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Mother-Son Communication about Sex and Routine HIV Testing among Younger Men of Color Who Have Sex with Men

Alida Bouris, PhD, MSW[a] **[Assistant Professor]**, **Brandon J. Hill, PhD**[b] **[Executive Director]**, **Kimberly Fisher, MA**[c] **[Project Coordinator]**, **Greg Erickson, MA**[d] **[Graduate Research Assistant]**, and **John A. Schneider, MD, MPH**[e] **[Associate Professor]**

[a]School of Social Service Administration, and Co-Director, The Chicago Center for HIV Elimination, University of Chicago, 969 E. 60th St., Chicago, IL 60637, United States of America. abouris@uchicago.edu

[b]Center for Interdisciplinary Inquiry and Innovation in Sexual and Reproductive Health, Section of Family Planning and Contraceptive Research, Department of Obstetrics and Gynecology, University of Chicago, 1225 E. 60th Street, Chicago, IL, 60637, United States of America. bhill2@bsd.uchicago.edu

[c]The Chicago Center for HIV Elimination, University of Chicago, 5837 S. Maryland Ave., Chicago, IL, 60637, United States of America. kfisher@medicine.bsd.uchicago.edu

[d]School of Social Service Administration, University of Chicago, 969 E. 60th St., Chicago, IL 60637, United States of America. erickson1@uchicago.edu

[e]Departments of Medicine and Public Health Sciences, and Director, The Chicago Center for HIV Elimination, University of Chicago, 5837 S. Maryland Ave., Chicago, IL, 60637, United States of America. jschnei1@medicine.bsd.uchicago.edu

Abstract

Purpose—To document the HIV testing behaviors and serostatus of younger men of color who have sex with men (YMSM), and to explore sociodemographic, behavioral, and maternal correlates of HIV testing in the past six months.

Methods—135 YMSM aged 16–19 completed a close-ended survey on HIV testing and risk behaviors, mother-son communication, and sociodemographic characteristics. Youth were offered point-of-care HIV testing, with results provided at survey end. Multivariate logistic regression analyzed the sociodemographic, behavioral, and maternal factors associated with routine HIV testing.

Corresponding Author: Alida Bouris, PhD, MSW, Assistant Professor, School of Social Service Administration, and Co-Director, The Chicago Center for HIV Elimination, University of Chicago, 969 E. 60th St., Chicago, IL 60637. abouris@uchicago.edu. Phone: 773-834-4304. Fax: 773-702-0874.

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Results—90.3% of YMSM had previously tested for HIV and 70.9 % had tested in the past six months. In total, 11.7% of youth reported being HIV-positive and 3.3% reported unknown serostatus. When offered an HIV test, 97.8% accepted. Of these, 14.7% had a positive oral test result and 31.58% of HIV-positive YMSM (n=6) were seropositive unaware. Logistic regression results indicated that maternal communication about sex with males was positively associated with routine testing (OR=2.36; 95% CI=1.13–4.94). Conversely, communication about puberty and general human sexuality was negatively associated (OR=0.45; 95% CI=0.24–0.86). Condomless anal intercourse and positive STI history were negatively associated with routine testing; however, frequency of alcohol use was positively associated.

Conclusions—Despite high rates of testing, we found high rates of HIV infection, with 31.58% of HIV-positive YMSM being seropositive unaware. Mother-son communication about sex needs to address same-sex behavior, as this appears to be more important than other topics. YMSM with known risk factors for HIV are not testing at the recommended time intervals.

Keywords

Younger men who have sex with men; Homosexuality; Adolescence; Parent-child communication; HIV testing; HIV/AIDS

Younger men of color who have sex with men (hereafter YMSM) aged 16–29 are disproportionately affected by HIV, and epidemiological data indicate that many YMSM seroconvert during mid-to-late adolescence[1]. The Centers for Disease Control and Prevention (CDC) recommend that all sexually active youth be annually tested for HIV and that high-risk groups, such as Black and Latino YMSM, be tested every three to six months[2]. Among YMSM who are seropositive-unaware, routine testing is the first step in meeting clinical benchmarks along the HIV Continuum of Care (e.g., diagnosis, linkage to care, Antiretroviral Therapy, retention in care, and viral suppression)[3]. HIV testing also provides an opportunity to deliver tailored risk reduction counseling, although the effect of such counseling on subsequent sexual risk behaviors and sexually transmitted infections (STIs) is mixed[4,5]. More recent prevention efforts are focusing on Pre-Exposure Prophylaxis (PrEP) for high-risk negative persons, including YMSM. Although not yet approved for minors, the effectiveness of PrEP relies on routine testing to identify high-risk negatives who may be optimal candidates for PrEP and to detect seroconversions among people taking PrEP[6].

Studies indicate that YMSM have particularly poor outcomes along the HIV Continuum of Care. Zanoni and Mayer[7] estimate that 40% of HIV-positive youth aged 13–29 are aware of their serostatus, and only 6% of these youth are virally suppressed[7]. In general, Black and Latino YMSM are less likely to engage in routine testing and to be aware of their HIV-status than are White YMSM[8,9]. Correlates associated with testing among adolescents and YMSM include having sex with a known HIV-positive partner, condomless sex, and substance use[7,10], suggesting that youth test when they perceive themselves to be at high risk. Conversely, low-risk perceptions are associated with not having been tested[11]. Other correlates of not testing include low educational achievement, fear of testing positive, and not being offered testing services[7–9,11].

Large numbers of YMSM unaware of their serostatus and potentially contributing to new infections is a public health emergency of the highest priority. Innovative efforts are needed to ensure that HIV tests are routinely accessible for those youth most at risk. Since many YMSM may still be living in the family home during adolescence, parents are a potentially important source of sexual health information. To date, little research has examined parent-adolescent communication about sex among YMSM[12,13]. In general, research on parental influences on the health of YMSM lags behind that of heterosexual youth[12–15], where studies indicate that parents can reduce sexual risk-taking, improve partner communication, and increase health promoting behaviors, including healthcare engagement[16–18].

Few studies have examined parental influences on adolescent HIV testing. In one of the few studies in this area, earlier and more frequent mother and father communication about sex was positively associated with having ever had an HIV test among mostly White, heterosexual college students[19]. In a separate study with a nationally representative sample of male adolescents ages 15–19, mother and father communication about sex predicted having a visit to a regular care provider in the last year[18]. More recently, Leonard et al.[20] found that friend and family influences were associated with high-frequency testing among YMSM of color; however, it is unclear whether this association was due to peers, parents, or other family members. Numerous scholars note that parenting lesbian, gay, bisexual, and transgender (LGBT) youth is markedly different than parenting heterosexual youth[12,13,21]. Parent-child dynamics may be influenced by youth's level of outness, as well as parent's responses to learning that their child is gay or bisexual[12,21]. As a result, parenting practices commonly studied in research with heterosexual youth may operate differently in families with LGBT youth. For example, in a cross-sectional study with 257 diverse YMSM, Thoma and Huebner found that parent-adolescent communication about sex was positively associated with condomless anal intercourse (CAI) among YMSM who were out to their parents[13].

To the best of our knowledge, no studies have examined the association between maternal communication about sex and routine HIV testing among YMSM. However, this research is timely given that youth are disclosing their sexual orientation at younger ages[22], a trend likely to continue as support for LGBT people grows[23]. As such, it is likely that many parents are in positions to talk with their sons about sex, which could be associated with youth's testing behaviors. In the present study, we examine communication about topics commonly studied in research with heterosexual youth, such as puberty, condoms, and STIs/HIV, as well as those less studied with YMSM, such as same-sex behavior. In addition, we examine the frequency that YMSM discuss their own sexual orientation with their mothers and the affective context of the mother-son relationship. Because maternal communication is but one potentially important factor, we also consider sociodemographic and behavioral risk factors. We hypothesized that higher levels of communication about topics directly related to HIV prevention, such as condoms, STIs/HIV, and same-sex behavior, would be positively associated with HIV testing, as would behavioral risk factors for HIV infection.

Methods

Recruitment

The data are from Project READY, a study of familial and contextual influences on HIV prevention among ethnoracial YMSM and transgender women. Youth aged 13–19 years old were eligible if they: (1) identified as Black/African American or Latino; (2) identified as either a cisgender male (e.g., males whose gender identity matched their assigned sex at birth) or as a transgender woman; and (3) identified as gay or bisexual or reported any same-sex sexual behavior or any same-sex attraction. Youth were recruited at LGBT venues and events and via snowball sampling and referrals from other studies. Youth who successfully referred an eligible participant received $10 in cash. Of the 205 youth screened, 166 were eligible, 165 consented, and 163 completed the survey. The present study focuses on the 135 youth who identified as a cisgender male, as communication about sex between mothers and transgender women is likely different than that between mothers and sons.

Procedures

YMSM were asked to complete a 60-minute survey and an oral rapid HIV antibody test. Minors provided written assent and youth over 18 gave written consent for the survey; oral consent was obtained for the HIV test. Parental consent was waived; in Illinois, youth aged 12 and over can consent to HIV testing and treatment without parental consent[24]. Surveys were interviewer-administered and completed on paper or iPads using REDCap, a secure web-based application[25]. An HIV test was offered to all youth regardless of HIV-status or testing history and certified HIV counselors and testers employed by Project READY or partnering agencies administered all HIV tests. For testing conducted by partnering agencies, youth signed a Release of Information. All data collection and HIV testing occurred in private offices or in tents or mobile health vans in public settings, e.g., parks, parking lots. Youth who received an HIV test were given pre-test counseling[24] and did not eat or drink 30 minutes before testing. After receiving test results, all youth were given materials on STI/HIV transmission and relevant service referrals. All but one youth with an HIV-positive result were linked to care within two weeks. Youth received $15 in cash for completing the survey and $10 for completing the HIV test. IRB approval was obtained for all procedures.

Measures

HIV testing and serostatus—YMSM reported if they had ever had an HIV test and if yes, the month and year of their last test, name and location of testing site, and test result (positive, negative, don't know). Youth reporting no prior test were coded as "don't know." All youth were offered point-of-care rapid HIV test (primarily OraQuick ADVANCE Rapid HIV-1/2 Antibody test). Test results were coded as "negative" or "positive"; there were no inconclusive results. YMSM who declined to test were asked to answer "yes" or "no" to reasons for not testing; they also were able to provide their own reasons.

HIV-related risk factors—YMSM reported past six-month engagement in condomless sex with male, female, and transgender female partners of unknown or different HIV status. For sex with men, we assessed the frequency of anal sex (1=never to 6=20 or more times);

for sex with women, we focused on vaginal sex (0=no, 1=yes); for sex with transgender women, we queried oral, vaginal, and anal sex (0=no, 1=yes). YMSM also reported if they had ever been diagnosed with chlamydia, herpes, gonorrhea, syphilis, HPV or Hepatitis B or C (0=no, 1=1 or more STI). Youth reported the frequency of alcohol use and marijuana use in the past six months (1=never to 7=20 or more times).

Maternal communication and relationship—Youth were asked if they had a mother, female guardian, or woman who acted as their mother and to identify this person (e.g., birth mother, foster mother, etc.). Youth then answered all mother questions about this person. YMSM reported the frequency of maternal communication on a five-point 1=never to 5=all the time scale in eight domains: (1) puberty, biology, and general human sexuality (e.g., how babies are made); (2) how to resist sexual pressure from a partner; (3) sexual satisfaction and desire; (4) having sex with a male; (5) having sex with a female; (6) having sex with a transgender female; (7) STIs and HIV/AIDS; and (8) condoms. All items were based on prior research[26], with the exception of having sex with males, females, and transgender females. A single item asked how often youth talked about their sexual orientation with their mother (1=never to 4=openly)[27]. Finally, youth rated their agreement on a five-point Likert scale that their mother was warm and loving most of the time[28].

Sociodemographic characteristics—Youth provided their age, race/ethnicity, sexual orientation, sexual attraction, education, and current employment and housing status.

Data Analysis

All data was analyzed using SPSS 22. We first analyzed descriptive characteristics, including behavioral risk factors and mother-son communication. We next examined self-reported testing behaviors and serostatus. In conjunction with survey date and self-reported status, we calculated the percentage of YMSM who had an HIV test in the past six months, and the number of youth with an HIV-positive test result who reported being HIV-negative or of unknown serostatus. A series of multivariate logistic regression models were then conducted to examine the sociodemographic, behavioral, and maternal correlates of having engaged in routine HIV testing. We utilized the frequency of CAI with a male partner of unknown/different HIV-status for sexual risk behavior, as this is the primary route of HIV transmission for YMSM[1].

Results

Sample characteristics

Table 1 presents sample characteristics and behavioral risk factors for HIV infection. The mean age was 18.47 years old (SD=.81) and 83.7% identified as Black/African American. The majority, 65.9%, identified as gay, queer, or same-gender loving and 31.1% identified as bisexual. Over half of youth lived with their parents or family. All but one youth (99.3%) had a mother figure growing up and 80.2% of moms were biological mothers (see Table 1). Forty-one percent reported CAI with a male partner of unknown/different serostatus in the past six months. In contrast, 11.6% reported condomless vaginal sex with a female and 4.8% reported any unprotected oral, vaginal or anal sex with a transgender female.

Mother-son communication and relationship characteristics

Table 2 presents the mean levels of maternal communication and warmth. Mothers most often discussed condoms (M=4.14; SD=1.33), followed by STIs and HIV/AIDS (M=3.53; SD=1.56), and puberty-related topics (M=2.89; SD=1.41). YMSM reported lower mean levels of communication about resisting sexual pressure, having sex with a male, and sexual satisfaction and desire (see Table 2). The lowest mean level of communication was for having sex with a transgender woman (M=1.24; SD=.85). Notably, youth reported high levels of open communication about their sexual orientation (M=3.52; SD=1.21) and maternal warmth (M=4.53; SD=.95).

HIV testing history

Table 3 presents self-reported testing behaviors. Overall, 90.3% of youth reported having ever had an HIV test. The median length of time since the last test was 2.14 months (SD=11.83; Range=0.13–84.90 months). Among YMSM who had previously tested for HIV, 70.9% reported a test in the past six months. Most YMSM tested at LGBT-serving organizations and medical settings (see Table 3), and 7.5% had most recently tested at a House-Ball community event. For self-reported serostatus, 11.7% reported being HIV-positive and 3.3% reported not knowing their serostatus.

HIV test results

Table 3 also shows the percentage of youth who accepted an HIV test, the reasons youth declined to test, and the test results. Acceptability was high, with 97.8% accepting a rapid test. Among the three youth who declined testing, the most commonly cited reason was “already knowing one’s status” (n=2). In total, 14.7% of youth were seropositive. All self-reported infections were confirmed and six YMSM who reported being HIV-negative or of unknown serostatus tested HIV-seropositive.

Sociodemographic, behavioral, and maternal correlates of routine HIV testing

Table 4 presents a series of multivariate logistic regressions examining the sociodemographic, behavioral, and maternal correlates of testing in the previous six months. Model 1 assessed the role of sociodemographic factors. Sexual orientation was the only significant correlate (OR=0.24; 95% CI: 0.10–0.57). To better understand this relationship, we conducted bivariate logistic regression with dummy variables and applied a Holm-modified Bonferroni correction to control for experimentwise error rates[29]. The results indicated that gay-identified YMSM were 3.47 times more likely than bisexually-identified YMSM to have tested for HIV in the past six months (95% CI=1.42–8.50; p=.006).

Models 2 and 3 examined behavioral and maternal correlates, with each set of variables entered in a block along with sociodemograhic factors. In Model 4, all contextual and sociodemograhic factors were simultaneously entered in to the final model. As shown in Model 2, three behavioral risk factors were significant. Contrary to our hypotheses, CAI was negatively associated with routine testing (OR=0.64; 95% CI=0.44–0.93), as was having had an STI (OR=0.30; 95% CI=0.09–0.96). In contrast, alcohol use was positively associated with testing for HIV in the past six months (OR=1.58; 95% CI=1.15–2.18). Consistent with

Model 1, sexual orientation remained significant when controlling for behavioral risk factors. Model 3 shows the maternal correlates when controlling for sociodemographic factors. As expected, maternal communication about having sex with males was significant (OR=2.32; 95% CI=1.25–4.29); however, communication about condoms and STIs/HIV were not. Maternal conversations about puberty-related topics trended towards significance and sexual orientation remained significant (see Table 4).

In the final regression model (Model 4), seven factors were statistically significant. Although marginally significant in Model 3, maternal communication about puberty was negatively associated with testing (OR=0.45; 95% CI=0.24–0.86) in Model 4. Communication about sex with males remained significant, such that a one unit increase in the frequency of maternal communication about same-sex behavior was associated with a 2.36 increase in the odds of routine testing (95% CI=1.13–4.94). Both CAI (OR=0.49; 95% CI=0.28–0.86) and STI history (OR=0.17; 95% CI=0.04–0.83) remained negatively associated with HIV testing, and alcohol use remained positively associated (OR=1.74; 95% CI=1.07–2.82). As with all prior models, sexual orientation was associated with a lower likelihood of testing (OR=0.12; 95% CI=0.28–0.86).

Discussion

HIV testing remains critical for linking HIV-positive unaware youth to care and for providing HIV-negative youth with relevant interventions, including PrEP for those aged 18 and over. Notably, we found that 90.3% of YMSM in Project READY had previously tested for HIV and 70.9% of these youth were within the CDC's testing paradigm for high-risk populations. The high rates of testing in our sample surpass those in previous studies with YMSM of color, which have ranged from 29–80%[20,30]. This may reflect local public health efforts to expand HIV testing among YMSM [31], and/or that many of the youth tested at LGBT-serving organizations, medical settings, or in the House-Ball community, three groups that have been responsive to the epidemic among YMSM.

Despite high rates of testing, we also found high levels of HIV infection, with 14.7% of YMSM testing positive for HIV and 31.58% of HIV-positive youth (n=6) reporting that they were seropositive unaware. Although research has raised concerns about the validity of self-reported serostatus among Black MSM[32], the high rates of infection underscore the need to deliver HIV-prevention interventions for YMSM during adolescence. Current efforts, including PrEP, often target YMSM aged 18 and older. However, research suggests that HIV-prevention interventions for YMSM should start before the onset of sexual activity[33]. As with heterosexual youth, many YMSM become sexually active before age 18[22].

Parents are uniquely positioned to deliver interventions to YMSM during adolescence[14]. Research with heterosexual youth has found that parents most often talk about puberty and biology/reproduction[34], condoms[35], and STIs and HIV/AIDS[35]. We observed similar patterns, with YMSM reporting that their mothers most often discussed condoms and STIs/HIV. Youth also reported high levels of open communication about their sexual orientation and high levels of maternal warmth, pointing to an important opportunity to involve parents in current HIV-prevention efforts. However, these factors were not significant. Rather,

mother-son communication about same-sex behavior was the only topic associated with a greater likelihood of routine HIV testing. Currently, few programs help parents talk to their sons about same-sex behavior; however, our results suggest that helping mothers to have meaningful conversations with their sons about sexual relationships with other males is especially important.

Interestingly, communication about puberty was negatively associated with youth's testing behaviors. It may be that these conversations occurred when YMSM were younger, as this tends to be one of the earliest topics that parents discuss[36]. Our measure, based on prior research[26], asked about puberty, biology, and general human sexuality, including how babies are made; as such, it is possible that these conversations focused on pregnancy prevention, which may not be associated with HIV testing. Prior research with YMSM has tended to rely on global measures of parent-adolescent communication about sex that were developed and normed with heterosexual youth[13]. Our results highlight the importance of examining the timing, content, and frequency of parent-adolescent communication in greater detail, especially those topics that are proximally related to the social and sexual lives of YMSM. New measures of parent-adolescent communication that are specific to the sexual health of YMSM may need to be developed.

Notably, 41% of YMSM reported CAI with a male partner of unknown/different HIVstatus. Furthermore, reporting CAI and a positive STI history were negatively associated with HIV testing, suggesting that high-risk YMSM are not testing at recommended levels. This contradicts prior research[37], and suggests that targeted campaigns are needed to help YMSM accurately assess their risk for HIV infection. Similarly, our results suggest that targeted campaigns are needed for bisexual males, as they tested at lower rates than gay males and may serve as a bridge population to female partners. The high rates of CAI and negative association with testing are worrisome given that same-sex contact remains the primary route of HIV infection for YMSM in the U.S.[1]. CAI may be particularly risky for Black and Latino YMSM, as dense HIV infection rates combined with narrow networks of sexual partners, low levels of seropositive awareness, and high rates of community viral load heighten the probability of coming into contact with HIV[38]. In addition, data from current PrEP demonstration projects indicate that MSM of color are not accessing PrEP at the levels of their White peers[39]. The combined influence of these factors, e.g., CAI in sexual networks with high rates of HIV infection and low rates of viral suppression and PrEP uptake, highlight the need for biomedical, behavioral, and structural interventions to prevent HIV infection among YMSM of color.

Limitations

Study findings should be interpreted in the context of the limitations. First, causal inferences cannot be made and findings may not generalize to other YMSM. Although we attempted to recruit youth aged 13–19, the majority of participants were 18–19 years old. This highlights the need to identify settings where YMSM socialize and congregate, and for research on age-specific disparities in the Continuum of Care. We employed point-of-care testing because data collection often occurred in agencies or public spaces; as such, we did not obtain viral load or identify acute HIV infections. Future research should use the CDC's

primary testing algorithm for 4th generation testing with multispot differentiation assay. Additionally, the study is based on self-report data, which may be subject to bias[32]. Our measure of CAI combined partners of unknown and different status and did not assess insertive or receptive CAI. Future studies should query specific partners and sexual acts, as this will yield additional insights. Finally, we did not examine father-son communication, as 40% of the sample did not have a father figure while growing up. Examining both mother and father communication will be important for better understanding the dynamics of family communication, and the relative influence of mothers and fathers. We also did not examine the quality of maternal communication or the quality of the information that mothers communicated. Future research should examine how these aspects of communication and other parenting practices, e.g., parental monitoring and supervision, are related to preventing HIV among YMSM.

Implications

Despite these limitations, study findings underscore that YMSM are at high risk for HIV infection during adolescence and that additional efforts are needed to stem the youth epidemic. This study is one of the first to examine the association between maternal communication about sex and HIV testing among Black and Latino YMSM, and adds to the small but growing body of research examining family influences on the health of LGBT youth[12,15], and the specific role that parents may play in preventing HIV among YMSM[13–15]. Although negative parent-child dynamics remain a concern in this research [15], our findings suggest that there are opportunities to involve parents in current HIV prevention efforts. Further, as youth are coming out earlier[22], interventions that help parents to deliver sexual health information tailored to the needs of YMSM will be critical in the ongoing fight against HIV among same-sex behaving adolescents. These may include family-based interventions or programs to improve the quality and impact of maternal communication about sex[16]. Institutions that serve large numbers of YMSM, such as schools, health clinics, and LGBT serving organizations, could be ideal settings for engaging parents in this work.

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Abbreviations

YMSM	Younger men of color who have sex with men
HIV	Human Immunodeficiency Virus

AIDS	Acquired Immune Deficiency Syndrome
PrEP	Pre-Exposure Prophylaxis
STIs	sexually transmitted infections
LGBT	lesbian, gay, bisexual and transgender
CAI	condomless anal intercourse

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Implications and Contribution

Little is known about mother-son communication about sex and routine HIV testing among YMSM. Results indicate that YMSM are at significant risk for being infected with HIV during adolescence and that mother-son communication about same-sex behavior may support YMSM's testing behaviors.

Table 1

Project READY YMSM Sample Characteristics and Behavioral Risk Factors for HIV, Chicago 2013–2014 (N=135)

Item	Mean or %
Age	18.47 years (SD=.81)
Race/Ethnicity	
Black/African American	83.7
Latino	5.2
Black and Latino	3.7
Multi-racial	7.4
Sexual Identity	
Gay, same-gender loving, queer	65.9
Bisexual	31.1
Other or heterosexual/straight	3.0
Sexual Attraction	
Only attracted to cisgender males	54.8
Mostly attracted to cisgender males	20.0
Equally attracted to cisgender males and cisgender females	21.5
Mostly attracted to cisgender females	1.5
Somewhat or mostly attracted to transgender females	1.5
Other	.7
Highest level of education	
Less than 8th grade	1.5
Some high school	37.0
12th grade but no degree	5.9
High school diploma / GED	34.1
Some college	21.5
Employed part- or full-time	27.6
Current living situation	
Living with parents/family	58.5
Living with friends, partner, or others	31.9
Homeless / unstably housed / transitional shelter / group home	5.9
Living alone (not in a shelter)	3.7
Grew up with maternal figure in the home	99.3
Biological mother	80.2
Grandmother	12.2
Aunt	3.1
Foster mother	3.1
Other female caregiver	1.5
Recruitment	
Peer referral	40.0
LGBT venue	37.8

Item	Mean or %
LGBT event	6.7
Peer referral at an LGBT event	9.6
Research study	5.9
Alcohol use in past 6 months	
Never	13.3
Once	4.4
Twice	9.6
3–4 times	17.0
5–9 times	17.8
10–19 times	13.3
20 or more times	24.4
Marijuana use in past 6 months	
Never	25.2
Once	5.2
Twice	8.1
3–4 times	6.7
5–9 times	5.2
10–19 times	7.4
20 or more times	42.2
Condomless anal intercourse in past 6 months with a male partner of unknown/different HIV status	
Never	59.0
Once	17.9
Twice	6.7
3–4 times	9.7
5–9 times	4.5
20 or more times	2.2
Condomless vaginal sexual intercourse in past 6 months with a female partner of unknown HIV status	11.6
Any unprotected oral, vaginal, or anal sexual intercourse with a transgender woman partner of unknown HIV status	4.8
Ever had an STI	33.6
Gonorrhea	18.2
Chlamydia	15.3
Syphilis	13.6
HPV / Genital Warts	2.3
Hepatitis B	.8
Hepatitis C	---
Herpes	---

Notes: GED = General Education Development; LGBT = Lesbian, gay, bisexual, and transgender; STI = Sexually Transmitted Infection; HIV = Human Immunodeficiency Virus; HPV = Human Papillomavirus.

Table 2

Mother-Son Communication about Sex and Sexuality and Maternal Warmth, Project READY, Chicago 2013–2014 (N=135)

Item	Mean (SD)
Frequency of mother-son communication about sex[a]	
Condoms	4.14 (1.33)
STI and HIV/AIDS information and risk	3.53 (1.56)
Puberty, biology, and general human sexuality	2.89 (1.41)
Sex with a female	2.75 (1.52)
Resist sexual pressure	2.72 (1.54)
Sex with a male	2.49 (1.56)
Satisfaction and desire	2.45 (1.60)
Sex with a transgender female	1.24 (.85)
Frequency of conversations about sexual orientation[b]	3.52 (1.21)
Mother is warm and loving[c]	4.53 (.95)

Notes: SD = Standard Deviation; STI = Sexually Transmitted Infection; HIV/AIDS = Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome

[a] Mother-son communication about sex scored on a 1=never to 5=always scale.

[b] Frequency of conversations among sexual orientation scored on a 1=never to 4=openly scale.

[c] Maternal warmth scored on a 1=strongly disagree to 5=strongly agree scale.

Table 3

HIV testing History and Test Results among YMSM, Project READY, Chicago 2013–2014 (N=135)

Item	Median, %, or n
Ever had an HIV Test	90.3
Tested in last 3 months	58.1
Tested in last 3–6 months	12.8
Tested in last 6–12 months	16.2
Tested more than 12 months ago	12.8
Months since last test	Med=2.14 (SD=11.83)
Site of Previous HIV Test	
LGBT Community-Based Organization	42.5
Clinical / Medical / Hospital Setting	25.0
House / Ball Event	7.5
Research Study	6.7
Mobile Clinic / Testing Site	4.2
School	1.7
Department of Corrections	1.7
Didn't Know	7.5
Other	3.3
Result of previous HIV test	
Negative	85.0
Positive	11.7
Unknown	3.3
Accepted Oral Rapid HIV Test	97.8
Reasons for declining test	
Uncomfortable testing in this setting	n = 1
Recently had a test	n = 1
Not ready to have a test	n = 1
Already knows status	n = 2
Other reasons	
None given	n = 1
Doesn't want to get tested with testing staff	n = 1
Results of Oral Rapid HIV Test	
Positive	14.7
Negative	85.3
Seropositive unaware	31.58 (n=6)

Notes: Med = Median; SD = Standard Deviation; HIV = Human Immunodeficiency Virus

Table 4

Demographic, Behavioral, and Maternal Correlates of HIV testing in the Past Six Months among YMSM, Project READY, Chicago 2013–2014 (N=110)

	Model 1 Demographic Factors		Model 2 Behavioral Risk Factors		Model 3 Maternal Factors		Model 4 Full Model	
Item	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95%**
Puberty, biology, and sexuality	--	--	--	--	.63+	.37 – 1.07	.45*	.24
Satisfaction and desire	--	--	--	--	.76	.49 – 1.17	.82	.48
Resist sexual pressure	--	--	--	--	1.10	.72 – 1.72	1.42	.83
Sex with a male	--	--	--	--	2.32**	1.25 – 4.29	2.36*	1.13
Sex with a female	--	--	--	--	.78	.48 – 1.25	.74	.42
Sex with a transgender female	--	--	--	--	1.06	.49 – 2.28	1.28	.49
STIs and HIV/AIDS	--	--	--	--	1.06	.64 – 1.77	.91	.49
Condoms	--	--	--	--	1.35	.82 – 2.21	1.15	.64
Openness about sexual orientation	--	--	--	--	.64	.35 – 1.18	.65	.33
Maternal warmth	--	--	--	--	.71	.31 – 1.65	.57	.23
CAI with male partner	--	--	.64*	.44 – .93	--	--	.49*	.28
Ever had an STI	--	--	.30*	.09 – .96	--	--	.17*	.04
Alcohol use in past 6 months	--	--	1.58**	1.15 – 2.18	--	--	1.74*	1.07
Marijuana use in past 6 months	--	--	.82	.64 – 1.06	--	--	.76	.52
Age	1.05	.57 – 1.94	1.13	.57 – 2.21	1.21	.51 – 2.88	1.21	.42
Race/ethnicity	2.13+	.99 – 4.62	2.01	.87 – 4.67	2.16	.85 – 5.48	1.57	.56
Sexual orientation	.24***	.10 – .57	.14***	.05 – .41	.23***	.08 – .70	.12**	.03
Education	.84	.56 – 1.27	.74	.46 – 1.18	.60+	.34 – 1.07	.52+	.27
Employment	.52	.19 – 1.47	.46	.14 – 1.52	.51	.15 – 1.74	.38	.09
Housing	1.23	.59 – 2.59	1.04	.47 – 2.33	1.27	.50 – 3.21	1.07	.38
Recruitment Method	1.07	.80 – 1.43	1.13	.82 – 3.94	1.16	.80 – 1.70	1.39	.86
Self-reported serostatus	1.22	.61 – 2.45	1.80	.82 – 3.94	.88	.42 – 1.85	1.74	.61

Notes:

+ $p < 10$,

HIV = Human Immunodeficiency Virus; STI = Sexually Transmitted Infection; CAI = Condomless Anal Intercourse; OR = Odds Radio; CI = Confidence Interval

* $p < .05$,

** $p < .01$,

*** $p < .001$