

Disclosure of HIV Status and Psychological Well-Being Among Latino Gay and Bisexual Men

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This study examined disclosure of HIV-positive serostatus by 301 Latino gay and bisexual men to members of their social networks and the mental health consequences of such disclosure. The sample was recruited from clinics, hospitals, and community agencies in New York City, Washington, DC, and Boston. Proportions disclosing differed depending on the target, with 85% having disclosed to closest friend, 78% to male main partner, 37% to mother, and 23% to father. Although there were differences depending on the target, disclosure was related to greater quality of social support, greater self-esteem, and lower levels of depression. Moreover, findings indicated that social support mediated the relationship between disclosure of serostatus and both self-esteem and depression. Thus, disclosure resulted in greater social support, which in turn had positive effects on psychological well-being. Findings demonstrate that generally Latino gay men are selective in choosing people to whom they disclose their serostatus and that disclosure tends to be associated with positive outcomes.

KEY WORDS: disclosure of HIV status; psychological well-being; Latino gay men; mental health.

INTRODUCTION

Self-disclosure—revealing personal information to others—can have major consequences for a person's relationships, mood, image, and life (Derlega *et al.*, 2000). In this study we examined direct, verbal disclosure of HIV-positive serostatus among Latino gay and bisexual men to members of their social networks and the mental health consequences of such disclosure. Although there are other ways to reveal serostatus (e.g., leaving HIV medication in plain sight), this study addressed direct disclosure to different targets and explored how disclosure affects psychological well-being, both directly and through its impact on social support. Understanding the impact of serostatus disclosure on social support and men-

tal health is important because of the reported associations between these factors and sexual risk (Kelly *et al.*, 1993; Kimberly and Serovich, 1999; Ostrow *et al.*, 1994), adherence to antiretroviral regime (Holzemer *et al.*, 1999; Nannis *et al.*, 1993; Singh *et al.*, 1996), and immune responses (Ullrich *et al.*, 2003).

Disclosure is a complex process with potentially widely varying consequences. For example, consequences can include greater intimacy or rejection, feelings of relief or remorse, and enhanced status or a “spoiled image” (Baxter and Montgomery, 1996; Goffman, 1963; Omarzu, 2000). Moreover, disclosure can affect the target of the disclosure, who might find the new information beneficial or distressing (Derlega *et al.*, 2000; Fesko, 2001; Simoni *et al.*, 1997).

Due to the stigma associated with HIV (Cline and McKenzie, 2000; Herek and Glunt, 1988), disclosure of HIV-positive serostatus can be particularly difficult. Such disclosure can result in harmful reactions as extreme as physical assault or loss of employment (Gielen *et al.*, 1997; Grinstead *et al.*, 2001; Lyter *et al.*, 1987; Simoni *et al.*, 1997). On the other hand, it can also produce substantial benefits in the

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form of greater emotional, physical, or instrumental support and care (Derlega *et al.*, 2000).

Latinos and men of color in the United States are generally less likely to disclose positive serostatus than white men (Mansergh *et al.*, 1995; Marks *et al.*, 1992; Mason *et al.*, 1995). In comparing their HIV-positive Latino sample with a mostly Anglo sample studied by Hays and colleagues, Marks and colleagues noted discrepant levels of disclosure, such as 24% of the Latino versus 48% of the Anglo sample having disclosed to their mothers, 8% versus 40% to their fathers, and 76% versus 98% to their main sexual partners. We know of only one published report of greater disclosure to sexual partners by Latinos than by Anglo and African American men (Stein *et al.*, 1998). The small number of Latinos ($n = 30$) in this heterogeneous sample of injection drug users, gay men, and heterosexual men, however, raises questions about generalization of these findings.

Disclosure to Members of the Social Network

As is evident from the rates of disclosure reported by Marks *et al.* (1992), disclosure of HIV status varies depending on the target. Greater disclosure to friends and main partners than to parents has been consistently reported in both multiethnic (Kalichman *et al.*, 2003; Mansergh *et al.*, 1995) and Latino gay samples (Marks *et al.*, 1992; Zea *et al.*, 2004). Moreover, in our earlier work with a different sample of Latino HIV-positive gay men we found that disclosure occurred more frequently between committed partners than casual partners (Zea *et al.*, 2004). In addition, Marks *et al.* (1992) noted greater disclosure to gay than to straight friends.

These varied proportions of disclosure of serostatus across the social network have been seen as arising from the differing risks, benefits, and motivations relative to different targets. For example, the motivation to protect the other person may result in disclosure to a sexual partner (Derlega *et al.*, 2000; Serovich and Mosack, 2003), but nondisclosure to a parent (Mason *et al.*, 1995; Zea *et al.*, 2004). Moreover, because positive serostatus is often interpreted as resulting from drug use or homosexual behavior (Kalichman and Nachimson, 1999), infected individuals are more likely to disclose to those people within their social network who will not react negatively to these behaviors. Indeed, Zea *et al.* (2004) found that HIV-positive Latino gay men were more likely to disclose their serostatus to their mothers, fathers, and

friends when these targets also knew that the discloser was gay.

Mental Health Consequences of Disclosure

High levels of self-esteem and low levels of depression are conceptualized as indicators of psychological well-being (Stephen and Philpot, 1996; Tarlow and Haaga, 1996). Moreover, social support has been shown to affect both of these aspects of mental health in Latino lesbians and gay men (Zea *et al.*, 1999). Literature pertaining to the role of disclosure of positive serostatus on psychological well-being has addressed effects on social support and depression; however, we are unaware of previous studies examining the association between disclosure and self-esteem.

Disclosure of serostatus has implications for social support, and social support, in turn, may affect psychological well-being. Disclosure or knowledge of serostatus has often been positively related to social support (Kadushin, 2000; Simoni *et al.*, 2000). Although those who disclose tend to report more social support, differences have been found in this association depending on the target. In studies of adults, partners and friends have been said to provide more support than family members, and mothers were said to provide more support than fathers (Kalichman *et al.*, 2003; Petrak *et al.*, 2001; Sachperoglou and Bor, 2001).

Moreover, the impact on psychological well-being may vary depending on whether the reaction is helpful or undermining. Hays *et al.* (1993) found that helpful reactions from targets were negatively associated with depression and anxiety. However, disclosure of positive serostatus may elicit negative social interactions, which can be detrimental to the mental health of HIV-positive individuals (Ingram *et al.*, 1999; Schrimshaw, 2002; Siegel *et al.*, 1997). Undermining reactions from close friends, intimate partners, and parents have been associated with greater depression, but in the same study supportive reactions were not significantly related to lower levels of depression (Derlega *et al.*, 2003).

Studies examining the relationship between disclosure of HIV-positive serostatus and depression have yielded inconsistent findings. Although there is evidence of an association between disclosure and lower levels of depression in samples of African American women (Armistead *et al.*, 1999), of gay men (Hays *et al.*, 1993; Perry *et al.*, 1994), and of a mixed group of gay and straight men (Straits-Tröster *et al.*, 1994), other studies have reported conflicting findings.

Comer *et al.* (2000) found a relationship between disclosure and depression among Latinas, but not among African American and white women. Moreover, the direction was opposite to that reported by Armistead *et al.* (1999); in this case, higher rates of disclosure were related to higher rates of depression. Comer *et al.* (2000) concluded that their findings did not support the theory that disclosure leads to improved mental health, but rather suggested that the stigma connected with HIV and the consequent negative reactions to its disclosure can disturb the discloser's emotional state.

Other studies have either failed to find effects on depression (Simoni *et al.*, 2000) or found an association with disclosure to certain targets, but not others (Kalichman *et al.*, 2003, Petrak *et al.*, 2001). For example, Kalichman *et al.* (2003) found no overall relationship between disclosure and depression in a sample of HIV-positive men and women; however, follow-up analyses with specific targets revealed an association between disclosure to specific targets and depression. Moreover, Petrak *et al.* (2001) reported that depression was significantly related to higher rates of disclosure of serostatus to family, but not to friends, in a mixed race and gender sample from the United Kingdom.

Hypotheses and Research Questions

The current study explored several aspects of disclosure to the social network. First of all, we provided descriptive information about the extent to which participants reported a variety of general or practical consequences of disclosure of serostatus, such as becoming active in HIV-related activities or feeling relieved of a burden. Next, we looked at disclosure to specific targets within the social network. In keeping with findings from previous research, we hypothesized that proportions of disclosure of HIV seropositive status would differ depending on the target. We expected that a higher proportion of men would disclose to friends and sexual partners than to family members. Moreover, we anticipated greater disclosure to mothers than fathers. Because Latino culture is often characterized as being high in homonegativity, we hypothesized that disclosure would be more common to non-Latino friends than to Latino friends.

Most importantly, this study examined the relationship between disclosure of seropositive status and psychological well-being. First, we addressed

direct effects of disclosure on social support, depression, and self-esteem. Based on the literature, we hypothesized that disclosure to all targets would be associated with greater quality of social support, but that the relationship might be stronger for friends and partners than family members. Because research findings concerning depression have been inconsistent, we expected that the relationship between disclosure and depression might be evident only with some targets. In addition, we examined the relationship between disclosure and self-esteem. Although we expected that disclosure of positive serostatus would be associated with greater self-esteem, we did not make hypotheses about specific targets due to the paucity of previous research on this topic.

In addition to direct effects on psychological well-being, we addressed the question of whether social support acts to mediate the effects of disclosure of serostatus on depression and self-esteem. We hypothesized that by revealing positive serostatus to members of the social network, Latino men elicit greater social support, which then promotes psychological well-being.

METHOD

Participants

Recruitment of 310 participants took place in New York City, Washington, DC, and Boston. To ensure that all participants were seropositive without conducting HIV testing, we recruited the sample from clinics, hospitals, and community agencies serving HIV-positive Latino men. We attempted to have referrals for screening from 100% of the Latino HIV-positive men from each participating clinic or program. Staff approached clients, described the study, and asked if they were interested in participating. If so, the potential participants could arrange to take part in the study at the site of the clinic or program or at another location. Criteria for participation included being Latino/Hispanic, biological male, 18 years or older, and having had sex with men or self-identifying as gay or bisexual.

A few participants who categorized themselves as heterosexual and had not had sex with men in the last year were mistakenly referred. These men were dropped from the sample, as were a few men whose data appeared to be invalid (e.g., reporting 240 pills prescribed for daily consumption). The final sample included 301 men, 2 of whom had some missing

data and therefore could not be included in all the analyses.

Fewer than 10% of the participants were born in the United States. Others immigrated from 20 Spanish-speaking countries, with the largest concentrations coming from Puerto Rico (20%), Colombia (17%), Mexico (11%), El Salvador (7%), Venezuela (7%), the Dominican Republic (6%), Cuba (5%), and Peru (5%). Immigrant participants indicated a variety of reasons for coming to the United States, including to improve financial situation (40%), to live a homosexual life more openly (24%), and to get HIV medication (20%).

Overall, the educational level of participants was varied. Although 22% did not finish high school, a quarter of the sample completed college or beyond. However, income was low, with over two fifths earning less than \$400 a month, and 30% earning between \$401 and \$800.

Procedure

A survey was administered using computer-assisted self-interview technology with audio enhancement (Audio-CASI). Responses were indicated by touching the computer screen; therefore, computer skills were not required. Participants with reading difficulties could listen to the audio presentation of the questions and responses. Participants chose to complete the survey in either Spanish or English; about four fifths responded in Spanish. Participation took an average of 1.5 hr. Respondents received monetary reimbursement of \$50 for the time they spent participating in the study, a transportation stipend, as well as snacks. Finally, participants were provided a list of resources for HIV/AIDS services in their area.

All new questions and measures used in the survey were translated from English to Spanish and back-translated using the procedures suggested by Brislin (1986) and Marín and Marín (1991) to ensure language equivalence. A panel of experts from different Spanish-speaking countries reviewed the resulting Spanish version to identify and eliminate regional expressions that would not be universally recognized by Spanish speakers. A similar procedure had been followed earlier for questions and measures that we used in our previous research. Finally, the panel of experts examined the survey to determine level of difficulty, and we revised the survey to render it accessible to those with limited education.

Measures

Disclosure of seropositive status to specific targets was assessed with questions designed for this study which addressed several potential targets: mother, father, closest friend, male main partner, and when applicable, female main partner. We asked "Does your mother know that you are HIV-positive?" Responses included (1) *yes*, (2) *no*, and (3) *she suspects it, but I am not sure she knows*. In instances in which a participant's mother had died after the participant's seropositive diagnosis, the same question was asked in the past tense, but if her death preceded the seropositive diagnosis, this question was skipped by the Audio-CASI program.

If the respondent answered affirmatively to the question of mother's knowledge of seropositive status, he was asked "Who told your mother that you were HIV-positive?" Responses included (1) *I told her*, (2) *someone else told her with my permission*, (3) *someone else told her without my permission*, (4) *someone else told her anonymously*, and (5) *she found out some other way*. These alternatives emerged from in-depth interviews with HIV-positive Latino gay and bisexual men, and focus group participants subsequently considered them relevant. The first two responses were rated as disclosure and the last three as nondisclosure. Similar questions were used for father, closest friend, male main partner, and female main partner.

Disclosure of seropositive status to target groups was assessed with two additional questions that pertained to disclosure to two groups of targets, rather than to specific individuals. These two measures aggregated over family members and over close friends. They were "How many of your close friends have you told that you are HIV-positive?" and "How many of your family members have you told that you are HIV-positive?" Responses included (1) *none*, (2) *some*, (3) *about half*, (4) *most*, and (5) *all*. In addition, two separate questions asked, "How many of your Latino friends have you told that you are HIV-positive?" and "How many of your non-Latino friends have you told that you are HIV-positive?" The response options were identical to those for other target groups, with the addition of an option for *not applicable*. For analytic purposes, responses to these two questions were collapsed into two groups: those telling most or all of their friends versus those telling fewer.

Depression was assessed with the short form of the Beck Depression Inventory (Beck *et al.*, 1988; Beck and Beck, 1972). This is a 13-item scale in which

higher scores indicate greater depression. The short form has been previously used with Spanish-speaking populations (Zea *et al.*, 1996, 1999). Internal consistency reliability of this measure was .91 with this sample.

Quality of social support was assessed with a 9-item version of the Quality of Social Support Scale (QSSS; Goodenow *et al.*, 1990). This scale measures perceptions of the quality of support received from others. Sample questions are, “There is someone who will take over my tasks or chores when I feel sick” and “There is someone who will give me a hug or hold me in their arms when I need comforting.” The Likert scale response format ranges from (1) *Never true* to (4) *Always true*. This scale has also been previously used with Spanish-speaking populations (Zea *et al.*, 1999), and its internal consistency reliability with this sample was .89.

Self-esteem was assessed with the Single-Item Self-Esteem Scale (SISE; Robins *et al.*, 2001). This item is “I have high self-esteem,” and the Likert scale response ranges from (1) *strongly disagree* to (5) *strongly agree*. Robins *et al.* demonstrated that the single item measurement was a viable and practical method of assessing self-esteem. The correlation between the SISE and the Rosenberg (1965) Self-Esteem Scale reported by Robins *et al.* (2001) ranged from .72 to .80 in three separate studies. The test-retest reliability over five assessment periods, each separated by a year, was .75 (Robins *et al.*, 2001). Moreover, the single item and the Rosenberg Self-Esteem Scale had nearly identical correlations with many other scales used to assess criterion validity.

Perceived general and practical outcomes of disclosure of seropositive status included nine items that were generated from focus groups with Latino HIV-positive gay men. All items began with the statement “As a result of telling others that I am HIV-positive” and then continued with the consequences. Because there was no reason to believe that the experience of these consequences would covary, the items were treated separately and not summarized in a scale. Items covered general outcomes of disclosure (e.g., *As a result of telling others that I am HIV-positive, I feel free of a burden, more relaxed, relieved*) and practical outcomes (e.g., *As a result of telling others that I am HIV-positive, the possibility of staying legally in this country is now in danger*). The response scale ranged from (1) *totally disagree* to (5) *totally agree*.

Demographic information was collected concerning age, income, employment, and education.

Statistical Methods

Data were analyzed using chi-square tests, binomial tests of equal proportions, and multivariate analysis of covariance (MANCOVA) with follow-up analysis of covariance (ANCOVA). In addition, the mediational model was tested using procedures described by Baron and Kenny (1986). These procedures are described in more detail in the Results section, where the specific results are discussed.

RESULTS

Descriptive Results

Based on issues raised in our earlier qualitative work with Latino gay men, we asked participants about some perceived general and practical consequences that they may have experienced after disclosure of their positive serostatus to others. Table I shows the percent of participants who agreed or totally agreed that they had experienced a circumstance as a consequence of disclosure. Nearly three-quarters reported that disclosure had resulted in their feeling relieved and in being able to take care of their health openly. Negative consequences were less common, and only 15% said that they had been insulted or threatened after disclosure.

Proportions Disclosing to Members of the Social Network

As hypothesized, the proportion of participants who had disclosed that they were HIV-positive

Table I. Perceived General and Practical Consequences of Disclosure (*N* = 301)

As a result of telling others that I am HIV-positive	Percent in agreement
I can openly do things to preserve my health	73.8
I feel free of a burden, more relaxed, relieved	72.4
I became involved in HIV/AIDS-related activities	63.1
I feel less lonely than before	47.2
People now assume that I’m gay	45.5
I have been rejected by potential sex partners once they know I’m seropositive	39.5
Some people seem afraid of catching HIV from me	34.9
The possibility of staying legally in this country is now in danger	23.6
I have been insulted or threatened by others	15.6

differed depending on the target. Disclosure to the closest friend (84.7% of the 301 with closest friend) and the main male partner (77.5% of the 187 with a main male partner) was common, and significantly greater than disclosure to mothers (37.1% of the 248 with mothers) and fathers (23.2% of the 185 who had fathers), as revealed by binomial tests for equal proportions between individual pairs of targets (all p values were less than .05). Moreover, binomial tests revealed that the proportion of respondents who told their fathers was lower than the proportion who told their mothers, and the proportion who told their male main partners was lower than the proportion who told their closest friends. These differences remained when the data were examined with subsamples who had both targets for each comparison (e.g., mother and father, or male main partner and closest friend). There were only 20 men who reported having a female main partner, and of these, 65% had disclosed their serostatus to these women. Despite the apparent discrepancy between this rate of disclosure and the rate that was found for male main partners (78%), the difference did not achieve statistical significance due to the small number with female partners.

Disclosure to mothers and fathers was related [$\chi^2(1, N = 170) = 47.8, p < .0001$]: over three fourths of participants were consistent in their disclosure or nondisclosure to both parents. Disclosure to mothers was also associated with disclosure to closest friends [$\chi^2(1, N = 248) = 7.9, p < .01$], but not as strongly. There were no other significant associations of disclosure among pairs of targets (mothers, fathers, main partners, and closest friends).

In addition to asking about specific individual targets (e.g., mother, father), we also asked about groups of targets. More than one third of respondents reported that they had disclosed their serostatus to most or all of their friends, while 15% had told none. Although a similar proportion had disclosed to most or all of their family members, 29% reported that they had disclosed to no family members.

We asked separate questions about disclosure to Latino and non-Latino friends, and the two measures covaried greatly [$\chi^2(1, N = 272) = 115.2, p < .0001$]. In contrast to our hypothesis, disclosure was more common to Latino than to non-Latino friends. The proportion who told most or all of their Latino friends (37%) was greater than for non-Latino friends (27%).

Disclosure and Well-Being

The two indicators of psychological well-being that were used in this study assessed different but related constructs: depression (the negative indicator) was correlated $-.50$ with self-esteem. Moreover, quality of social support was correlated with both measures of psychological well-being: $-.39$ with depression and $.42$ with self-esteem. Despite the high levels of covariance, we expected that disclosure to different aspects of the social network might be differentially related to these constructs. Although we hypothesized that social support would mediate the effect of disclosure on psychological well-being, we also examined the direct effect of disclosure of serostatus on social support.

We performed separate multivariate analyses of covariances (MANCOVAs) to test direct effects of disclosure to specific targets (mother, father, male main partner, and closest friend) on the three outcomes (social support, depression, and self-esteem), controlling for education level (trade or high school or less versus some college and beyond) and income. There were too few participants with female main partners to perform the parallel analyses. The MANCOVAs revealed significant effects on the set of outcomes from disclosure to mother (Wilks' $\lambda = 0.96, F(3, 240) = 3.21, p < .05$), to male main partner (Wilks' $\lambda = 0.95, F(3, 180) = 3.09, p < .05$), and to closest friend (Wilks' $\lambda = 0.96, F(3, 293) = 4.12, p < .01$), but not from disclosure to father. Follow-up analyses of covariances (ANCOVAs) on the individual outcome measures are shown in Table II for the three targets that were significant at the multivariate level. Disclosure was related to quality of social support for all three targets. Despite the lack of significance in the MANCOVA, disclosure to fathers was related to quality of social support as well. Disclosure to the main partner was also related to the other two outcomes—depression and self-esteem, whereas disclosure to mother was related to depression. In all cases, the observed associations were in the predicted directions, with disclosure associated with less depression but greater quality of social support and self-esteem.

Similar analyses were performed examining the relationship between disclosure of serostatus to the two target groups: family members and friends. In this case, disclosure was a continuous variable reflecting the extent to which the participant had revealed his serostatus to members of the target groups. MANCOVAs revealed that disclosure to family

Table II. Analyses of Covariance for Direct Effects of Disclosure to Specific Targets on Social Support, Depression, and Self-Esteem

Target	Social support		Depression		Self-esteem	
	df	F	df	F	df	F
Mother (N = 246)						
Education	1	9.74**	1	6.43*	1	3.36
Income	1	0.62	1	0.09	1	0.46
Disclosure to mother	1	8.24**	1	4.01*	1	1.00
Error	242	(0.48)	242	(38.38)	242	(1.55)
Male main partner (N = 186)						
Education	1	5.91*	1	3.30	1	1.47
Income	1	0.02	1	0.34	1	0.01
Disclosure to partner	1	5.87*	1	6.35*	1	5.97*
Error	182	(0.47)	182	(36.83)	182	(1.48)
Closest friend (N = 299)						
Education	1	5.87*	1	5.51*	1	3.28
Income	1	1.40	1	0.40	1	0.56
Disclosure to friend	1	7.50**	1	0.02	1	0.71
Error	295	(0.49)	295	(41.63)	295	(1.55)

Note. Numbers in parentheses are Mean Square Error values.

* $p < .05$. ** $p < .01$. *** $p < .001$.

members [Wilks' $\lambda = 0.93$, $F(3, 293) = 7.40$, $p < .0001$] and to friends [Wilks' $\lambda = 0.95$, $F(3, 293) = 5.27$, $p < .01$] was significantly associated with the set of well-being outcomes. Table III shows results from the follow-up separate analyses for social support, depression, and self-esteem. Again, those who disclosed to more family members and to more friends reported greater quality of social support. In addition, disclosure to both groups of targets was associated with greater self-esteem. Disclosure of HIV-positive status to these target groups within the social network was not related to depression.

In addition to the direct effects of disclosure of serostatus on the indicators of well-being, we also ex-

amined the question of whether social support mediated the effects of disclosure of serostatus on depression and self-esteem. Four conditions are required to support a mediational model according to Baron and Kenny (1986): (1) disclosure must predict the indicator of psychological well-being (either depression or self-esteem); (2) disclosure must predict social support; (3) social support must predict the indicator of psychological well-being; and, finally (4) when social support is included as a predictor in the model used in step (1), the impact of disclosure on the indicator of psychological well-being must be reduced.

Requirement (1) was met for depression by the significant effects of disclosure to mother and

Table III. Analyses of Covariance for Direct Effects of Disclosure to Target Groups on Social Support, Depression, and Self-Esteem

Target group	Social support		Depression		Self-esteem	
	df	F	df	F	df	F
Family members (N = 299)						
Education	1	7.33**	1	5.44*	1	2.71
Income	1	1.56	1	0.44	1	0.80
Disclosure to family	1	19.16****	1	0.27	1	5.19*
Error	295	(0.47)	295	(41.59)	295	(1.53)
Friends (N = 299)						
Education	1	6.18*	1	5.22*	1	2.17
Income	1	1.15	1	0.41	1	0.67
Disclosure to friends	1	11.70***	1	0.35	1	6.87**
Error	295	(0.48)	295	(41.58)	295	(1.52)

Note. Numbers in parentheses are Mean Square Error values.

* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

Table IV. Analyses of Covariance Testing Mediation Effect of Quality of Social Support

Target or target group	Depression		Self-esteem	
	df	F	df	F
Mother (N = 246)				
Education	1	2.31		
Income	1	0.00		
Disclosure to mother	1	1.11		
Quality of social support	1	32.84****		
Error	241	(33.83)		
Male main partner (N = 186)				
Education	1	0.76	1	0.03
Income	1	0.34	1	0.00
Disclosure to partner	1	2.67	1	2.28
Quality of social support	1	37.57****	1	42.69****
Error	181	(30.67)	181	(1.20)
Family members (N = 299)				
Education			1	0.41
Income			1	0.20
Disclosure to family			1	0.38
Quality of social support			1	51.57****
Error			294	(1.30)
Friends (N = 299)				
Education			1	0.30
Income			1	0.19
Disclosure to Friends			1	1.91
Quality of social support			1	51.43****
Error			294	(1.30)

Notes. Analyses are reported only for those models that met the first three requirements for mediation. Blank areas reflect models that did not meet these requirements. Numbers in parentheses are Mean Square Error values.

* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

disclosure to male main partner (see Tables II and III). Requirement (2) was met in all cases (disclosure to mother, father, male main partner, closest friend, family network, and friends network; see Table II), and requirement (3) was met for both depression and self-esteem (see the first paragraph of this section for correlations). Although disclosure to all the targets met requirements (2) and (3), for the outcome variable of depression, only disclosure to two targets (mother and male main partner) met requirement (1). Therefore, the final requirement was tested on those two targets. The results shown in Table IV suggest that social support mediated the effect of disclosure to mother and male main partner on depression, because in both cases disclosure lost its significance in the model including social support.

In testing whether social support mediated the effect of disclosure on self-esteem, although requirements (2) and (3) were met as above, requirement (1) was achieved only for disclosure to male main partner (see Table II) and to family and friend social net-

works (see Table III). Therefore, requirement (4) was only tested in these cases. As can be seen in Table IV, the mediational hypothesis was supported, as disclosure was no longer significant when social support was included in these models. Thus, it seems that disclosure to the male main partner, family social network, and friend social network increases social support, which then acts to alleviate depression and augment self-esteem.

DISCUSSION

In this paper, we examined rates of disclosure of serostatus to various targets, as well as the relationship between disclosure of serostatus and psychological well-being. Furthermore, we investigated whether social support mediated these effects of disclosure on self-esteem and depression.

Disclosure to Targets Within the Social Network

Consistent with previous research (Kalichman *et al.*, 2003; Mansergh *et al.*, 1995; Marks *et al.*, 1992; Zea *et al.*, 2004), we found that the proportion of men who had disclosed their positive serostatus varied depending on the target. Disclosure to the closest friend was most common, and in this study even more common than to the main partner. Previous studies have reported other patterns, either no difference (Zea *et al.*, 2004) or higher disclosure rates to main partners than to closest friends (Mansergh *et al.*, 1995). As in the literature, we found less disclosure to family members than to friends and partners, and less disclosure to fathers than mothers. In general, there were higher rates of disclosure in our sample of Latino gay men than in the Marks *et al.* (1992) Latino male sample. The difference may well be due to changes in societal attitudes about HIV during the intervening decade between the two studies, and may indicate that HIV infection does not carry the stigma once associated with it. The relatively low occurrence of negative consequences after disclosure among our participants suggests that an HIV-positive diagnosis is less stigmatized than in the past.

The different proportions of disclosure of serostatus to different targets imply that people are selective when deciding to whom they will reveal the fact that they are HIV-positive. Moreover, with the four targets used here, there does not appear to be a generalized tendency to be a "discloser" or a

“nondiscloser.” Disclosure to various targets was unrelated, except for disclosure to mother and father and disclosure to mother and closest friend. It appears that individuals consider the potential target, and then decide whether disclosure to that person would be advisable.

Such decisions may reflect differential assessments concerning the targets’ probable reactions to the information. Because of the association between HIV and homosexuality, disclosure of positive serostatus may also raise the issue of sexual orientation. Friends—either gay or straight—may be more accepting of gay sexual orientation than parents, and therefore easier targets for disclosure of serostatus. In addition, friends have been reported to respond in a supportive manner more commonly than parents (Kalichman *et al.*, 2003; Petrak *et al.*, 2001; Sachperoglou and Bor, 2001), who may be disapproving, rejecting, or so distressed as to create an additional burden. Thus, the motivation to disclose as a means to obtain support would be greater with friends.

Considering the anticipated reactions to disclosure of HIV-positive status, we had hypothesized that there would be more disclosure to non-Latino than to Latino friends, due to the stigma associated with homosexuality in traditional Latino culture. Contrary to our hypothesis, however, participants reported disclosing to a higher proportion of Latino friends than non-Latino friends. It is possible that this finding is due to participants having predominantly Latino close friend networks and predominantly non-Latino peripheral friend networks, in which case greater disclosure of serostatus to Latino friends would be highly likely. Unfortunately, we cannot determine this from our data. It is also possible that the stigma of homosexuality in Latino culture is less prevalent than in the past. Cultures are not static, and attitudes change: the stigma may be diminished, both in Latino countries and among acculturated Latinos in the United States.

Disclosure and Well-Being

As hypothesized, disclosure was related to greater quality of social support with all individual targets (mother, father, closest friend, main partner), as well as with the two target groups of family members and friends. These findings that disclosure was associated with social support are consistent with previous studies (Kadushin, 2000; Simoni *et al.*, 2000). The causal direction is not clear, however, and it is possible that the relationship between social support and

disclosure is bidirectional. Those who disclose may elicit more support, and those with more supportive networks may disclose more.

As in the literature (Kalichman *et al.*, 2003; Petrak *et al.*, 2001), our results concerning the relationship between disclosure and depression were inconsistent. We found an effect on depression for disclosure to the individual targets of mothers and male main partners, but failed to find an effect with fathers, close friends, or the two target groups of family and friends. It is possible that mothers and main partners are the most important members of our participants’ social networks. Traditionally, mothers are greatly loved and esteemed in Latino culture, and main partners represent the persons with whom these men are emotionally and sexually intimate (in many cases, a life partner). It could be presumed that disclosure of serostatus allowed an openness and deepened the intimacy of these relationships, thereby alleviating negative feelings and depression. In addition, an inability to disclose over time to these important people may have psychological costs, such as depression. Prospective studies could test these interpretations.

Our findings also supported the view that the effect of disclosure to mothers and main partners on depression was mediated by social support. Thus, disclosure of HIV-positive serostatus to mothers and main partner may have resulted in greater social support from these targets, which in turn alleviated negative mood. Previous research has indicated that after disclosure of serostatus, partners tend to provide much social support; and, although mothers provide less than partners and friends, they are seen as more supportive than fathers (Kalichman *et al.*, 2003; Petrak *et al.*, 2001; Sachperoglou and Bor, 2001). This social support may help the person living with HIV to cope with challenges presented by the disease, and therefore maintain a more positive mood.

We also found that disclosure of serostatus to the male main partner was associated with greater self-esteem. Revealing positive serostatus to a main sexual partner may be a perceived obligation, which allows the partner to make an informed decision about the relationship and joint sexual behaviors (Serovich and Mosack, 2003). Fulfilling this obligation by disclosing may enhance self-esteem. It is also possible that the causal path of this observed association is in the opposite direction, that is, having more self-esteem may enable one to disclose positive serostatus to a partner, even at the risk of rejection.

The extent to which participants disclosed positive serostatus to the target groups of family and

friends was also associated with self-esteem. Again, a bidirectional relationship between self-esteem and disclosure seems likely. Self-esteem may be enhanced by the act of disclosure, but disclosure may be more feasible for individuals with high self-esteem. Moreover, it is possible that there are feedback loops: as individuals disclose their self-esteem increases, which then allows for disclosure to additional people.

Our findings supported the interpretation that social support mediated the effect of disclosure on self-esteem. It appears that disclosure to the main partner and to a larger proportion of the social networks of family and friends leads to greater quality of social support, which then leads to greater self-esteem. Emotional and instrumental social support may demonstrate to the recipient that he is valued by others, which in turn may promote self-esteem.

Perceived General and Practical Consequences of Disclosure

This study also included descriptive information about perceived general and practical consequences of disclosure of positive serostatus. In a set that was fairly evenly divided between negative and positive outcomes, the most commonly endorsed items (feeling more relaxed; being able to take care of health openly; and becoming involved in HIV/AIDS-related activities) were all positive developments. Our participants' reports of being better able to take care of their health after disclosure suggest that interventions helping individuals to disclose serostatus to appropriate targets could result in increased adherence to medical care and healthier behaviors. Although negative consequences were reported less commonly, they are not unimportant, and they may indeed cause distress (Hays *et al.*, 1993; Ingram *et al.*, 1999; Schrimshaw, 2002). Certainly, real-life consequences such as threatened immigration status would be antithetical to psychological well-being.

CONCLUSIONS

As we have noted throughout our discussion, the cross-sectional nature of this study limits our ability to interpret causal direction in the findings. Another limitation of this study is that we did not ask when disclosure occurred with each of these partners. Furthermore, there may be a different impact of disclosure in the period immediately following the disclosure

than that occurring later. It is possible that disclosure can create a significant but transitory change in well-being, which then dissipates over time. For example, revealing serostatus to one's mother may result in feelings of relief and improved mood state for a short time. These changes may not persist, and factors such as health status, adaptation to medication, and other life events may override the initial effect of disclosure.

In contrast, other effects of disclosure may be long-lasting. For example, after hearing that a loved one is seropositive, many friends and relatives will provide emotional and instrumental support in a sustained manner, which would then lead to an enduring high quality of social support. This lasting support may serve to lessen depression and increase self-esteem gradually over time, and this scenario is consistent with the mediational model that we have proposed. It is also possible, however, that depression and self-esteem may be transitory responses that occur soon after the disclosure, whereas quality of social support is more lasting. In this case, the stronger association between disclosure and social support may be due to the sustained nature of the support, while the weaker and less consistent associations with depression and self-esteem may result from their being more transient reactions. A longitudinal study with recently diagnosed participants would be the ideal paradigm to further explore the process of disclosure; its impact on social support, self-esteem, and depression over time; and the role of social support as a mediator between disclosure of positive serostatus and psychological well-being.

This study provided evidence that past disclosure of HIV-positive serostatus is associated with current positive well-being. Although there were differences depending on the target, disclosure was related to greater quality of social support, greater self-esteem, and lower levels of depression. Moreover, findings support the view that disclosure of serostatus leads to greater social support, which in turn, increases self-esteem and decreases depression. These findings suggest that Latino, HIV-positive, gay men typically choose wisely the people to whom they tell their serostatus; receive emotional and instrumental support in response to their disclosure; and have positive mental health outcomes as a result.

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