Perceived condom norms and HIV risks among social and sexual networks of young African American men who have sex with men

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Abstract

The association between condom norms and unprotected sexual intercourse was examined within social and sexual networks of young African American men who have sex with men (MSM) in an HIV epicenter of the southern United States. We used a chain-link design to recruit 158 young African American men: 95 initial participants, 56 contacts of participants (alters) and 7 contacts of alters. Men in the high-risk group, compared with those in the no-risk group, perceived significantly lower approval concerning condom use in their social and sexual networks. Also, 100 participants could be connected to each other in 86 dyads of social and sexual networks. Within these dyads, men perceived that their friends and acquaintances approved for them to use condoms but that their friends and acquaintances did not use condoms themselves. Low HIV risk behavior appears associated with perceived social norms that support one’s use of condoms, even when perceived norms do not support condom use by network members themselves.

Introduction

For more than two decades, African Americans have been disproportionately affected by the HIV epidemic in the United States, which is especially notable among men who have sex with men (MSM). African American men represent an increasingly large percentage of AIDS cases among MSM [1–4]. In addition, HIV prevalence and incidence are significantly higher among African American MSM than white MSM [5–7]. Among young MSM aged 15–22 years old, HIV prevalence is considerably higher among African Americans (14.1%) than among Latinos (6.9%), American Indians/Alaskan Natives (6.7%), Whites (3.3%) and Asian/Pacific Islanders (3.0%) [8].

Explanations for this racial disparity in infection remain elusive for young African American MSM nationwide [9] or especially in the South, which has more new estimated AIDS cases than any other region [4]. Unprotected anal intercourse has been considered the single most important risk factor for HIV infection among MSM [10]. But the results have been mixed from studies of racial differences in self-reported sexual risk behaviors among MSM. Prior studies have reported both different and similar rates of HIV sexual risks between African American MSM and other MSM [5–7, 11–13].

However, the effects of HIV sexual risk behavior on HIV infection may strongly depend on the sexual networks of MSM. If sexually transmitted diseases, such as HIV, are not randomly distributed...
across social and sexual networks, then the prevalence of infection within networks may contribute as much, if not more, to the risk for HIV infection as individual risk behaviors alone [14, 15]. Vulnerability to HIV infection may not only depend upon one’s own risks but also the risks attributable to other partners in one’s sexual networks. Networks may be composed of similarly high- or low-risk members (i.e. many or few members with HIV infection) or disproportions of high- and low-risk members that may differentially lead to risk for HIV. For example, some evidence suggests greater exposure to HIV in African American MSM who prefer same race partners and in African American MSM college students who have sexual networks that greatly overlap [16, 17]. Hence, more studies are needed that examine the association between network characteristics and HIV sexual risk behaviors of African American MSM.

To understand HIV sexual risks of networks, it is necessary to examine the association between network factors and HIV risks. Social norms represent one factor of networks that affects HIV risks among network members [18]. Social norms refer to expectations of acceptable behavior or attitudes within a community or peer group prescribed by the respective members, which include two types—actual norms and perceived norms [19]. Actual norms are the true social norms for a particular attitude or behavior (e.g. the majority of group members actually report they do not use condoms). Perceived norms are what individual members believe to be the social norm for a particular group (e.g. an individual believes that most of his peers do not use condoms). Normative beliefs can affect the efforts of group members to change their behavior or attitudes because of the influence of other members in their network. Applied to HIV prevention, social network theory suggests that members function within social networks that establish norms for safer or risky sexual behavior and that these social networks enforce adherence to these norms through information that is either supportive or unsupportive of a particular safer or risky norm. If risk is normative and socially rewarded within a social network, risk reduction is unlikely to occur unless the norms promulgated and enforced by the social network are modified. Conversely, however, if risk behavior conflicts with social norms of the network and is unacceptable by network members, the social network may help change social norms that oppose safer sexual behaviors or support social norms that favor safer sexual behaviors.

In the current study, we examined the association between perceived norms for condom use and HIV sexual risk behaviors among social and sexual networks of African American MSM. Studies have shown that the adoption of safer sex practices is associated with perceived social and normative support for HIV risk reduction activities among general community samples of gay men [20, 21]. Gay men who perceive strong social norms for condom use engage in less risky sexual behavior than those who perceive weak social norms for condom use. This effect has been reported for studies that sampled among individuals and networks of white MSM but not non-white MSM [22]. Hence, we describe the perceptions of social norms toward condom use among individual MSM, the association between condom norms and sexual risks and perceptions regarding condom norms among networks of African American MSM.

Methods

Participants
Our sample consisted of 158 young African American men: 95 initial participants, 56 persons recruited by initial participants (alters) and 7 persons recruited by alters.

Recruitment procedures
Based on our ethnography, we developed a physical description of each possible venue to map the population from which our sample could be drawn in a large southern metropolitan city. We used these descriptions to determine which bars, clubs and organizations to approach for recruitment. Participants were recruited and interviewed from September 1996 to October 1997. Qualifications for inclusion in the study were as follows: having
resided in the metropolitan area for at least 6 months, having identified themselves as Black or African American, being 19–29 years of age (for participants; no age limitation for contacts) and having reported sexual activity with another man during the past 3 months. For the recruitment of the initial (ego) participants at clubs and bars, we used the non-probability technique of targeted sampling [23]. African American men in the specified age range served as recruiters in bars, clubs and organizations. The recruiters asked men who were interested in the study to either provide contact information or to call our project office to schedule an appointment for an interview. We included a chain-link process in our study design to describe the networks of our sample in more detail. We asked the initial participants to name other African American MSM in their networks to be interviewed. The initial participants contacted the persons they named in their network, informed us if those persons were interested in the study, and then provided contact information about the network contact so that an interview could be scheduled.

Interview process
The data collection involved interviewer-administered interviews largely conducted in the project office, but a few were completed in the participants’ residences. These face-to-face interviews were conducted with a structured instrument that included questions regarding participants’ demographic background, condom norm attitudes and sexual behavior. All interviews were administered by an African American, male graduate research assistant trained in data collection with gay, bisexual and heterosexual African American men. All interviews began with a description of the survey and obtaining informed consent from eligible participants. The interviews required approximately 2–3 hours due to the extensive measures to assess their networks. Participants received $15 and network contacts received $10 for their participation. Approval to conduct the study was obtained from the institutional review board of the university of the first author.

Instrument
The full 145-item survey instrument consists of eight sections that include measures of demographics, medical history, drug use, sexual identity, sexual behavior, network information, relationships with contacts and associates and civic engagement. However, the current report pertains to only three of those measures: demographics, perceived condom norms and sexual behavior, which are described below. While the description of the network is beyond the scope of this report, we also describe how the network was assessed as informative in understanding the method used to generate the sample.

Demographics
We asked all participants interviewed eight questions to obtain standard demographic information including age and date of birth, race/ethnicity (Black, African American, Caribbean, Haitian, Hispanic Black, Puerto Rican and Cuban), place of birth, highest educational grade completed, current work situation (e.g. full-time paid job, part-time paid job, full-time student, unemployed, looking for work, unemployed and not looking for work), top three sources of income and relationship status (e.g. male lover/gay couple, male steady or dating partner, married to a woman, seeing women regularly, not in a relationship or other).

Perceived condom norms
We asked participants three questions about what they perceived that their friends and acquaintances would think about them (the study participants) using condoms in three situations (e.g. abstaining from sexual intercourse if condoms were not used by a new partner, insisting on condom use even if the new partner did not want to use a condom and not using a condom during sexual intercourse with a new partner). These three items were assessed on a five-point Likert scale that ranged from 1 (strongly disapprove) to 5 (strongly approve). Additionally, we asked participants three questions about what they perceived that their friends and acquaintances would think about their own behavior in those same situations. These three items were
assessed on a five-point Likert scale that ranged from 1 (absolutely would not) to 5 (absolutely would). Items were reversed scored for two items that represented negative norms supporting risk reduction when the total scale score was computed. Cronbach’s alpha was 0.78 for the six-item scale, which was adapted from a longer scale developed earlier that had a similar alpha of 0.75 [24].

**Sexual behavior**

To characterize sexual risk behaviors, we used information reported about actual sexual contact. For each participant, we asked four questions: the number of times (1 = daily to 7 = never) that the participant had anal sex within the last 3 months as a 'top' (insertive partner) and as a 'bottom' (receptive partner) and how often a condom was used for both sexual behaviors (1 = always or 100% of the time; 4 = never or 0% of the time). We determined the contact with whom the participant performed the riskiest behaviors and classified the participant according to that level of risk (1 = always or 100% of the time; 4 = never or 0% of the time). Persons who reported anal intercourse (receptive or insertive) with <100% condom use within the past 3 months were classified as high risk. Those who reported anal intercourse but used condoms 100% of the time within the past 3 months were classified as low risk. Persons who reported no anal intercourse within the past 3 months were classified as no risk. We chose not to include self-perception of risk or reported HIV status (for which we did not have verification) as measures of current risk, favoring instead reported current behavior. We verified the classification, which is what respondents reported about their general risk taking, by comparing these general statements to the activities they reported with individual partners. Our focus was male-to-male sexual risks because receptive anal sex has the highest risk and substantially (eight times) higher risks than receptive vaginal penetration [10, 25].

**Network assessment**

We collected network data by asking participants to generate a list (initials or nicknames) of several types of local or egocentric networks: social networks, sexual networks and drug-use networks, and then asking a set of questions for each partner [23]. The sexual network included each person with whom the participant had engaged in sexual activity during the past 90 days (men could list all sexual contacts but we asked for only three names of network contacts for later interview). The social network included names of persons the participant considered ‘important’ and with whom the participant had talked or spent time during the past 90 days. The drug-use networks included the persons with whom the participant had used drugs or shared needles during the past 90 days. For each network contact named, we asked 59 questions regarding the nature of the relationship (length of association, type of connection and frequency of contact); estimated demographic characteristics of the partner such as age and occupation; the strength of the relationship on a scale of 1–10; the degree of personal (as opposed to sexual) intimacy (e.g. received and gave advice, helped out and talked about personal matters); whether or not this person was the main partner; the participant’s perceptions about the partner’s risk-taking activity; the type and frequency of sexual acts (i.e. oral sex, anal sex and vaginal sex) performed during the past 90 days, including the use of condoms for each type of sexual act and shared drug or injection activity. Results of these analyses are presented in a separate report that describes the structural characteristics of the study participants’ networks.

**Data analyses**

We used the Statistical Analysis System to perform descriptive and statistical analyses for group comparisons [26] and Ucinet for network analyses [27]. For the network analyses, the descriptive, cross-sectional study design permitted us to describe various groups of men in our sample who were socially or sexually connected with each other. Though we did not collect individual identifiers, the use of initials or nicknames coupled with demographic information permitted identification of pairs of men who named each other. The 100 men for whom
connections were observed formed a total of 86 dyads. Of the 86 dyads, 44 (66 persons) included interviews with both persons, and data were analyzed as a single observation (A’s information about himself, A’s information about B, B’s information about himself and B’s information about A). These dyads provided responses to the condom norm measure that allowed us to compute concordance between men in the dyads and the extent to which responses from one partner was confirmed by the other. We examined statistical differences in HIV risk for all categories of condom norms by using analysis of variance.

**Results**

**Sample characteristics**

For our sample (n = 158) of young African American MSM, the average age was 23 years and the average number of years of education was 13.8. Most (62%) of the participants were not in relationships although a quarter (26%) reported that they had a steady male partner. One participant was married and five men were regularly dating women.

**Risk behavior**

Nearly a fifth (18%) of participants were classified as high risk (n = 29) and listed 251 contacts (e.g. sexual, social and drug related). In addition, half (50%) of the sample (n = 79) was classified as low risk and these low-risk participants listed 908 contacts. Approximately, one-third (32%) of participants (n = 50) were classified as no risk (e.g. did not engage in anal intercourse) and listed 219 contacts (see the description for the sexual behavior measure for the definition of risk). The average number of the sexual contacts was 2 (range 0–9). Slightly more than one-third (39%) of participants had one sexual contact, 23% had two sexual contacts, 18% had three sexual contacts and 15% had between four and nine sexual contacts; 5% had no sexual contacts. The average number of total contacts (i.e. social, sexual and drug using) was 8.7 (range 2–22). Two relationships involved injection drug use.

**Condom norms**

Condom norms seem to support safer sex behavior. Most (80%) of the sample reported that their friends would approve or strongly approve of their abstinence from sex with a new partner if condoms were not used. Similarly, most (93%) believed that their friends would approve or strongly approve of their insistence on using condoms with a new partner and most participants (86%) believed that their friends and acquaintances would disapprove or strongly disapprove of their refusal to use a condom with a new partner.

Results are similar for participants’ perceptions of what their friends and acquaintances would do regarding condom use. Nearly two-thirds (63%) thought that their friends and acquaintances absolutely or probably would abstain from sex if condoms were not used. Moreover, most participants (78%) thought that their friends absolutely or probably would insist on condom use with a new partner. Also, two-thirds (67%) of the men thought that their friends would absolutely or probably not have sex with a new partner if condoms were not used.

**Condom norms and sexual risk**

Participants were consistent in their acceptance of condom norms that support safer sex behavior with new partners and their frequency of low-risk sexual behavior. Differences in sexual risk behavior were found between participants’ perceptions of their friends and acquaintances approval of what they do and participants’ perceptions of what their friends and acquaintances do. For both norms, most (80%) of the sample was classified as low or no risk (M = 3.92, SD = 0.40 for the high-risk group, M = 4.26, SD = 0.71 for the low-risk group and M = 4.40, SD = 0.62 for the no-risk group). Men in the high-risk group reported significantly lower (F = 5.30, df = 2, P = 0.006) condom peer norms than men in the no-risk group (χ² = 3.92 and 4.46, respectively). However, men in the low-risk group did not differ significantly from men in the other two groups in their condom peer norms (χ² = 4.30).
Network patterns of condom norms

Results revealed that 100 persons could be connected to each other in 86 dyads of social and sexual networks (Fig. 1). Within these 86 dyads, 44 connections involved 66 persons, both of whom were interviewed. Agreement was moderately high among men (61%) about how they viewed their relationship status (e.g. gay couple, steady male partner, not in relationships and other). About half (49%) agreed that they were not in a relationship. Network patterns were examined among the 44 bi-directional dyads to assess the similar (assortative) or dissimilar (disassortative) nature of these dyad members regarding their perceptions of their friends’ approval of them using condoms and their perceptions of their friends’ use of condoms. We assessed the similarity or dissimilarity in these perceived norms based on concordance and discordance between members of these social and sexual dyads. We did not separate the dyads for sexual and social contacts because prior studies reveal that friends and sexual partners influence shared norms and we were interested in the effects of shared norms for condom use [28–30].

Men in these dyads ranged from moderately to highly concordant about what they perceived their friends and acquaintances would think about them (the study participants) using condoms. Across all participants in these 44 dyads, we provide the proportions of men who agreed or disagreed with specific condom norm questions (Table I). Half (54%) of the men agreed that their friends strongly approved of them (the study participants) abstaining from sex with a new partner if a condom was not used. Even across the dyads that disagreed, at least one of the men in those dyads strongly approved that our study participants abstain from sex unless a condom was used. That is, when dyads were discordant, one member felt that his social or sexual network approved of abstaining from sex if condoms were not used while the other dyad member felt his network did not approve of abstaining from sex if condoms were not used. Moreover, nearly all men (95%), across these 44 dyads, agreed that their friends strongly approved that they (the study participants) insist on condom use with new sexual partners. Also, most (71%) of the men across these dyads agreed that their friends would strongly disapprove if they (the study participants) refused to use a condom with a new sexual partner. Hence, both members of these dyads seemed to perceive strong approval for condom use from their networks.

Table I. Participants’ perceptions of their friends’ reactions to their use of condoms and perceptions of their friends’ use of condoms

<table>
<thead>
<tr>
<th>Participants’ report</th>
<th>Concordant (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reaction of friends to participants’ abstinence from sex without condoms</td>
<td>54</td>
</tr>
<tr>
<td>Reaction of friends to participants’ insistence on condoms with new sex partners</td>
<td>95</td>
</tr>
<tr>
<td>Reaction of friends to participants’ refusal to use condoms with new sex partners</td>
<td>71</td>
</tr>
<tr>
<td>Perception of friends’ abstinence from sex without condoms</td>
<td>33</td>
</tr>
<tr>
<td>Perception of friends’ insistence on condoms with new sex partners</td>
<td>38</td>
</tr>
<tr>
<td>Perception of friends’ not using condoms with new sex partners</td>
<td>33</td>
</tr>
</tbody>
</table>

Percentages reflect responses from 44 dyads.

Network patterns of condom norms

Fig. 1. Network configuration of black men who have sex with men (n = 100, 86 dyads).
Conversely, however, men were more discordant in their perceptions of what their friends and acquaintances would do about condom use (Table I). Most men (67%) disagreed that their friends would abstain from sex without a condom; only 19% agreed that their friends absolutely would not engage in sex without a condom. Similarly, most men disagreed that their friends would insist on condom use with a new sexual partner (62%) and that their friends would not have sex with a new partner if condoms were not used (67%). Therefore, it seems that men in these dyads do not agree that their friends and acquaintances would use condoms. Across dyads, participants generally agreed that they perceived their friends approved of them using condoms but participants generally disagreed that they perceived their friends would also use condoms.

**Discussion**

The most prominent findings of our study were the low prevalence (19%) of risky sexual behaviors and the significantly lower condom norms for men in the high-risk group than for men in the no-risk group. Interestingly, the perceptions of condom norms were more mixed within the networks than for the entire sample. For the overall sample, the vast majority of men perceived moderate to high approval from their friends that they use condoms with new sexual partners and that their friends would use condoms with new sexual partners. However, patterns of condom norms revealed more discrepant perceptions for members of dyads within the networks. It appears that members of dyads perceive high approval from their friends for them to use condoms but have lower perceptions that their friends will use condoms. These divergent findings suggest that men may perceive that members of their network approve their choice to use condoms, if they wish, but conversely perceive that members of their network choose not to use condoms themselves.

Men in these dyads engaged in assortative, similar mixing, rather than disassortative or dissimilar mixing, regarding perceptions of peer condom norms. Those dyads with similar perceptions of condom norms may experience higher or lower rates of unsafe sex depending upon whether the members perceive similar stronger or weaker norms for them to use condoms, even if they perceive that their friends would not.

Our results prompt potential ideas for network interventions as promising approaches to alter peer norms toward unsafe sex with African American MSM because peer norms spread through networks initially with influential ‘trend setters’ who persuade others through their actions (e.g. modeling) to adopt the relevant attitudes and behaviors [18]. Peers serve as agents of change and provide one of the most readily available strategies for such interventions, such as natural opinion leaders. Such network members are widely respected and have the ability to establish and enforce social norms. Recent studies have shown that HIV prevention interventions that train social network leaders to function as risk reduction advocates significantly reduced high-risk sexual practices among other MSM in the social networks [31]. In addition, formative research is needed to identify not only who the appropriate peers are but also who are most influential regarding the specific behaviors among the targeted group. Similarity in peer attributes (e.g. risk behavior, demographic characteristics or social roles in the target population) may be associated with effective interventions for African American MSM. Such studies may prove useful to design network interventions to reduce HIV risk behaviors within the networks of young African American given the higher rates of HIV infection in non-white men and if their sexual partners are more likely of the same race than a different race.

Some caveats of our study should be noted. Sampling and data collection procedures may have limited our study. Methods of egocentric data collection can involve concerns about validity regarding partner characteristics. However, alternative sociometric approaches have been found to produce other biases as serious as distortions possible with egocentric approaches [32]. Also, we hesitate to generalize our findings to all areas of
the South or the United States. Any non-probability sample warrants this caution because the hidden heterogeneity in minority races/ethnicities is unlikely to be revealed by using the typical probability techniques for sampling. In addition, our network data were limited to three partners named by study participants, which may not fully represent the network characteristics of partners who were not contacted. Finally, the lengthy time period between data collection and the report of these results raise the possibility that temporal changes have occurred that were not considered when the study was conducted. Nonetheless, this study reported salient effects of social norms on condom use in networks of African American MSM as other effects found in a meta-analysis of 58 earlier studies [33]. Further network studies of young African American MSM may offer improved opportunities to understand the causes of racial disparity in HIV risks in this population than reliance on studies of individual men alone.

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Conflict of interest statement

None declared.

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