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Social Support and HIV-Status Disclosure to Friends and Family: Implications for HIV-Positive Youth

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Abstract

Purpose—The fear of negative reactions from friends and family members affects many HIV-positive adolescents' decisions regarding disclosure of their HIV status. The complex relationships and interplay among social support, fear of stigma, and disclosure of HIV status needs to be better understood among youth living with HIV.

Methods—Social support from friends and family members, and HIV status disclosure were examined among 402 youth, aged 12 to 24 years, living with HIV.

Results—In separate analyses, 1) HIV positive youth who reported more than one close friend, as well as 2) HIV positive youth who reported that friends and family members continued to socialize with them after disclosure of their HIV diagnosis, had higher levels of perceived social support overall (both $p < 0.05$). Furthermore, perceived social support did not differ significantly between those participants for whom no family member knew their HIV status and those for

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SL: Co-wrote the manuscript; co-led the analyses, conceptual development of the manuscript/analyses.

MY: Co-wrote the manuscript; co-led the analyses.

DRH: Co-led, conducted and interpreted the statistical analyses; edited the manuscript.

GWH: Conceptual development of the study on which this manuscript is based; edited the manuscript.

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whom at least one family member knew their status ($p=0.13$). Race/ethnicity, sexual orientation, education level, and current living situation were not associated with family's knowledge of the participants' HIV infection status ($p>0.07$).

Conclusion—This investigation adds important information concerning youth living with HIV, whose early disclosure experiences may influence their resilience and future coping mechanisms regarding experienced stigma, and thus influence the length of time they conceal their HIV status, their decision to disclose their status, and potentially their decisions regarding treatment. Interventions and support systems to assist youth living with HIV with disclosure, as well as medical care, may improve their overall quality of life.

Keywords

Social support; social network; HIV status disclosure; adolescents

Introduction

At the end of 2010, the World Health Organization estimated that 5 million young people age 15 to 24 years were living with HIV/AIDS on a global basis¹. A healthy quality of life for these youth is important as they continue their development into adulthood. HIV-related stigma has been shown to negatively impact quality of life for youth living with HIV (YLHIV).²⁻⁴ The psychological distress that is often experienced by HIV-infected youth as the result of stigma has been associated with participation in sexual and substance use risk behaviors^{5, 6} and decreased adherence to antiretroviral therapies.^{2, 7} Given such stigma, YLHIV may be apprehensive about disclosing their HIV status to parents, friends and sexual partners.⁸ This fear of disclosure of their HIV diagnosis to family and close friends may also reduce the social support they may need to navigate not only typical adolescent developmental issues, but the effects of HIV on their quality of life as well. As the rate of new infections in adolescents has not significantly declined, more research to better understand whether and how social support influences disclosure decisions is needed in order to develop effective interventions.

Social support is critical to healthy development and functioning for all adolescents,^{9, 10} especially support received from peers and friends, which can impact adolescents' self-perception and self-esteem.^{11, 12} Social support may be especially important for adolescents living with HIV, as these youth must not only navigate traditional developmental milestones, but also handle the extra burden of stressors related to anticipated HIV stigma, disclosure of HIV infection, social ostracism, fears of death, and family conflict.¹³ Lack of social support during this developmental period may have negative consequences for the psychosocial functioning of adolescents living with HIV, as lower levels of social support have been associated with more mental health symptoms, including depression and anxiety.¹⁴ Conversely, among adolescent and young adult women living with HIV, those experiencing lower stigma and higher social support were more likely to report greater current life satisfaction, lower illness-related anxiety, and lower illness burden.¹⁵ Though social support is important for all adolescents with or without chronic illnesses, such research highlights evidence that structural factors, such as family stressors and a lack of support, may indeed exacerbate HIV-related disparities in health outcomes in adolescents.

Social support may also have a positive impact on improved resilience and physical health for adolescents living with HIV, as it has also been associated with motivational readiness for medication adherence¹⁶ and readiness to avoid drug use.¹⁷ Indeed, higher levels of social support for YLHIV might “reverse” the aforementioned detrimental effects of fear associated with anticipated stigma, including the increase in risky behaviors and difficulties with medication adherence.

The association between HIV disclosure and perceived social support can vary depending on different types of relationships. While some people to whom YLHIV disclose their status are accepting and supportive, others reject or alienate the HIV positive individuals.¹⁸⁻²¹ It should also be noted that disclosure is not a one-time event, but a process that may require multiple conversations with the same person over an extended period of time. Furthermore, disclosure to a potential casual or romantic sex partner versus disclosure to a family member or friend may entail different approaches with varying amounts of information shared (e.g., how HIV was acquired, how to protect a sexual partner, how to manage medications). Indeed, most adults living with HIV have disclosed their HIV infection status to someone, most likely to their friends and not to their family members.¹⁸ This needs to be further investigated among adolescents living with HIV.

A disease progression theory behind HIV disclosure purports an individual's apparent physical symptoms of declining health triggers disclosure to friends and family.²¹⁻²³ However, with increased access to medical care as well as uptake of antiretroviral medications (including better control of any adverse side effects), physical symptoms are not as readily exhibited to others, thus allowing individuals to keep their HIV status private. Social support theory, alternatively, generally hypothesizes that social support serves to protect individuals from potential negative effects of life stressors^{18, 24}; moreover, people living with HIV who perceive social support from friends and/or family may be more likely to disclose their HIV status to those friends and/or family without worry of negative reactions. The purpose of this study is to better understand a potential causal direction between social support and subsequent HIV disclosure among YLHIV (see Figure 1), and explore implications for appropriate interventions to support the disclosure process.

The associations among HIV disclosure and non-disclosure, and social support need to be examined further in order to better understand the decision-making process that YLHIV undergo with respect to different relationships and their choices regarding to whom they will disclose. Therefore, the objectives of this study were to: 1) describe the level of perceived social support experienced by youth living with HIV from friends and family members based on a number of sociodemographic characteristics; 2) further analyze the levels of social support based on friends and family disclosure; and 3) examine associations between social support and HIV disclosure.

Methods

C2P® Study Context

The Adolescent Medicine Trials Network for HIV/AIDS Interventions (ATN) is a multicenter collaboration of fifteen clinics and their communities across the United States

and Puerto Rico. Data for the study reported here were collected as Phase II of a three stage prevention research initiative of the ATN, Connect to Protect ® (C2P) Partnerships for Youth Prevention Interventions.²⁵ Local institutional review boards (IRBs) at each of the 15 ATN clinics approved the conduct of the research activities of C2P. Various phases of C2P have been published in detail.²⁶⁻²⁹

Interview data on risk behaviors and social network patterns were collected from approximately 10-15 HIV-positive males and 10-15 HIV-positive females recruited at community venues. C2P staff at each ATN clinic approached potential youth participants at various community venues, previously identified through Phase I of C2P²⁵. Eligible participants were identified, who met the following criteria: acquired HIV after the age of 9 years; sexually active within the past year (excludes forced sex); and between the ages of 12-24 years, inclusive. The current study examines associations among social support and disclosure of HIV status using data from these youth.

Interviews

After screening eligible participants and obtaining verbal consent for participation, the 45-60 minute-long Audio Computer-Assisted Self-Administered Interview (ACASI) was administered. No information identifying individuals, such as names or phone numbers, was collected. Participants were asked to identify “two of the people who are closest” to them in life (interview was limited to a maximum of two people in order to keep the ACASI to an hour in length and maintain participant confidentiality and attention at the venue). They were then asked a battery of questions about the friends they identified and their relationship with them, including whether or not they had sex with the people they identified as closest friends, and if so, whether they were a main or casual sex partner. While the participant was asked about their knowledge of their sex partner's HIV status, the participant was not asked whether the specified partners knew their status. Consequently, interview questions about HIV status disclosure refer to friends and family in general and not necessarily the people they identified. Finally, information regarding participants' living environment was collected.

Measures

The analyses focused on the following domains of interview items: social support and HIV serostatus disclosure to social network members.

Social Support from Social Networks—The total social support score was derived using 24 items encompassing the previously validated Social Provisions Scale,³⁰⁻³² which were administered to capture perceived levels and types of social support of the study participants. Each participant was required to endorse statements describing their current relationships with friends, family, co-workers, and others, on a 4-point Likert scale (strongly disagree, disagree, agree, or strongly agree); higher scores for the overall scale correspond to greater levels of perceived social support, with a maximum total score of 96. Six sub-scales were also derived, each with a maximum total score of 16, representing the following domains: Attachment, Social Integration, Reassurance of Worth, Reliable Alliance, Guidance, and Opportunity for Nurturance. Cronbach's alpha for the total social support

score was equal to 0.90. Cronbach's alpha for the sub-scales was lower, ranging from 0.54 (Opportunity for Nurturance) to 0.74 (Reliable alliance and Guidance).

Participants who answered less than 75% of the items contributing to a scale were recorded as missing for the scale ($n = 6$). For participants answering at least 75% of the items (37 participants answered all but one item; 10 participants answered between 20 and 22 items), the total value of the scaled measure was calculated by multiplying the raw total score of the questions answered by the reciprocal of the proportion of items answered. Reverse coding of responses was applied to some items contributing to the scaled measures so that all items would be coded with qualitatively consistent responses.

Withdrawal of Social Support related to Stigma of Living with HIV—Four questions were asked during the interview regarding reactions of friends and family members to whom they had disclosed their HIV positive status. These items included whether “Friends meet and talk to me less often,” “Friends have stopped asking me to go places,” “Some people in my family talk to me less often,” and whether “Some people in my family have stopped asking me to do things with them.” Each question was answered on the basis of a 4-point Likert scale (strongly disagree, disagree, agree, or strongly agree) that was then dichotomized for purposes of analysis (Yes [agree + strongly agree] vs. No [disagree + strongly disagree]).

Disclosure of HIV Status—Participants were asked two questions regarding disclosure of their HIV serostatus: “How many, if any, of your friends know that you are living with HIV?” and “How many, if any, of your family members know that you are living with HIV?,” each with a choice of 4 response options (None, Some, Most, All). For purposes of analysis, if the participant reported that any of their family members or any of their friends (excluding any friends in HIV or AIDS support groups, if they attended) knew they were living with HIV, the outcome was coded ‘1: disclosed HIV status to at least one person’. If the participant did not disclose their HIV status to any family or friends, the outcome was coded as ‘0: did not disclose HIV status to anyone’.

Data analyses

Descriptive statistics (mean, standard deviation [SD], median, frequency, percent) were used to describe sociodemographic characteristics of the study sample and to describe the social support subscales, as well as the total social support score. The association of sociodemographic characteristics to the number of closest friends named (1 or 2 friends), and family's knowledge of participants' HIV status (no family member knows vs. at least 1 family member knows) was examined using Fisher's exact test for categorical measures and nonparametric testing (Kruskal-Wallis test) for continuous-scaled measures. The association between total social support scores from the Social Provisions Scale and social support related to stigma was examined on the basis of the non-parametric Kruskal-Wallis test.

The association of total social support scores with disclosure of HIV status was examined using logistic regression modeling; the logistic regression model yields an estimate of the probability of a study participant disclosing her/his HIV infection status as a function of his/her total social support score. Covariates were selected that were known

sociodemographic determinants of STI/HIV risk behaviors among youth, such as age, gender, race/ethnicity, sexual orientation as a proxy measure of HIV transmission category,³³ and educational attainment as a proxy measure of socioeconomic status, as well as degree of HIV/STI knowledge.

All analyses were conducted using SAS software, version 9.2 with an alpha of 0.05 used in assessing statistical significance.³⁴⁻³⁵

Results

A total of 402 participants were eligible for the analysis. Sociodemographic characteristics for the overall study sample stratified by number of closest friends named and family's knowledge of participants' HIV status are presented in Table 1. Every participant was able to name at least one closest friend; one closest friend was named by 213 (53.0%) participants, while two closest friends were named by 189 (47.0%) participants. Among those naming one closest friend, 47.9% reported male as their birth gender and 52.1% female, while 60.6% and 39.4% of those naming two closest friends reported male and female as their birth gender, respectively ($p=0.0121$). Similar significant relationships were found with current gender (see Table 1). Age was not associated with number of closest friends named in the study sample, nor were race/ethnicity or current living situation ($p>0.07$). Sexual orientation was significantly associated with number of closest friends named ($p=0.0036$). A larger proportion of those naming one closest friend reported their sexual orientation as heterosexual than among those naming two friends (50.0% vs. 34.9%); in contrast, a smaller proportion of those naming one closest friend reported their sexual orientation as gay/lesbian/bisexual than among those naming two friends (43.4% vs. 59.8%). Education was associated with number of closest friends named ($p=0.0440$); 49.5% of those naming one closest friend completed a high school education or higher, compared to 59.9% of those naming two closest friends.

The majority (71.7%) of participants reported that at least one family member knew their HIV status. Birth and current gender were both associated with family's knowledge of participants' HIV status ($p<0.05$) (Table 1). Among those participants whose families did not know their HIV status ($n=113$), a larger proportion were male (birth gender: 61.9%, and current gender: 60.2%) than among those for whom at least one family member knew their status (50.4% and 46.2%, respectively). Age, race/ethnicity, sexual orientation, highest grade completed and current living situation were not associated with family's knowledge of the participants' HIV infection status ($p>0.07$).

The social support subscales were compared between groups based on number of closest friends named and family's knowledge of the participants' HIV status (Table 2). Although the differences in means and medians were rather modest, the number of closest friends named was significantly associated with total social support and the social support subscales ($p<0.05$). The mean social support measures were higher for those naming two closest friends than for those naming only one. The total social support score did not differ between those participants for whom no family members knew their HIV status and those for whom at least one family member knew their status ($p=0.13$). Only one social support subscale,

Reliable Alliance, was significantly correlated with family's knowledge of HIV status ($p=0.0080$).

A total of 329 participants (82.7%) disclosed their HIV infection status to at least one person, and 69 (17.3%) did not. The association of the total social support score with disclosure of HIV status was not significant in the univariate unadjusted logistic regression model ($p=0.09$) (Table 3). Although none of the covariates examined were associated with disclosure ($p \geq 0.2$) when modeled individually, the total social support score was associated with disclosure of HIV status in the multivariable adjusted model ($p=0.054$), although just above the cut-off for meeting statistical significance. The probability of disclosure increased by 2% with each unit increase in the total social support score.

With regard to the “withdrawal of social support related to stigma of living with HIV” questions, total social support scores were lower among those who indicated that their friends meet or talk to them less often (mean score 70.2 vs. 77.3; $p<0.0001$), and among those who indicated that friends stopped asking them to go places (65.0 vs. 77.3; $p<0.0001$) (Table 4). Results were similar when examining HIV positive youth's family network. The total social support scores were lower among those who indicated that their family talked to them less often (mean score 69.8 vs. 76.8; $p<0.0001$), and among those who indicated that family stopped asking them to do things with them (68.0 vs. 77.3; $p<0.0001$).

Discussion

The analysis reported here included adolescents and youth living with HIV, aged 12 to 24, including sexual minorities, thereby adding important information relevant to young populations disproportionately affected by HIV. The current study highlights factors important to quality of life among YLHIV, with results consistent with the body of adult literature suggesting the importance of social support from family and friends with respect to HIV status disclosure. The total social support score was the single determinant that was positively associated with HIV disclosure when the age, sex, race/ethnicity, and education of youth with HIV were controlled. Though a recent meta-analysis of literature on HIV disclosure, stigma and social support concluded that there is empirical data to support: 1) a positive association between HIV status disclosure and social support; 2) a negative association between HIV related stigma and social support; and 3) a negative association between HIV related stigma and HIV status disclosure,³⁶ only two studies included adolescent and young adults (mean age 14.7 and 23.0, respectively). Additional research evaluating the importance and impact of the role of stigma, real and perceived, on YLHIV disclosure status would greatly add to our understanding of this process.

Other studies also support a link between stigma-driven non-disclosure or delayed disclosure, and delayed seeking of care and services.³⁶⁻³⁸ Indeed, various theoretical frameworks and research on HIV/AIDS stigma also indicate that different dimensions of stigma adversely affect quality of life, healthcare access, and health outcomes³⁹. Additional studies with YLHIV that quantitatively and qualitatively assess how such different dimensions of stigma affect adolescents' willingness to disclose their HIV status will better elucidate the complex interplay of behavior and resultant health outcomes along the HIV

continuum of care, including adherence to medications and achievement of viral suppression.

Though the current study adds to the research literature by investigating a large sample of YLHIV, an area that would benefit from further research is how social support, stigma, and HIV disclosure change over time from the developmental perspective of a young adolescent with HIV at age 12 years to an adult with HIV at age 24 years. For example, a young adolescent who has just learned of his/her own HIV diagnosis, may be counseled to maintain his/her health information as a private matter not to be discussed with others. Over time, as adolescents mature and relationships with friends over parents become more important, an older adolescent may strive for more independence from authority figures and actively seek out support from friends; rebelliousness during adolescence may also lead to poor choices regarding whom it is appropriate to disclose. The role of social support throughout development with respect to HIV disclosure needs to be better understood in order to design and implement appropriate HIV disclosure interventions.

Results of this study indicate that males and sexual minorities (gay/lesbian/bisexual youth), were more likely to identify two closest friends. Although the majority of the study sample was African American (56.0%), there was no association between race/ethnicity and HIV disclosure, suggesting that youths in the ATN study, who had multiple potential causes of stigma (i.e., sexual orientation and HIV infection), tend to establish social, as opposed to family support systems, regardless of their ethnic and cultural background. Overall, the importance of various types and sources of social support for YLHIV, and how to cope with and react to the negative impact of HIV stigma need to be integrated into resilience and other interventions designed to enhance their quality of life.

Limitations

The ATN study data provides a preliminary basis to help explain changes in perceived social support, which could determine the probability of new disclosures to members of social and family networks. As the parent study from which the data were collected limited the participant responses to a maximum of two persons, the current study did not afford a larger database from which to further investigate HIV disclosure factors. As such, close relationships outside of friends (e.g., sexual partners, family) and an expanded assessment related to the quality of the relationships need to be considered in future studies.

The ATN study could also be expanded in future research to include data on experienced stigma which might provide concrete examples of how disclosure of HIV status could lead to harmful effects. In order to capture the dynamics and iterative nature of the disclosure process, future studies should consider past reactions to disclosure that could change subsequent patterns and rates of disclosure, and collect longitudinal data that documents the precursors to and consequences of disclosure, helping to better characterize the developmental course of HIV disclosure from adolescence through adulthood.

Overall, the early experiences of these youth may determine their resilience and future coping mechanism regarding HIV stigma. Our results suggest the importance of considering potentially variable effects of experienced stigma on disclosure among youth in different

contexts, and the importance of potential for enhancing resilience resources⁴⁰. Interventions to assist with disclosure to various members of an adolescent's social circle may greatly benefit the ability of YLHIV to experience a healthy and productive life.

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Implications and Contribution Summary Statement

This investigation adds important information concerning youth living with HIV, whose early disclosure experiences may influence their resilience and future coping mechanisms regarding experienced stigma, and thus influence the length of time they conceal their HIV status, their decision to disclose their status, and potentially their decisions regarding treatment.

Figure 1.
Relationship among Social Support and HIV+ Disclosure

Table 1

Demographic Characteristics of the Study Population Overall and According to the Number of Closest Friends Named and Family's Knowledge of Participant's HIV Status.

Demographic characteristic	Overall (N=402)	Number of Closest Friends Named			Family's Knowledge of Participants' HIV Status		
		1 friend (n=213)	2 friends (n=189)	p-value ¹	No family members know (n=113)	At least 1 family member knows (n=286)	p-value ²
Sex at birth: n (%)							
Male	216 (53.9)	102 (47.9)	114 (60.6)	0.0121	70 (61.9)	143 (50.4)	0.0445
Female	185 (46.1)	111 (52.1)	74 (39.4)		43 (38.1)	141 (49.6)	
Current sex: n (%)							
Male	202 (50.2)	93 (43.7)	109 (57.7)	0.0195	68 (60.2)	132 (46.2)	0.0377
Female	185 (46.0)	111 (52.1)	74 (39.2)		43 (38.1)	142 (49.7)	
Transgender	15 (3.7)	9 (4.2)	6 (3.2)		2 (1.8)	12 (4.2)	
Age:							
Mean (SD)	20.6 (2.4)	20.6 (2.3)	20.6 (2.5)	0.98	20.3 (2.3)	20.7 (2.5)	0.0562
Median	21.0	21.0	21.0		20.0	21.0	
Race/Ethnicity: n (%)							
Hispanic/Latino	121 (30.1)	54 (25.4)	67 (35.4)	0.0712	36 (31.9)	84 (29.4)	0.59
African-American	225 (56.0)	128 (60.1)	97 (51.3)		60 (53.1)	163 (57.0)	
White	23 (5.7)	10 (4.7)	13 (6.9)		5 (4.4)	18 (6.3)	
Other	33 (8.2)	21 (9.9)	12 (6.3)		12 (10.6)	21 (7.3)	
Sexual orientation: n (%)							
Straight (heterosexual)	172 (42.9)	106 (50.0)	66 (34.9)	0.0036	43 (38.1)	127 (44.6)	0.15
Gay/Lesbian/Bisexual	205 (51.1)	92 (43.4)	113 (59.8)		59 (52.2)	144 (50.5)	
Not specified (not sure/undecided/rather not answer)	24 (6.0)	14 (6.6)	10 (5.3)		11 (9.7)	14 (4.9)	
Highest grade completed:							
Less than high school	182 (45.6)	107 (50.5)	75 (40.1)	0.0440	43 (38.1)	137 (48.4)	0.0737
High school or more	217 (54.4)	105 (49.5)	112 (59.9)		70 (61.9)	146 (51.6)	

Demographic characteristic	Overall (N=402)	Number of Closest Friends Named			Family's Knowledge of Participants' HIV Status		
		1 friend (n=213)	2 friends (n=189)	p-value ^I	No family members know (n=113)	At least 1 family member knows (n=286)	p-value ^I
Current living situation:							
Your own house or apartment	130 (32.4)	75 (35.2)	55 (29.3)	0.45	38 (33.6)	92 (32.3)	0.43
Parent(s) house or apartment	134 (33.4)	68 (31.9)	66 (35.1)		32 (28.3)	99 (34.7)	
Other place	137 (34.2)	70 (32.9)	67 (35.6)		43 (38.1)	94 (33.0)	

^I P-values obtained from Fisher's exact test for categorical and nonparametric Kruskal-Wallis test for continuous-scaled measures.

Table 2

Descriptive Characteristics of Summary Scores of Social Support Overall and According to the Number of Closest Friends Named and Family's Knowledge of HIV Status.

Social support sub-scales ¹	Overall (N=402)	Number of Closest Friends Named			Family's Knowledge of Participants' HIV Status		p-value ²
		1 friend	2 friends	p-value ²	No family members know	At least 1 family member knows	
Attachment:							
Mean (SD)	12.0 (2.4)	11.8 (2.4)	12.4 (2.2)	0.0058	11.8 (2.4)	12.1 (2.3)	0.16
Median	12.0	12.0	12.0		12.0	12.0	
Social integration:							
Mean (SD)	12.5 (2.2)	12.2 (2.2)	12.8 (2.2)	0.0085	12.4 (2.1)	12.5 (2.3)	0.28
Median	12.0	12.0	13.0		12.0	12.0	
Reassurance of worth:							
Mean (SD)	12.3 (2.3)	12.0 (2.4)	12.6 (2.1)	0.0064	12.2 (2.4)	12.3 (2.2)	0.74
Median	12.0	12.0	12.0		12.0	12.0	
Reliable alliance:							
Mean (SD)	13.0 (2.5)	12.6 (2.5)	13.5 (2.4)	<0.0001	12.4 (2.7)	13.2 (2.4)	0.0080
Median	13.0	13.0	14.0		12.0	13.0	
Guidance:							
Mean (SD)	13.2 (2.5)	12.6 (2.7)	13.9 (2.1)	<0.0001	12.8 (2.7)	13.4 (2.4)	0.06
Median	14.0	13.0	14.0		13.0	14.0	
Opportunity for nurturance:							
Mean (SD)	11.7 (2.3)	11.5 (2.5)	12.0 (2.1)	0.0440	11.8 (2.3)	11.6 (2.4)	0.74
Median	12.0	12.0	12.0		12.0	12.0	
Total social support score:							
Mean (SD)	74.6 (11.4)	72.7 (11.6)	77.3 (10.5)	<0.0001	73.4 (11.7)	75.2 (11.2)	0.13
Median	75.0	72.0	78.0		73.0	75.0	

¹The correlations between the total social support score and the individual subscales were all greater than 0.6.

The p-values were determined using nonparametric testing (Kruskal-Wallis test).

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Table 3

Unadjusted and Adjusted Association of Total Social Support Score with HIV Status Disclosure

OR (95% CI)	Univariate Unadjusted Models		Multivariable Adjusted Model	
	p-value ^I	OR (95% CI)	p-value ^I	
Total social support score:				
Unit increase	1.02 (0.99, 1.04)	0.09	1.02 (1.00, 1.05)	0.054
Age:				
1 year increase	1.06 (0.96, 1.18)	0.27	1.07 (0.96, 1.20)	0.24
Sex at birth:				
Female	0.92 (0.55, 1.56)	0.77	0.99 (0.58, 1.73)	1.0
Male	1.0		1.0	
Race/Ethnicity:				
African-American	0.19 (0.03, 1.44)	0.20	0.17 (0.02, 1.35)	0.24
Hispanic/Latino	0.28 (0.04, 2.18)		0.25 (0.03, 2.00)	
Other	0.14 (0.02, 1.23)		0.15 (0.02, 1.28)	
White	1.0		1.0	
Education:				
High school or greater	0.79 (0.47, 1.34)	0.38	0.65 (0.37, 1.15)	0.14
Less than high school	1.0		1.0	

^I P-values were obtained from logistic regression modeling.

Table 4

Association Among Social Support and “Withdrawal of Social Support related to Stigma of Living with HIV” with Friends and Family Members

Withdrawal of Social Support related to Stigma of Living with HIV Items	Total Social Support			
	n	Mean (SD)	Median	p-value ^I
Friends meet and talk to me less often:				
Yes	63	70.2 (10.9)	70.0	<0.0001
No	182	77.3 (11.0)	78.0	
Friends have stopped asking me to go places:				
Yes	38	65.0 (10.0)	65.5	<0.0001
No	208	77.3 (10.6)	77.5	
Some people in my family talk to me less often:				
Yes	61	69.8 (12.0)	69.0	<0.0001
No	224	76.8 (10.3)	77.0	
Some people in my family have stopped asking me to do things with them:				
Yes	57	68.0 (12.2)	68.0	<0.0001
No	225	77.3 (10.0)	77.0	

^I P-values were obtained using nonparametric (Kruskal-Wallis) test.