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LGBT Health. Author manuscript; available in PMC 2024 August 26.

Published in final edited form as:

LGBT Health. 2020 October ; 7(7): 367–374. doi:10.1089/lgbt.2019.0317.

Family Factors and HIV-Related Risk Behaviors Among Adolescent Sexual Minority Males in Three United States Cities, 2015

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Abstract

Purpose: We examined the relationship between family factors and HIV-related sexual risk behaviors among adolescent sexual minority males (ASMM) who are affected disproportionately by HIV.

Methods: We analyzed results from the National HIV Behavioral Surveillance among Young Men Who Have Sex with Men. Adolescent males ages 13–18 who identified as gay or bisexual, or who reported attraction to or sex with males were interviewed in 2015 in Chicago, New York City, and Philadelphia. Separate log-linked Poisson regression models were used to estimate associations between family factors and sexual risk behaviors.

Results: Of the 569 ASMM, 41% had condomless anal intercourse in the past 12 months, 38% had ‡4 male sex partners in the past 12 months, and 23% had vaginal or anal sex before age 13. ASMM who had ever been kicked out of their house or run away, those who were out to

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Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention. Some of the data presented in this article were previously presented at the Conference on Retroviruses and Opportunistic Infections in Boston, Massachusetts, February 22-25, 2016.

Author Disclosure Statement

No competing financial interests exist.

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their mother, and those who were out to their father, were more likely to engage in sexual risk behaviors. ASMM who were currently living with parents or guardians and those who received a positive reaction to their outness by their mother were less likely to engage in sexual risk behaviors.

Conclusion: Our findings highlight the important role of family factors in HIV risk reduction among ASMM. A bet- ter understanding of the complex dynamics of these families will help in developing family-based interventions.

Keywords

adolescent sexual minority males; family factors; HIV risk; YMSM

Introduction

Adolescent and young men who have sex with men (YMSM) are affected disproportionately by HIV in the U.S.[1] Approximately 93% of HIV diagnoses among male youth ages 13-19 in 2018 were attributed to male-to-male sexual contact. Twenty-five percent of the men who have sex with men, who were diagnosed with HIV in 2018, were between the ages of 13 and 24.[2]

Adolescent sexual minority males (ASMM) are a broader group of males inclusive of, but not limited to, adolescent YMSM. ASMM include those who have had same-sex sexual contact, who report same-sex attraction, or who identify as gay, bisexual, or some other non-heterosexual identity. ASMM are more likely than non-sexual-minority adolescent males to engage in behaviors that increase their risk of HIV.[3,4] In addition, ASMM engaging in anal sex, are at increased risk for HIV because the per-act risk of HIV-transmission for anal sex is much higher than for insertive vaginal sex.[5]

A consensus has emerged that individual-level risk behaviors alone do not explain disparities in HIV, and the role of relationship-level, community-level, and structural factors are key to addressing these disparities.[1,6-10] In terms of relationship-level factors, the role of the family, especially the quality of the parent–child relationship, is critically important for adolescents.[11,12] A large base of evidence exists about the role of family factors such as family support, family cohesion, parent-adolescent communication, and parental monitoring in reducing sexual risk behaviors among heterosexual adolescents.[13-18]

For ASMM less is known about the relationship between family factors and sexual risk behaviors. A systematic literature review, published in 2010, found limited research on parental influences and sexual risk behaviors among sexual minority youth[19] and another published in 2018 found few studies demonstrating protective associations between family factors and sexual risk behaviors.[20]

Despite limited published research demonstrating a relationship between family factors and sexual health for ASMM, some findings point to the importance of family factors. For example, family rejection has been shown to increase the likelihood of sexual minority youth engaging in sexual risk behaviors.[21,22] Some ASMM may avoid coming out to their

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parents for fear of rejection or negative reactions.[23,24] Although some youth report that their relationship with their parents improved after coming out, for many it strains the relationship.[25] Findings around parental monitoring and parental–adolescent communication in reducing sexual risk for ASMM have been mixed[26-31] suggesting that parenting practices may be more complex for ASMM than for heterosexual adolescents. Studies also have found that ASMM who report maternal support and family connectedness were less likely to be HIV positive.[32,33]

Interventions designed for families may offer an approach to reducing sexual risk behaviors among ASMM. However, it is important to better understand the role of family factors in reducing sexual risk behaviors in ASMM to develop such interventions. The aim of this analysis was to examine the relationship between family factors and HIV-related sexual risk behaviors for ASMM by analyzing results from the 2015 National HIV Behavioral Surveillance among Young Men Who Have Sex with Men (NHBS-YMSM).

Methods

We recruited participants in Chicago, New York City, and Philadelphia who were eligible to enroll in the study if they were 1) between the ages of 13 and 18; 2) self-reported that they were male sex at birth and currently identified as male; and 3) self-reported gay or bisexual identity, ever having had sexual contact with another male, or same-sex attraction. Each site used two of three recruitment methods: respondent driven sampling, venue-based sampling, and Facebook sampling. NHBS-YMSM is considered a convenience sample.

An in-person eligibility screener was administered to potential participants and if eligible, the interviewer reviewed the assent/consent. Because NHBS-YMSM was anonymous, a waiver of documentation of informed assent/consent was received for all locations and participants provided consent/assent orally. A waiver of parental permission for participants under age 18 was requested, with each site receiving differing approvals (New York City ages 13-17; Philadelphia ages 14-17; and Chicago ages 16-17). If the participant assented/consented, a trained interviewer administered the behavioral assessment and offered an HIV test. Participants were compensated $25 for survey participation and $25 for HIV testing. All NHBS-YMSM activities were approved by local institutional review boards in each city and by the Centers for Disease Control and Prevention. More details about sampling, recruitment, and measures are described elsewhere.[34]

Measures

Sociodemographics.—To assess race/ethnicity, participants were asked a yes/no question about whether they considered themselves to be Hispanic/Latino and another question about which racial group(s) they considered themselves to be. In this analysis, responses were combined to include participants that reported Hispanic/Latino ethnicity of any race, Black/African American, White, or any other racial group which included American Indian or Alaskan Native, Asian, Native Hawaiian or Other Pacific Islander, other race, or multiple races. To assess sexual identity, participants were asked if they considered themselves to be heterosexual or straight, homosexual or gay, or bisexual. We used two indicators to assess socioeconomic (SES): financial hardship and parental education. We

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assessed financial hardship based on whether a participant responded yes to one of two questions: 1) in the past 12 months, was there a time where there wasn't enough money in your house for rent, food or utilities such as gas, electric, or phone? and 2) during the past 12 months, was there any time when you needed medical care but didn't get it because it wasn't affordable? Participants were defined as being low SES if either the participant had a financial hardship in the past 12 months, or the highest education level received by a parent was less than college.

Family factors.—We used seven indicators to assess family factors: ever kicked out of their house or run away; currently living with parents or guardians; out to mother; mother's reaction to coming out; out to father; father's reaction to coming out; and perceived family support. Participants were asked if they had ever been kicked out of their house or run away. To assess if participants currently lived with parents or guardians, participants were asked about their current living situation and could select one of several response options such as if they were living with parents or guardians, alone, with other relatives, with friends, with a partner, or in a school dormitory. To assess outness to mother or father, participants were asked if they had ever told their mother or the woman who raised them and their father or the man who raised them that they identify as gay or bisexual or are attracted to or have had sex with males.

Only those who reported that they were out to their mother or father were asked about how their parent responded, and they could select: "very positively," "positively," "no reaction," "negatively," or "very negatively." Participants who responded "very positively" or "positively" were combined into positive reaction to outness by mother/father with the remaining response options combined into not positive reaction to outness by mother/father. To assess perceived family support, we used the 4-item (my family really tries to help me; I get the emotional help and support I need from my family; I can talk about my problems with my family; my family is willing to help me make decisions) Family subscale of the Multidimensional Scale of Perceived Social Support[35] each with a 5-point response option ranging from "strongly agree" (coded as 5) to "strongly disagree" (coded as 1). In this sample, the scale demonstrated adequate internal consistency ($\alpha = 0.9$).

Sexual behaviors.—We assessed ever engaged in sexual activity based on whether a participant responded yes to one of three questions: 1) have you ever had oral sex with a male?; 2) have you ever had anal sex with a male?; and 3) have you ever had vaginal or anal sex with a female? Based on those responses, participants were asked the number of males they had oral or anal sex with in the past 12 months. They were then asked about the number of male partners they had anal sex with in the past 12 months and with how many they had anal sex without using a condom.

Anal intercourse was defined as participants who reported having had anal sex in the past 12 months with at least one male partner and we assessed condomless anal intercourse (CAI) if they reported having sex without a condom with any of these anal sex males partners. We assessed whether the participant had four or more male oral or anal sex partners in the past 12 months. After asking participants if they had ever had anal sex with a male or vaginal or anal sex with a female, they were asked at what age they first had this type of

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sex. We assessed vaginal or anal sex with a male or female partner before the age of 13 if they reported the first time for having sex before the age of 13 to either of these questions. Sex before age 13 was selected as the measure of early sexual debut for consistency with a national surveillance system, Youth Risk Behavior Surveillance System.[3]

Data analysis

We examined the frequency of sociodemographics, family factors, and sexual risk behaviors (CAI with a male partner in the past 12 months, ≥ 4 male sex partners in the past 12 months, and vaginal or anal sex before age 13) of participants who completed the interview (n=569). Next, we used separate log-linked Poisson regression models, one for each sexual risk behavior, with robust standard errors to estimate adjusted prevalence ratios (aPR) and 95% confidence intervals (CI). Models were adjusted for age, race/ethnicity, SES, and city.

Results

Among the 569 ASMM who participated in the study, 14% (n=81) were 13-15 years old, 58% (n=331) were 16-17 years old, and 28% (n=157) were 18 years old. Most (64%; n=360) identified as homosexual or gay, 33% (n=186) as bisexual, and 3% (n=16) as heterosexual or straight. For race and ethnicity, 40% (n=227) identified as Black or African American and 39% (n=222) as Hispanic or Latino. By city, 41% (n=231) were recruited from Chicago, 41% (n=232) from New York City, and 19% (n=106) from Philadelphia. Approximately 60% (n=337) were categorized as low SES. Most (85%, n=480) had engaged in sexual activity in their lifetime, including oral or anal sex with a male partner or vaginal or anal sex with a female partner. Approximately 63% (n=356) had anal intercourse with a male partner in the past 12 months. (Table 1)

Over one-quarter (26%; n=147) had ever been kicked out of their house or run away. Most (75%; n=426) were living with parents or guardians. Nearly three-quarters (74%; n=417) were out to their mother, and of those, 64% (n=264) reported a positive reaction, 14% (n=60) reported no reaction, and 22% (n=92) reported a negative reaction. Approximately half (50%; n=273) were out to their father, and of those, 49% (n=134) reported a positive reaction, 23% (n=63) reported no reaction, and 28% (n=76) reported a negative reaction. Approximately one-quarter (24%; n=134) were not out to either parent. The mean family support scale score was 3.7 (standard deviation = 1.0; range: 1-5). (Table 2)

Regarding sexual risk behaviors, 41% (n=231) had CAI in the past 12 months. More than one-third (38%; n=170) had ≥ 4 male sex partners in the past 12 months. Nearly one-fourth (23%, n=128) had vaginal or anal sex before age 13. (Table 2)

After adjusting for age, race/ethnicity, SES, and city, participants who had ever been kicked out of their house or run away were more likely than those who had never been kicked out or run away to have had CAI in the past 12 months (aPR: 1.42; 95% CI: 1.17-1.74), ≥ 4 male sex partners in the past 12 months (aPR: 1.68; CI: 1.33-2.11), and vaginal or anal sex before age 13 (aPR: 1.58; CI: 1.17-2.14). Those who were currently living with parents or guardians were less likely than those who were not currently living with parents or guardians to have had CAI in the past 12 months (aPR: 0.74; CI: 0.59-0.91), ≥ 4 male sex partners in

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the past 12 months (aPR: 0.67; CI: 0.52-0.87), and vaginal or anal sex before age 13 (aPR: 0.58; CI: 0.42-0.80).

Participants who were out to their mother were more likely than those not out to their mother to have had CAI in the past 12 months (aPR: 1.63; CI: 1.22-2.19), ≥ 4 male sex partners in the past 12 months (aPR: 1.81; CI: 1.20-2.73), and vaginal or anal sex before age 13 (aPR: 1.56; CI: 1.05-2.33). Participants who reported a positive reaction to coming out to their mother were less likely than those who reported no or negative reaction to have ≥ 4 male sex partners in the past 12 months (aPR: 0.70; CI: 0.55-0.89) and vaginal or anal sex before age 13 (aPR: 0.70; CI: 0.52-0.95). Participants who were out to their father were more likely than those not out to their father to have had CAI in the past 12 months (aPR: 1.33; CI: 1.08-1.63) and ≥ 4 male sex partners in the past 12 months (aPR: 1.53; CI: 1.17-1.98). No associations were found between positive reaction to coming out by fathers and any of the sexual risk behaviors. For each 1-point increase on the family support scale, the likelihood of having had vaginal or anal sex before age 13 decreased by 5% (aPR: 0.95; CI: 0.92-0.98). (Table 3)

Discussion

This analysis sought to examine the relationship between family factors and sexual risk behaviors for ASMM. One-quarter of our sample had been kicked out of their house or run away. Research indicates that a disproportionate number of sexual and gender minority youth experience homelessness; a common reason cited for these youth has been family rejection.[36,37] Although family rejection may not always take the form of ejection from home or an adolescent running away, our findings are consistent with other studies that have found family rejection and isolation from family to be linked to increased engagement in sexual risk behaviors.[21,22,33] This increased risk is potentially due to the reduced instrumental (i.e., housing instability, homelessness, poverty) and emotional (i.e., lack of guidance and support, emotional isolation) support that can result from family rejection, increasing a youth's need to engage in survival sex and making them more vulnerable to risky sexual partnerships.[21]

Conversely, participants living with parents or guardians were less likely to engage in sexual risk behaviors. At a minimum, youth who live with parents or guardians are provided with some level of instrumental support, which may partially explain this finding. This finding may also be because youth living with parents or guardians have less opportunity to engage in sexual activity and may experience increased parental monitoring. A recent study found that while parental monitoring was effective at decreasing sexual activity among ASMM, it was not effective in reducing their sexual risk behaviors among those ASMM who were sexually active,[29] suggesting that the effect of living at home and parental monitoring may not have a longer term protective effect.

Similar to other studies, more participants were out to their mother than to their father, and a higher proportion reported a positive reaction by their mother than their father to coming out.[24,32,33,38] Like a few other studies, we found that participants who were out to a parent were more likely to engage in sexual risk behaviors.[31,33] Some evidence suggests that those

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who reach gay or bisexual identity development stages at an earlier age are more likely to engage in sexual risk behaviors and be infected with HIV.[33,39] Coming out to a parent may be part of this process of identity development. Furthermore, youth who are out may feel more comfortable navigating spaces in which sexual partners can be found, thereby increasing their risk of engaging in sexual risk behaviors. For youth whose parents are not supportive of their sexual orientation, coming out could pose a risk.

Our findings do, however, highlight the complexity of the role of parental factors. Specifically, among participants who were out to their mother, those who reported a positive reaction from their mother were less likely to engage in two of the sexual risk behaviors examined. A qualitative study of ASMM identified parent–child closeness as an important influence for avoidance of sexual risk.[27] Many ASMM, however, report that their relationships with their parents are strained after they come out.[25] The way a parent reacts when a child comes out may affect the parent-child relationship, and a positive reaction may help promote or maintain family closeness, potentially reducing the likelihood of ASMM engaging in sexual risk behaviors.

We did not find an association between a father's positive reaction to coming out and sexual risk behaviors. Our inability to detect significant findings for this analysis may have been partly due to the smaller number of participants who were out to their fathers and the lower proportion of fathers who reacted positively compared to mothers.

Higher perceived family support was associated with a decreased likelihood of having sex before age 13. We did not find, however, significant associations between perceived family support and the other two sexual risk behaviors. Despite our findings, perceived family support has been associated with improved health outcomes among sexual and gender minority adolescents,[32,40-43] suggesting that while the general perception of family support may not protect against sexual risk behaviors, specific aspects of supportive parents such as the quality of the parent-child relationship may have a stronger impact.

Our findings have implications for prevention efforts and suggest that parents and families have an important role in reducing sexual risk behaviors for ASMM. Although ASMM who were out to a parent were more likely to engage in sexual risk behaviors, those who reported a positive reaction to coming out from their mother were less likely to engage in sexual risk behaviors, highlighting the critical importance of a parent's reaction. A positive parent reaction to a child coming out may serve to maintain or strengthen the parent–child relationship, with an opportunity for other protective behaviors such as parental monitoring and communication to be implemented.

Notably, we found that a sizeable group of our participants reported a negative reaction to coming out by their parents, 22% for mothers and 28% for fathers. For many ASMM, the relationship with their parents becomes strained after disclosure.[25] The initial disclosure to a parent, however, is not a stand-alone event; it is within the context of an existing relationship and has an influence on the relationship over time.[44] Although the initial reaction is important, helping families to become more supportive over time may have benefit for ASMM. Evidence indicates that many parents of ASMM want guidance[45,46] and

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many ASMM want a closer relationship with their parents.[25] Because most ASMM are out to at least one parent,[24,32,33,38] there is an opportunity to work with these families to help them become more supportive of their ASMM child.

Family interventions with general adolescent populations have been shown to be effective in reducing sexual risk behaviors[47-49] and with appropriate adaption might be useful for ASMM.[32,50] A couple of recent studies have identified the potential benefit of parent–child communication about sex,[26,30] but that the communication needs to be "specific, high quality, and low in negative emotionality."[30] These findings suggest that helping parents improve their relationship with their son and the way that they communicate may offer a promising approach to family-based interventions. However, although there are some promising family-based interventions focused on improving parent–child relationships, there are no known studies of the efficacy of family-based interventions in reducing sexual risk behaviors for ASMM.[51] Intervention studies of family-based strategies that examine sexual risk behavior outcomes are needed to identify family-based interventions to decrease sexual risk behaviors among ASMM.

It is important to note that our data also demonstrate that there is a sizeable group of ASMM who have not come out to either parent (24%). Developing programs aimed at these families is more challenging, and it may be more useful to help connect these youth with other trusted adults in the absence of parental support.

Limitations

This analysis is not without limitations. First, because this was a convenience sample, participants may not be representative of ASMM in the participating cities nor in the U.S. Second, this was a cross-sectional study, therefore temporal directions of the associations cannot be determined. Particularly because several of the behaviors were measured for the previous 12-month period, we do not know whether the behaviors preceded the family interactions, reducing what inferences we can make about the role of family factors and sexual risk behaviors. Third, the interview items were self-report, making responses subject to social desirability bias and recall error. The Family subscale of the Multidimensional Scale of Perceived Social Support measures perceived support about family but does not specifically include any measurement focusing on the relationship of participants with their parents.

Conclusion

Our findings add to the growing body of literature that highlights family factors as important for HIV risk reduction among ASMM.[27,32,33] Family dynamics for ASMM can be complex, and the coming out process can impact those dynamics. A better understanding of these family dynamics is critical to developing interventions to help support families and maximize the potential protective benefits offered by relationships between ASMM and their parents.

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Acknowledgements

We thank Dr. Sarah L. Braunstein, Director, HIV Epidemiology and Field Services Program, New York City Department of Health and Mental Hygiene for her role as the Principal Investigator for NHBS-YMSM in New York City. We also thank the NHBS-YMSM participants.

Funding

Funding was provided by the Centers for Disease Control and Prevention through PS11-1101 to Chicago Department of Public Health, New York City Department of Health and Mental Hygiene, and Philadelphia Department of Public Health.

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Table 1.

Selected characteristics of adolescent sexual minority males, National HIV Behavioral Surveillance-Young Men who Have Sex with Men, 2015 (n=569)

	N	%
Age (years)		
13-15	81	14.2
16-17	331	58.2
18	157	27.6
Sexual identity		
Homosexual/Gay	360	64.1
Bisexual	186	33.1
Heterosexual/Straight	16	2.9
Race/ethnicity		
Black/African American	227	40.0
Hispanic/Latino[a]	222	39.1
White	92	16.2
Other[b]	27	4.8
City		
Chicago	231	40.6
New York City	232	40.8
Philadelphia	106	18.6
Socioeconomic status (SES)[c]		
Low	337	60.3
High	222	39.7
Ever engaged in sexual activity[d]		
Yes	480	84.5
No	88	15.5
Anal intercourse with a male partner, past 12 months		
Yes	356	62.8
No	211	37.2

Numbers may not add to the total because of missing data.

[a]Hispanic/Latino persons could be of any race.

[b]Includes persons who indicated American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, some other race, or multiple races.

[c]Low SES includes those who reported in the past 12 months that either there was not enough money in their house for rent, food, or utilities; or during the past 12 months that they could not get needed medical care because it was not affordable; or that their parent's level of education was less than college.

[d]Includes anal or oral sex with a male or vaginal or anal sex with a female.

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Table 2:

Family factors and sexual risk behaviors among adolescent sexual minority males, National HIV Behavioral Surveillance-Young Men who Have Sex with Men, 2015 (n=569)

	n	%
Ever kicked out of their house or run away		
Yes	147	25.8
No	422	74.2
Currently living with parents or guardians		
Yes	426	74.9
No	143	25.1
Out to mother[a]		
Yes	417	73.7
No	149	26.3
Mother's reaction to coming out[b]		
Positive	264	63.5
No reaction	60	14.4
Negative reaction	92	22.1
Out to father[a]		
Yes	273	50.3
No	270	49.7
Father's reaction to coming out[b]		
Positive	134	49.1
No reaction	63	23.1
Negative reaction	76	27.8
Out to either parent[c]		
Yes	431	76.3
No	134	23.7
Family support scale[d]		
Mean score, SD	3.7	1.0
Condomless anal intercourse with a male partner, past 12 months		
Yes	231	40.7
No	336	59.3
Four or more male sex partners, past 12 months[e]		
Yes	170	37.9
No	279	62.1
Vaginal or anal sex before age 13		
Yes	128	22.5
No	440	77.5

SD, standard deviation.

Numbers may not add to the total because of missing data on some items.

[a]Told mother/father that they identify as gay or bisexual or are attracted to or have sex with males.

[b]Among those that said they were out to their mother/father. “Yes” includes those that reported a very positive or positive reaction. “No” includes those that reported no, negative, or a very negative reaction.

[c]Out to either mother or father.

[d]The scale consists of the following measures: My family really tries to help me; I get the emotional help and support I need from my family; I can talk about my problems with my family; My family is willing to help me make decisions. Response options included strongly disagree, disagree, neither agree nor disagree, agree, strongly agree. A higher score indicates greater perceived family support.

[e]Includes oral or anal sex.

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Table 3:

Association between family factors and sexual risk behaviors among adolescent sexual minority males, National HIV Behavioral Surveillance-Young Men who Have Sex with Men, 2015 (n = 569)

	Condomless anal intercourse with a male partner, past 12 months			Four or more male sex partners, past 12 months			Vaginal or anal sex before age 13		
	%	aPR[a]	95% CI	%	aPR[a]	95% CI	%	aPR[a]	95% CI
Ever kicked out of their house or run away									
Yes	55.8	1.42*	1.17-1.74	53.3	1.68*	1.33-2.11	33.6	1.58*	1.17-2.14
No	35.5		REF	31.2		REF	18.7		REF
Currently living with parents or guardians									
Yes	35.8	0.74*	0.59 - 0.91	33.4	0.67*	0.52 - 0.87	19.8	0.58*	0.42 - 0.80
No	55.6		REF	48.8		REF	30.8		REF
Out to mother [b]									
Yes	46.3	1.63*	1.22 - 2.19	41.6	1.81*	1.20 - 2.73	25.7	1.56*	1.05 - 2.33
No	25.5		REF	22.0		REF	14.2		REF
Positive reaction to outness by mother [c]									
Yes	42.0	0.83	0.68 - 1.01	35.4	0.70*	0.55 - 0.89	20.8	0.70*	0.52 - 0.95
No	53.3		REF	51.0		REF	33.6		REF
Out to father [b]									
Yes	46.3	1.33*	1.08 - 1.63	44.7	1.53*	1.17 - 1.98	25.4	1.21	0.90 - 1.63
No	34.2		REF	29.3		REF	18.9		REF
Positive reaction to outness by father [c]									
Yes	40.3	0.85	0.66 - 1.10	48.5	1.20	0.90 - 1.61	20.3	0.89	0.60 - 1.32
No	52.2		REF	41.7		REF	30.2		REF
Family support scale [d]									
		0.98	0.96 - 1.00		0.97	0.95 - 1.00		0.95*	0.92 - 0.98

*p-value <0.05

[a]Adjusted for age, race/ethnicity, socioeconomic status, and city.

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[b] Told mother/father that they identify as gay or bisexual or are attracted to or have sex with males.

[c] Among those that said they were out to their mother/father. “Yes” includes those that reported a very positive or positive reaction. “No” includes those that reported no, negative, or a very negative reaction.

[d] The scale consists of the following measures: My family really tries to help me; I get the emotional help and support I need from my family; I can talk about my problems with my family; and My family is willing to help me make decisions. Response options included strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. A higher score indicates greater perceived family support.

aPR, adjusted prevalence ratio; CI, confidence interval.

LGBT Health. Author manuscript; available in PMC 2024 August 26.