

Sexual Network Study with Men Who Have Sex with Men



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Background



- 1/5 men who have sex with men (MSM) in urban areas of the U.S. has tested HIV-positive
- Highest risk among young MSM (YMSM) and MSM of color
- In Houston, 55% of all HIV/AIDS cases are among MSM and nearly 40% are among African American men aged 29 and under

Social Network Analysis (SNA)



- A way to visually and mathematically analyze human relationships
- An effective way to analyze relationships through which information, disease, support, drugs and resources flow

Study's Purpose



- 1) Examine patterns by which HIV is/could be transmitted within networks by identifying individuals or groups at high risk for HIV
- 2) Identify the venues (location or settings such as drinking in specific bars, street, etc.) where people recruit sex partners and examine structure of sexual affiliation

Methods



Sample: Indices were recruited from the pool of HIV infected males who report engaging in sex with men in an adolescent family planning clinic (first wave). Network members were individuals who participated in the study due to an index's referral.

Methods



- 1) Indices were interviewed on sociodemographics, sexual behavior and drug use
- 2) Participants were also asked questions regarding specific aspects of the relationship with their network members
- 3) Indices were asked to refer their network members to participate in the study (second wave)

Methods

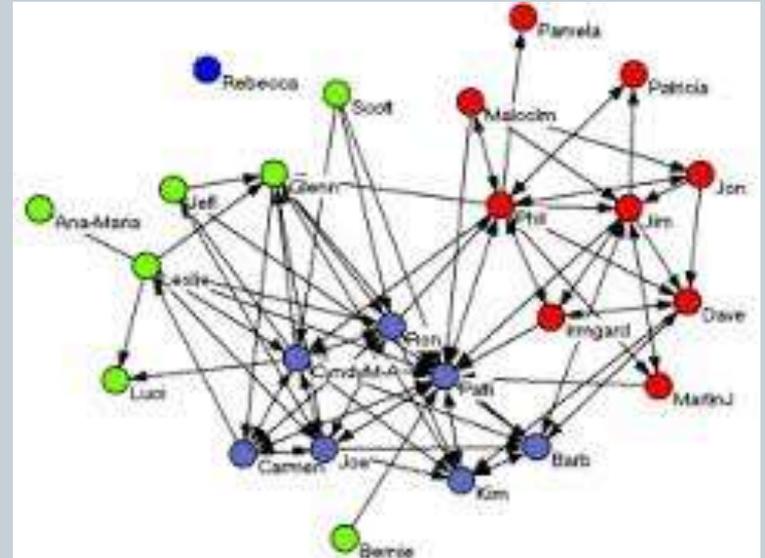


- 4) Network members participated in the study after being referred by the indices
 - 5) The recruitment and network interview process continues until the chain of referrals ends
- Indices and network members received monetary incentives for participation in this study

Data Analysis



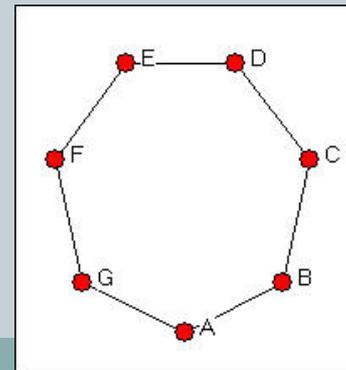
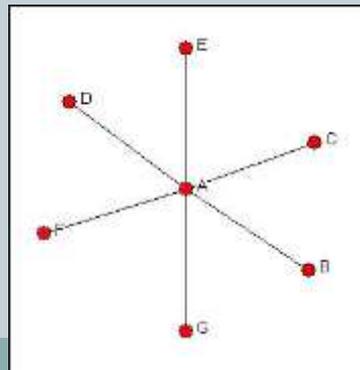
- In the one-mode network, structural variables are measured on a single set of nodes within a given network boundary



Data Analysis



- The first mode includes indices and network members
- The one-mode network data consist of relational information among indices and network members based on their (1) sexual network, (2) drugs network and (3) friendship network



Results



- **Sample Size:**
 - Indices = 15
 - Network members = 22
 - Friendship network = 142
 - Sexual network = 69
- Indices and networks were individuals between 18 and 28 years old.

Demographics



- Most individuals received their HS Diploma or GED, or attended college/university
- 93.3% of indices and 45.5% of network members were male
- Majority of indices (80%) and network members (72.8%) identified as gay/homosexual or bisexual

Drug Use



- Majority of indices (93.3%) and network members (72.7%) reported alcohol use
- Majority of indices (66.7%) and network members (77.3%) reported Marijuana use
- Several indices (53.3%) and network members (36.4%) reported smoking cigarettes



Sexual Risk Behavior



- Most indices (60%) and a number of network members (40.9%) reported a history of a STI
- Some indices (20%) and network members (22.7%) have had an HIV-positive sexual partner



- Only 8.1% of indices and 36.4% of network members consistently used condoms

Sexual Risk Behavior



- Network members have had more female vaginal or anal sexual partners than indices ($\mu=4.95$ vs. $\mu=0.8$)
- Network members ($\mu=13$) and indices ($\mu=14.3$) had a similar number of male vaginal or anal sexual partners
- Indices have had more male oral sex partners than network members ($\mu=16.3$ vs. $\mu=9.4$)

Friendship Network



- Sample Size: 142
- Most common meeting venues:
 - Neighborhood (31.5%)
 - Friends/Family (22.5%)
 - School (19.6%)
- Among HIV-positive indices and network members, 59.8% of friendship networks were aware of the indices/network members HIV-positive status



Sexual Network



- Sample Size: 69
- Most common meeting venues:
 - Internet (36.9%)
 - Neighborhood (16.9%)
 - Friends/Family (15.9%)
- Among HIV-positive indices and network members, 45.2% of sexual partners were aware of indices/network members HIV positive status



Sexual Network

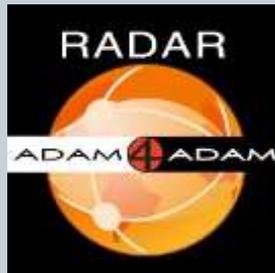


- Relationship between indices/network members and sexual network references:
 - Casual partner (38.5%)
 - Boyfriend/girlfriend (29.2%)
 - 1-time partner (13.8%)
- 46.9% of indices/network have had unprotected sex with partner

Venues



- The indices (N=15) identified a total of 26 clubs and bars and 15 Internet websites where they met their sex partners over the past year.
 - The top clubs/bars:
 - 20/20 (46.7%)
 - Bayou City Place (33.3%)
 - Thirst (20%)
 - F-Bar (20%)
 - The top Internet websites:
 - Facebook (40%)
 - Jack'D (33.3%)
 - Adam4Adam (20%)



Discussion



- Majority of indices and network members engaged in alcohol, cigarette and marijuana use
- Overall condom use was low in both friendship and sexual networks
- Few of the friendship and sexual network members knew the HIV-positive status of the indices and network members

Conclusions



- HIV can spread throughout entire networks (friendship, sexual and/or drug networks)
- Social networks pinpoint:
 - Key players in the spread of HIV
 - Engagement in risky behaviors
 - Who among network members is at highest risk of contracting HIV

Conclusions



- Future HIV prevention and treatment programs should target locations (ex. neighborhoods, popular Internet sites, schools, family and friends) that are strongly linked to central network members.

Limitations



- Based on convenience sampling of HIV-positive MSM
 - Limits the generalization of the findings
- Recruitment to the study was challenging due to the stigma associated with an HIV-positive status disclosure

Limitations



- IRB approval was challenging as members were concerned about the privacy of referrals.
- Only full first and first letter of last names of referrals were approved by the IRB.
 - It was difficult to identify referral network overlaps between indices/network members

Acknowledgements



- Study was supported by Focus, Gilead Sciences, Inc.
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