-gay-identified MSM participants were married to women. Educational attainment varied widely with several having completed only primary school and nearly one-third having attended university, mostly in the gay group. Most participants were working at the time of the interview; over one-third were active sex workers. Sex work, past and present, was most common among non-gay-identified MSM and transgender participants. Four participants, all non-gay-identified MSM, were immigrants from El Salvador and Honduras.

Social networks

Gay-identified men—The social networks reported by gay-identifying men were larger on average than those of MSM and transgender participants. Median network size was 6.0 (range 2 to 8) (Table 2). All but one gay participant resided with their families of origin and all included family members in their social networks, three of which included kin only. The median number of family members enumerated by gay men was 3.0 but was as high as 8 (the maximum number elicited). Most of the gay-identifying participants were open with their family about their identities. Among the social networks of gay-identifying men, mothers were commonly the first to be mentioned, followed by siblings, nieces and nephews. To a lesser extent, social networks of gay men also included boyfriends, ex-boyfriends, friends (often gay), and coworkers.

In general, gay-identified participants received more social support from family members than non-gay-identified MSM and transgender participants received. Emotional support (defined as knowing they could count on someone or having someone who would listen and help with their problems) was the most common type, followed by economic support. Gay-identified participants commonly described both giving and receiving support. Because of their strong family relationships and higher educational level, they were not in as dire economic circumstances as non-gay-identified MSM or transgender participants. Many gay-identified participants were supported financially by family members or shared household responsibilities and costs among relatives.

Gay-identified participants most commonly extolled the emotional support from their mothers. Jose Luis, a 19-year-old who lived with his mother, sister, and cousin told the interviewer that while his mother did not know his true sexual identity, she was supportive of him otherwise.

> With my mother, I have a relationship….pretty beautiful, aside from the fact that she does not know that I am gay. So, she supports me in everything, tries to help me in what she can, as I do for her. She gives me all of her love and I, I give the same to her. She always protects me, a lot. She is really affectionate.

Although mothers were an important source of support for gay men, their support was sometimes complicated when their mothers found out their sons were gay. For several gay-identified men, disclosing their identity to family members caused some disruption and conflict, but did not result in the level of ostracism experienced by transgender participants.

For instance, 18-year-old Daniel discussed how difficult it was when he first told his mother and sister he was gay:

> It was a little tense for a while…when I told her that I was gay. It was really hard, right, because mothers, the first thing they do is blame themselves…[they think] what did I do wrong?…how can I help you change? And then they are picky about who you hang out with. So, for a time we were pretty distant from each other because I preferred, I preferred not to be near her so that she didn't have to see.

Now, two years later, Daniel is more comfortable with his mother to the point that he shares with her more about his boy friend and she tells him to protect himself.

In addition to their mothers, siblings provided an important source of support. A few gay-identified participants also said that their nieces and nephews provided them with meaningful social roles to fill, especially given that they did not plan to have kids of their own. Saul, who was diagnosed with AIDS, described his nephew as his "reason for living."

Members of gay-identifying social networks talked about HIV with family members more readily than than members of MSM or transgender networks did. Sometimes, a television program or an event like World AIDS day led to family discussions about HIV. One gay participant shared how his close friend's death from AIDS took away the taboo from talking about HIV in his family. However, descriptions of HIV discussions within families reflected more normative discourse around common prevention messages to "protect yourself" and "be careful" rather than discussion of more intimate personal experiences. Several gay participants talked about how family members automatically associated being gay with HIV or had the impression that people with HIV were prostitutes, drug addicts, or promiscuous. For example, Daniel, an 18-year-old gay-identified participant described a conversation with his sister about HIV:

> Immediately what people think about when they hear the word homosexual is HIV. So, there is always this stereotype that if you are gay, you have AIDS so [they] always say: "Be careful, protect yourself, be careful with the people you go out with," things like that.

Two participants said that their parents were the ones who first taught them about HIV or gave them condoms. More often, however, gay-identified participants were the ones educating family members about HIV and protection based on information obtained in workshops from one of the local NGOs dedicated to the sexual diversity community. Almost all of the gay participants had participated in prevention campaigns or HIV testing at one of the local NGOs.

Friends, often other gay men, provided another important source of social support. One participant exclaimed that his gay friend is the person with whom he can confide in the most since they are "in the same boat." Even so, condom use was not a topic that most participants had talked about deeply with friends. Nelson, a 38-year-old gay-identified participant who had been involved with two NGOs in the nineties handing out condoms, described communication with his friends:

> We haven't really talked about it openly with them because we get together, we hang out, but we talk about other situations; we are all sensitized about using [condoms], but to talk about [using condoms] in real life, "Do you use them?" or as a direct topic of conversation, no. We haven't done that.

This passage shows that conversations about condoms were not common within Nelson's networks. Only one gay-identified participant, Estuardo, said that his conversation with one friend had gone more deeply than the typical "protect yourself" discourse:

> Among your friends, even if you have a lot of trust, eh, you are always going to act politically correct. So, for example, the times when we have talked about it [condoms], we all protect ourselves, we all take care of ourselves. However, with my best friend, with whom I have more communication, yes, we do talk about [condoms] more openly. Because I made a mistake one time and didn't use a condom because I felt in love, I let myself go with the moment and I didn't use it, and then we talked about it.

This passage highlights the discursive practices around condom use as the expected practice among groups of friends and then between close friends. Oftentimes there were one or two members in their networks with whom gay participants did not discuss HIV, either because they were not open about their sexuality with that person, the person was described as being conservative (*machista*) or simply someone with whom they did not discuss those topics, such as a boss.

Non-gay-identified MSM—Non-gay-identified MSM participants had smaller social networks than gay participants, with a median size of 4.0 (range 3 to 8). In contrast to the social networks of gay men, non-gay-identified MSM social networks were more diversely populated with friends and partners. The median number of family members in their social networks was 2.0 and this included wives and children that two participants mentioned. Only two of the eight non-gay-identified MSM lived with members of their family of origin. The low number who resided with family may have been because four were immigrants whose families remained in their countries of origin. Most non-gay-identified MSM reported that they had not disclosed their same-sex behavior to their family; two of them were married to women who were unaware that they were having sex with men. Thirty-five-year-old Tomás's description of his relationship with his wife exemplifies these situations:

> In fact, [my wife] does not know anything about my private sexual encounters. That I have relations with other people of my same sex, she does not know anything about this.

Three participants (two of whom were immigrants) did not list kin in their networks and did not reveal whether their families were aware of their same sex behavior. In contrast to gay participants, non-gay-identified MSM participants did not discuss HIV and protection with family members, with the exception of their wives. This may reflect the fact that they were not open about their sexual behavior with their family or in the case of immigrants, lived long distances from family members.

Non-gay-identified MSM reported receiving emotional support from fewer members of their social networks than gay-identified men did. Their emotional support came primarily from friends rather than family. In general non-gay-identified MSM participants faced more difficult economic circumstances than gay participants and in some cases their networks were more restricted by what they could give. Non-gay-identified MSM participants also had fewer resources to provide economically for friends and family. Carlos, a 31-year-old migrant from Honduras, said that the first person he met when he came to Guatemala was a 16-year-old male who offered him a hotel room and who was the first man he penetrated. Now he is one of Carlos' closest friends and they provide mutual support based on whatever they have: "If he has money, I have money, if I have food and he has not eaten, then we share. We have a beautiful friendship."

Conversations related to HIV were more common among members of non-gay-identified MSM social networks with whom they were sexually active, as was observed among gay participants. David tells one of his social network contacts and sex partner, a transgender woman, that she makes him uncomfortable when she has sex with others because she may not know them or may not use protection and David has his wife and son to protect. As we found with gay participants, conversations about HIV and condoms among MSM were often superficial and focused on whether or not they used protection when discussing recent sexual adventures. Tómas counseled his younger male neighbor by saying,

> Always use a condom because an instance of pleasure can complicate your whole life. One can never be sure, even with the woman you live with. I have my wife and I go to work, and I don't know if another guy is over there drinking and all of a sudden he wants to put a stamp on it [have sex with her], as I like to put it. Always use a condom I say.

Though non-gay-identified MSM participants were less likely than either gay or transgender participants to report partaking in prevention campaigns and activities at NGOs, two of them who did attend indicated that they shared what they had learned with friends in their social network.

Transgender—Transgender participants had the smallest social networks and reported receiving support from fewer people. Though they could enumerate up to eight social network members, no transgender participant listed more than six contacts. Median network size was 3.5 (range 1 to 6). One transgender participant only listed one person in her network, another sex worker who was much younger, and recalled how many of her friends had been lost to AIDS. She described herself as being "a bit of a loner."

While slightly more than half of the transgender participants lived with family, few listed their mothers or other family members in their network. The median number of kin in transgender participants' networks was only 1.0. Six out of eight transgender participants were open about their identities with family. Several reported having been kicked out of the house after revealing their identities to their family. Instead of family members, the social networks of transgender participants were more commonly populated with friends, in particular other transgender women.

Among the three transgender participants that did list family in their networks, all discussed how their identity hindered their relationships. Karla talked about coming out to her siblings once her mother had died and her brother reacting by saying that God had made a mistake in making her this way. Laura, a 25-year-old sex worker, portrayed the difficult situations that transgender women often encountered and why they depended so much upon friends, in this example another sex worker who provided both emotional and economic support:

> Joana is a person I met in the capital…when I was thrown out of my house. I didn't have anywhere to go and I didn't have anything to eat. She was the first person to give me food. She helped me get ahead. She motivated me to keep going and see things in the future. And during this time that she was helping me…she never asked me for money. And she always gave me advice, to accept myself as I was and that everything happens for a reason.

The recurring reference to social network members providing support for basic needs such as food and shelter by transgender participants highlights the precariousness of their daily lives. As we found among non-gay-identifying MSM, transgender networks were limited by what they could provide economically. Beyond economic support, they described how social network members looked out for one another and provided an important source of protection, particularly for those involved in sex work who experienced frequent violence. Transgender participants spoke about drug and alcohol use and violence in the context of sex work more than participants in other groups, another example of their highly vulnerable daily experience.

Six of the eight transgender participants discussed HIV with someone in their social network. Twenty-year-old Mateo, who referred to himself as "*transvesti*" described how the advice he receives from his good friend Henry, who used to be "*transvesti*" but no longer dresses up, helped him:

> He gives me advice. That I should be careful by using condoms, or that I should keep going to my check-ups, that I should be really careful, and he tells me some of the ways that HIV can be transmitted, you see. Even though I have knowledge, it is helpful that he is informed.

Angel shared how a mutual friends' death from AIDS motivated her to protect herself:

> We have talked about it [HIV] because she had an uncle who worked with me in the transgender environment and this uncle died of HIV. So, we advise each other a lot about how no matter how much a client wants to pay, never accept not using condoms. Because we have an example of a person who died of this disease and we don't like to run those same risks.

In conversations about HIV, transgender participants often recalled friends who had either died or were living with the virus, which resonates with the recent epidemiological data indicating nearly one-quarter of the transgender population is living with HIV.

Transgender participants discussed HIV testing among themselves more than the other two groups, perhaps because so many were sex workers who tested regularly. Karla says that the

majority of her friends get tested every two months, and those that are sex workers go together in groups on a designated day to the public STI clinic for their "*control*" (checkup).

Several transgender participants reported attending trainings on HIV and STIs with members of their social networks. In addition to the health education, Flor, 23, said the most important thing she gained at a transgender NGO was

> …the friendship among us all, what it means to be united, because I think that it was something really amazing for me, unforgettable, the time that we spent together.

This statement highlights how these organizations serve as critical sources of social support for the most disenfranchised and vulnerable who lack access to larger networks.

Having organizations dedicated to the transgender community was particularly important for those who reported experiencing discrimination. Angel, 37, described how health talks provided a buffer against relentless discrimination:

> What these health talks have taught me is…to not feel discriminated against because they always say if society discriminates against us for wanting to have a defined sexuality, why are we going to reject ourselves among each other?

Angel's remark reveals how what he calls a "health" talk went way beyond the topic of health and addressed structural factors such as discrimination and social cohesion. Even within the sexual minority community transgender women encountered discrimination. A few gay-identified and non-gay-identified MSM participants did not like attending workshops with transgender participants. Twenty-four-year-old Leo, who was gay, said in reference to attending workshops with transgender women, "In my opinion, it is enough to be gay but not to have another hurdle to be a [transgender] woman. That is the only thing I did not like." This statement highlights the need for population specific interventions.

Sexual networks

Gay-identified men—The sexual networks of gay-identified men were mostly populated by casual partners called "*amigos*," or friends. Ex-boyfriends and current boyfriends were also frequently mentioned. Only two gay-identified participants listed women in their sexual networks (a girlfriend and ex-girlfriend) and only one gay participant listed a sex work client in his sexual network (Table 2). About half of gay-identified participants listed the same person in both their sexual and social networks meaning that they were close to and frequently saw these sexual partners.

Though less commonly mentioned than family and friends, boyfriends also provided emotional support, such as listening to one another's problems. A few gay-identified participants reported providing and/or receiving economic support from boyfriends. Participants discussed HIV and condom use more with boyfriends and sex partners than with family or friends. These conversations included discussing strategies to prevent HIV in committed relationships, such as getting tested before having sex, negotiating whether or not to use condoms, being faithful, and asking partners to use condoms outside the relationship. Boyfriends also encouraged partners to attend *charlas*, or educational talks at the various

NGOs, and offered support for condom use. For example, 19-year-old Jose Luis described how his boyfriend praises him for going to *charlas*:

> He supports me when I go to charlas and all that…He says to me, "Excellent, love, keep going because whatever you learn, I learn," he tells me. Because he also says to me, "Even though we are a couple, we still need to protect ourselves with whatever we do."

Non-gay identified MSM—The sexual networks of non-gay-identified MSM participants consisted primarily of casual partners, followed by sex work clients. Less commonly mentioned were serious partners, such as boyfriends or wives. Three non-gay-identified MSM participants listed women in their sexual networks (two wives and one friend). Like gay participants, non-gay-identified MSM also had some overlap between their social and sexual networks. Five out of eight participants in this group were sexually active with at least one or more members of their social network.

For non-gay-identified MSM, sex work clients served as a source of economic and emotional support. Javier, who listed only clients in his social network, was able to pay for housing because of his regular clients. Often these relationships with clients were, in the words of one non-gay-identified MSM participant, "not just a relationship for money." Regular sex work clients were commonly acknowledged as a source of companionship as well as economic support.

Transgender—The sexual networks of transgender participants consisted about equally of clients, casual partners and ex-boyfriends. Only one participant listed a current boyfriend in her sexual network. Transgender women had the least overlap between social and sexual networks suggesting that they were less close to and saw their sex partners less frequently. Only one listed a sex partner in her social network.

Clients were also a source of economic and emotional support for transgender women. Some participants had known their clients for years and saw them frequently, referring to these clients as "fixed," "regular," or "special." The following quotation from Flor, 21, portrays how trusted regular clients were characterized as important people:

> They are bisexual men, and, well, for me they are very important people in my life because they are not like other people who are violent and they understand me, they support me. Eh….they give me their trust, we talk about our problems that all of us have.

In contrast to gay-identified participants whose networks often included a serious partner, only one transgender participant listed a boyfriend in her social network and talked about the motivation he provided to continue attending *charlas* to obtain sexual health information. "He motivates me to keep going, to go to the health center, to places where they can orient me more about…everything related to sexually transmitted diseases and all of that." While transgender participants suffered a lot of violence and abuse from clients, these quotations reflect how regular clients and boyfriends could form a key part of transgender participants' support for HIV prevention.

Discussion

To our knowledge, this is the first study to provide an in-depth examination of the social and sexual networks of gay-identifying men, non-gay-identifying MSM, and transgender women in Guatemala or anywhere in Latin America. We observed distinct patterns in the size, composition, and overlap between social and sexual networks across the three groups. We also found that the nature of social network ties—including the availability of social support and patterns of exchange, access to information, and communication about HIV—varied based on these distinct network patterns and the context in which networks functioned. Finally we observed reluctance from some non-gay-identifying participants to participate in prevention efforts with transgender participants. Based on these findings, we argue that a more tailored approach to HIV prevention and treatment is needed within the diverse MSM and transgender community of Guatemala.

Understanding the diversity of social and sexual network composition, as well as network overlap, is crucial for developing effective HIV prevention programs for different sexual minority groups. For example, based on research among sexual minorities in Peru, the authors concluded that HIV prevention efforts rooted in open communication, such as serostatus disclosure and partner notification, may be more appropriate for sexual networks of *moderno*/versatile (mostly gay-identified) MSM where sex partners are more likely to be considered equal as compared to *activo/pasivo* (insertive/receptive) sexual partnerships between mostly heterosexual-identified participants and transgender or gay-identified participants.[32] Meanwhile for *activo/pasivo* sexual partnerships, strategies such as pre-exposure prophylaxis, rectal condoms and microbicides may be warranted given the unequal power dynamics and disparities in HIV prevalence between these two groups.[32] In one of the few studies to compare social and sexual networks among men who had sex with men only and men who had sex with both men and women, the authors concluded that sex partners who were not also members of participants' emotional and economic support networks may be the best positioned to introduce and spread new ideas about condom use.[17] The authors argue, however, that these more casual and informal partnerships may not be the best positioned to establish norms of communication on risk reduction and support for HIV prevention and treatment.[17]

The conclusions from the latter study hark back to Granovetter's strength-of-weak-ties theory.[36] Granovetter argues weak or bridging ties (or, acquaintances) serve as connections between different networks that expose people to new ideas and norms while strong ties are more effective at providing support and more intense social influence around these ideas and norms. Much of the HIV prevention work with sexual minorities in Guatemala to date reflects a weak-ties approach, whereby individuals from the target communities conduct outreach to distribute information and condoms among their "peers," or people who are like them.[6] These efforts represent bridging between different networks rather than in-depth engagement with close ties within personal networks. From an HIV transmission perspective, having a bridge position in a network has been associated with being infected with HIV, highlighting the application of this theory to disease transmission as well as social influence.[37]

Our results suggest that the peer-led outreach efforts commonly used in Guatemala have made important strides, since most participants described some exposure and/or had talked about protection with their network members. The disproportionate burden of HIV among MSM and transgender women compared to the national population, however, suggests there is an urgent need to strengthen and/or expand these efforts. When participants described the content of discussions about HIV with their social network contacts, they were fairly superficial and reflected the popular discourse of “be careful” and “protect yourself” promoted by HIV prevention programs. Our findings are supported by those of a recent evaluation of the effectiveness of HIV prevention activities with MSM and transgender populations in Guatemala, in which the most commonly mentioned intervention strategies were a-theoretical, individual-level health education and outreach with few examples of group and community-level activities.[5] Participants reflected an over-saturation of the same “facts” about HIV prevention and a need for new discourses and content to generate interest and receptivity.

Given this context, there is a clear need to integrate both strong and weak ties approaches into HIV prevention efforts in Guatemala. Such efforts would go beyond information provision and normative influence to provide more nuanced discussion, support, and critical reflection on the meaning of HIV prevention and how to overcome challenges. A study conducted among MSM of color in the U.S. concluded that a weak ties approach was not sufficient to reduce sexual risk behavior and suggested using strategies to enhance social connectedness.[23] For example, in a community-based HIV-prevention pilot program for township MSM in South Africa, small group meetings and community-based social activities provided an enabling environment in which MSM could learn from one another, explore their sexual identities and overcome barriers to HIV prevention such as social isolation and low self-esteem.[38] The recent implementation of the Mpowerment model, a multilevel HIV prevention program specifically designed for young gay and bisexual men, among young gay-identifying men in Guatemala City reflects an important complement to individual-level health education efforts that could be adapted to the network dynamics of MSM and transgender populations.[5]

Additionally, our in-depth analysis of networks and communication about HIV provides insight into who could comprise strong ties for each of the subgroups. Among gay participants, the higher proportion of social network members that were family members and their importance as sources of emotional and material support reflects the potential role of family members as strong ties in HIV prevention.[39] Though the role of family has received limited attention in research on social networks and HIV risk among sexual minorities,[40,41] a recent study using respondent-driven sampling (RDS) to recruit black MSM in Chicago found that having at least two family members (in a five-person network) was associated with lower HIV risk.[39] These findings suggest the need for more applied research on ways to incorporate the family in network-based HIV prevention efforts in Guatemala, particularly for gay-identifying men. Such research should address how to intervene with families to increase support for HIV prevention while reducing stereotyping and stigma from family members of sexual minorities.

Intervening with the sexual partners of non-gay identifying MSM may be a promising option for mobilizing strong ties in this sub-group. A study in Peru found that prevention efforts primarily targeting gay and transgender women reached some MSM via the partners of gay male participants.[32] In our study, non-gay-identifying MSM had a lot of overlap between their social and sexual networks, meaning that their most recent sex partners (male or female) were considered to be important people in their lives with whom they spent most of their time. Furthermore, male sex partners were often the only members of their social network that were aware of their same sex behavior and thus in a position to discuss the risk behaviors that non-gay-identifying MSM partake in. In particular, sex work clients served as important sources of economic and emotional support and could provide a key source of support for HIV prevention for non-gay-identifying MSM. Transgender women in our study also mentioned sex work clients as sources of support. However, transgender participants less often cited their clients in their social networks, suggesting that they were not as close to their clients or perhaps reflecting the greater amount of violence and abuse they reported.

The fact that non-gay identifying MSM were less exposed to HIV prevention efforts compared to gay-identified and transgender participants suggests that a weak-ties approach is still warranted particularly for this group to further disseminate basic information on where to access sexual health services, HIV/STI testing, free condoms, and sexual health education. A lingering challenge to reaching the networks of non-gay-identified MSM is that these men may not disclose their same-sex behavior to all of their network members and their networks may not present a cohesive community united by a shared identity and social experience, as we found in the gay and transgender networks. Most network-based HIV prevention efforts to date have targeted gay or bisexual identifying MSM; programs targeting heterosexual identifying MSM are rare. A U.S. study conducted among Black men who have sex with men and women (MSMW) concluded that effective approaches for reaching non-gay-identified MSM should target risk *behaviors* rather than sexual *identities*.[42] Developing new chains of dissemination that do not originate among sexual minorities may be necessary to reach this group. Given the hesitation of non-gay-identified MSM participants to attend NGOs associated with the gay community, referrals should be made to public clinics providing general health services for men.[12]

When considering engagement with social networks, it is also important to consider the context in which these networks function, a theme that was particularly salient among transgender participants who reported the smallest social networks, the greatest amount of discrimination, violence, and substance abuse and the most economic and social disenfranchisement. Their narratives reflect the argument made by Cecilia Menjívar that social network stability is shaped by the structure of opportunities in which networks function.[43] Based on ethnographic work with Salvadoran immigrants in the U.S., Menjívar found the amount of support available through social networks was constrained by structural factors, in particular poverty.[43] Menjívar's work is a cautionary tale to view social networks within the broader context in which they function as this can determine the resources that are available to network members.[43,44] The social networks of transgender participants in our study operated in a highly deprived environment that may limit the availability of emotional and economic support. Particularly for transgender study participants, a social network

approach to HIV prevention ultimately may not be as successful if structural issues are not attended to simultaneously.

This study has several limitations. While our participants used rich terms to describe their self-identification such as "*más gay que bisexual*" (more gay than bisexual), "*hombre que tiene sexo con hombres activo*" (man who has sex with men, insertive), and "*una chica travesti que en el futuro quiero ser transgenero*" (a travesti girl who in the future wants to be transgender), we classified participants into three categories that may not reflect the fluidity of sexual and gender identities. Most participants were recruited through NGOs and may reflect higher levels of exposure to HIV prevention activities than the broader community; nevertheless, we believe the information about their social and sexual networks is transferable. Additionally, we recruited a few participants through a gay social networking site to diversify the sample.

Conclusions

This study provides contextualized data on social and sexual networks, social support, and access to information about HIV, among sexual minorities in Guatemala. We found that network composition and the availability of support vary between gay-identified men, non-gay-identified MSM and transgender women, highlighting the need for targeted interventions that go beyond current condom promotion and information provision through venues and peers. Our nuanced understanding of the diversity of social and sexual networks among sexual minorities in Guatemala and the context within which networks operate provides key insights for future interventions to promote HIV-protective behaviors by tapping into strong ties.

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Table 1

Demographic characteristics of participants by gender and sexual identity, Guatemala City, 2010.

	Total (n=29)	Gay-identified (n=13)	Non-gay-identified (n=8)	Transgender (n=8)
Age				
18 – 25	12	6	1	5
26 – 35	11	4	6	1
36 or older	6	3	1	2
Marital status				
Single	26	13	6	7
Married/Civil union	2	0	2	0
Separated/Divorced	1	0	0	1
Education				
University	10	8	1	1
High-school/Secondary	13	4	5	4
Primary	6	1	2	3
Employment				
Employed	23	10	8	5
Unemployed	6	3	0	3
Sex worker				
Past	6	1	1	4
Current	10	3	4	3
Client	4	4	0	0
Never	9	5	3	1
International migrant				
Yes	4	0	4	0
No	25	13	4	8
Lives with				
Parents and siblings	13	8	2	3
Extended family	6	4	0	2
Wife and child	2	0	2	0
Friends	1	0	1	0
Alone	5	1	3	1
Missing	2	0	0	2

Table 2

Social and sexual network characteristics by gender and sexual identity, Guatemala City, 2010.

	Gay-identified (n=13)	Non-gay-identified (n=8)	Transgender (n=8)
Participants' social networks			
Median size and (range)	6.0 (2 – 8)	4.0 (3 – 8)	3.5 (1 – 6)
Median number of kin and (range)	3.0 (2 – 8)	2.0 (0 – 3)	1.0 (0 – 2)
Participants' sexual networks			
Number of networks with women	2	3	0
Number of networks with sex work clients	1	2	4
Number of participants who named the same person in both social and sexual networks	7	5	1