Adult Attachment, Perceived Discrimination Based on Sexual Orientation, and Depression in Gay Males: Examining the Mediation and Moderation Effects

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This study examined perceived discrimination as both a mediator and moderator between adult attachment (anxiety and avoidance) and levels of depression in a gay male sample. Survey data were collected from 234 self-identified gay males through the Internet and in person through community resources across several states. Results from structural equation modeling analyses indicated that perceived discrimination partially mediated the relationship between attachment anxiety (but not attachment avoidance) and depression. Moderation of attachment (anxiety and avoidance) by perceived discrimination on levels of depression was not supported. Additionally, about 23% of the variance in perceived discrimination was explained by attachment, and 47% of the variance in depression was accounted for by attachment and perceived discrimination. Clinical implications, limitations, and areas for future research are also discussed.

Keywords: adult attachment, perceived discrimination, gay males, mediation, and moderation

Bowlby's (1973, 1979, 1980, 1982, 1988) attachment theory proposed that attachment to caregivers is an important foundation for people to develop a sense of emotional security. In 1987, Hazan and Shaver first applied Bowlby's attachment theory to adult romantic attachment, which has stimulated several attachment studies on adult attachment. Since then, attachment theory has been applied to different areas, such as the healthy and effective self (Lopez & Brennan, 2000), psychotherapy processes (e.g., Mallinckrodt, 2000), and responses to stress and coping (e.g., Mikulincer, 1998a). However, the majority of empirical research on adult attachment has focused on individuals with heterosexual relationships. Applying attachment theory to individuals with same-sex relationships has been a relatively ignored area. Thus far, there has been only a handful of empirical studies applying attachment theory to lesbian, gay, and bisexual (LGB) populations (see Mohr, 1999, for a review). From his review of this literature, Mohr (1999) suggested that adult attachment might play an important role in LGB individuals' reactions to perceived rejections from others, including discrimination based on sexual orientation. Thus, the purpose of the present study was to expand on previous literature to explore the connections among adult attachment, perceived discrimination, and levels of depression in a gay male sample.

In the past three decades, attachment theory (Bowlby, 1973, 1982) has become one of the most important conceptual frameworks for understanding how individuals with different attachment dimensions (i.e., anxiety or avoidance) differ with respect to affect regulation processes and their responses to stress (e.g., Fuendeling, 1998; Kobak & Sceery, 1988; Lopez & Brennan, 2000; Mikulincer, Shaver, & Pereg, 2003). In general, there is a consensus that two continuous attachment dimensions (i.e., anxiety and avoidance) are the best way to assess adult attachment (e.g., Brennan, Clark, & Shaver, 1998; Fraley & Shaver, 2000; Fraley & Waller, 1998). *Attachment anxiety* is characterized by an excessive need for approval from others and a fear of interpersonal rejection or abandonment (Brennan, Clark, & Shaver, 1998). *Attachment avoidance* is defined by a fear of interpersonal closeness or dependence and suppression of one's attachment needs (Brennan et al., 1998). High scores on one or both dimensions suggest insecure adult attachment orientation. In contrast, low scores on both dimensions suggest secure attachment (Brennan et al., 1998; Lopez & Brennan, 2000; Mallinckrodt, 2000).

Theoretically, the attachment anxiety dimension is likely to develop when primary caregivers are inconsistent in responding to their child's emotional needs. Individuals with attachment anxiety tend to use hyperactivation affect regulation strategies and to have a negative working model of the self, whereby they exaggerate their emotional reactions to elicit support from important others. Empirically, those higher in attachment anxiety have been found to show greater emotional reactivity (Wei, Vogel, Ku, & Zakalik, 2005) and greater access to negative emotions, early childhood events, and attachment-related events (Hesse, 1999; Mikulincer, 1998b; Mikulincer & Orbach, 1995; Woodhouse, 2003). In addition, Mohr (1999) proposed that victims of antigay violence, who are high in attachment anxiety, would be likely to pay greater attention to their stress and internalize the discrimination. On the basis of the above attachment and LGB literature regarding attachment anxiety, we expected that gay males with higher levels of

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attachment anxiety would be likely to pay greater attention to others' rejection or discrimination based on their sexual orientation.

Conversely, the attachment avoidance dimension is likely to develop when primary caregivers are unresponsive to or ignore the child's emotional needs. Those with attachment avoidance tend to use deactivation affect regulation strategies (e.g., they actively repress conscious awareness of negative feelings) as a coping mechanism to protect themselves from possible psychological pain associated with neglect or rejection from others. Empirically, higher levels of attachment avoidance have been associated with poor memory for negative early childhood events (Hesse, 1999) and higher levels of emotional cutoff (Wei, Vogel, et al., 2005). Recently, Mohr and Fassinger (2003) found that LGB adults with attachment avoidance were unlikely to self-disclose about their sexual orientation to the public. Such tendency may serve as a protective strategy for those with attachment avoidance to withdraw from interpersonal relationships, which reduces the risk of rejection based on their sexual orientation. In addition, these individuals may have either a positive or negative working model of self. Therefore, they may act in a variety of ways in their perceptions of discrimination. They may pay less attention to discrimination experiences, consciously distance themselves from relationships to avoid discrimination, or fail to deny or suppress the discrimination signals. Because of this complexity, no specific expectation could be presumed for the association between attachment avoidance and perceived discrimination. However, Fraley, Garner, and Shaver (2000) reported that relative to attachment anxiety, those with attachment avoidance pay less attention to attachment-related stimuli. Therefore, we expected that the magnitude of the association between attachment anxiety and perceived discrimination would be significantly stronger than that between attachment avoidance and perceived discrimination.

It has been well documented that being a gay male is not only stressful but also associated with higher levels of psychological distress (e.g., Diaz, Ayala, Bein, Henne, & Marin, 2001; Mays & Cochran, 2001; Meyer, 2003; Waldo, 1999). Although just being part of an out-group can be stressful, the added weight of being discriminated against on the basis of sexual orientation can have a wide range of psychological consequences, including fear for one's personal safety (D'Augelli, 1992; Herek, 1993), dissatisfaction in the workplace (Ragins & Cornwell, 2001), psychiatric disorders (Mays & Cochran, 2001), and suicide (Hershberger & D'Augelli, 1995). Moreover, Meyer (1995) found a significant association between perceived prejudice based on sexual orientation and several indices of psychological distress, including anxiety, sadness, hopelessness, and helplessness. Herek, Gillis, and Cogan (1999) also found that those who believed that a crime was based on their gay sexual orientation had significantly higher levels of depressive symptoms than those who believed that a crime was not a result of a personal attack. As we can see, these studies suggest the link between perceived discrimination based on sexual orientation and psychological distress or depression. Additionally, it is well documented in the empirical research that those with attachment anxiety and avoidance experience disproportionate amounts of depression (Carnelley, Pietromonaco, & Jaffe, 1994; Murphy & Bates, 1997; Roberts, Gotlib, & Kassel, 1996; Wei, Mallinckrodt, Russell, & Abraham, 2004). In sum, perceived discrimination based on sexual orientation is associated not only with depression but also with attachment anxiety and avoidance.

From the above literature review, one can see the associations among attachment, perceived discrimination, and depression. However, researchers have paid less attention to examining whether perceived discrimination based on a gay sexual orientation is an intervening variable between adult attachment and levels of depression. From this viewpoint, perceived discrimination may be acting as either an intermediate link in a causal chain (i.e., mediator) or as a variable that alters the strength of the association between attachment and depression (i.e., moderator). Determining the nature of this relationship is important because each has unique implications for clinical practice and research. For instance, if perceived discrimination is a mediating variable, then one's attachment dimension would directly contribute to levels of perceived discrimination, which in turn increase levels of depression. Thus, clinicians could help their clients to understand and alter behaviors and patterns of thinking that result from their attachment dimension. However, if perceived discrimination is a moderating variable, then clinicians can focus on dealing with the discrimination experience in a way that lowers its impact on levels of depression. Thus, the present study explored both of these possible relationships.

In terms of mediators, a relevant study by Wei, Mallinckrodt, Larson, and Zakalik (2005) found that increased levels of depression in college students with attachment anxiety was partially mediated through their excessive need for other-validation and lack of capacity for self-validation. Moreover, they found that college students with attachment avoidance tend not to rely on others for validation but are still vulnerable to depression because of their lack of capacity for self-validation. Even though that study examined college students instead of a gay male sample, it implies that individuals with attachment anxiety or avoidance are vulnerable to depression because of their excessive need for validation from others and/or their lack of capacity for self-reinforcement or validation. Similarly, gay males with attachment anxiety or avoidance may need validation from self and/or others regarding their sexual orientation. Gay males with attachment anxiety are likely to be hyperalert to others' rejection based on their sexual orientation. However, they may lack the capacity for self-validation about their sexual orientation, which in turn increases their depressed feelings. As we described above, those with attachment avoidance are likely to distance themselves or deactivate from their conscious awareness of discrimination signals. However, they may be either successful or fail to deny or suppress the negative discrimination signals. It depends on their positive or negative view of self to allow them to have the capacity to self-validate their sexual orientation. Therefore, we expected that perceived discrimination would be a significant mediator between attachment anxiety and depression. However, because of the complexity of attachment avoidance, no specific expectations can be asserted at this point regarding whether perceived discrimination would be a significant mediator between attachment avoidance and depression.

With regard to moderators, Wei, Mallinckrodt, et al. (2004) found that maladaptive perfectionism interacted with attachment anxiety (but not attachment avoidance) to predict depression, and Scott and Cordova (2002) found that attachment anxiety (but not attachment avoidance) interacted with marital adjustment to predict depressive symptoms in heterosexual couples. Another study by Hammen et al. (1995) followed women over a 1-year period and investigated how interpersonal stress interacted with the constructs underlying attachment to predict depression. Their results

indicated that the fear of abandonment (attachment anxiety) and the ability to trust and depend on others (attachment avoidance) each interacted with measures of interpersonal stress to predict depression. In the perceived discrimination literature, Corning (2002) found that personal or collective self-esteem interacted with perceived gender-related discrimination to predict depression among female college students. Specifically, for those with lower levels of personal or collective self-esteem, depression increased with perceived greater gender-related discrimination. In conclusion, these previous studies suggest that either attachment insecurity or perceived discrimination might act as a moderator to increase depression. More specifically, it makes sense that when gay males perceive discrimination from others based on their sexual orientation, it may activate their attachment insecurity and worsen their depression symptoms. Thus, we expected that perceived discrimination would act as a significant moderator between attachment and levels of depression.

In sum, it appears that there are connections among attachment, perceived discrimination, and levels of psychological distress or depression. However, no published study could be located that directly explored these links in terms of mediating or moderating effects in gay men. Based on the above review, the first set of hypotheses was that perceived discrimination would *mediate* the relationship between attachment anxiety and depression, whereas no definite hypothesis would be made regarding whether perceived discrimination would be a significant mediator for attachment avoidance (see Panel A in Figure 1). Specifically, we expected the association between attachment anxiety and perceived discrimination to be significantly positive. Conversely, as we discussed above, we did not advance a hypothesis for the association be-

tween attachment avoidance and perceived discrimination. However, from the literature review, we expected that the magnitude of the association between attachment anxiety and perceived discrimination would be stronger than that between attachment avoidance and perceived discrimination. The second set of hypotheses was that perceived discrimination would *moderate* the relationships between attachment anxiety or avoidance and depression (see Panel B in Figure 1). Finally, it is important to note that the present study examined only the perception of discrimination instead of actual discrimination experiences.

Method

Participants

Participants were 234 self-identified gay male participants over the age of 18 who were recruited from a variety of sources related to the gay community. To obtain a broad range of participants, the first author obtained data through the Internet ($n = 147$; 63%) and in paper-and-pencil form ($n = 87$; 37%) through a number of organizations and events in Iowa, Pennsylvania, and Maryland. Participants' reported residencies according to U.S. Census regional divisions were as follows: Northeast (32%), South Atlantic (30%), Midwest (20%), West (12%), and South Central United States (4%). Two percent of the participants did not indicate their state of residence. The vast majority of participants were White or Caucasian (77.4%), followed by Black or African American (3.8%), multiracial American (3%), Hispanic American or Latino (2.6%), Asian or Asian American (1.7%), and Native American (0.9%). About 11% of the participants did not report their race/ethnicity. In terms of religious affiliation, the vast majority of participants indicated a Christian affiliation (45%). The next largest group consisted of those that either declined to answer the question or indicated "none" (28%), followed by agnostic (9%), other (9%), Jewish (3%), atheist (3%), and pagan (3%). The age of participants ranged from 18 to 80 years old, with a mean age of 37 ($SD = 13.52$) and a median of 36. Participants' reported income ranged between $3,000 and $160,000, with a mean of $46,354 ($SD = $31,197$) and a median of $40,000. Finally, participants were asked to indicate whether they were "out" to friends, family, and/or coworkers. The vast majority of participants indicated that they were out to their friends (92%). Participants indicated lower rates of being out to members of their family (76%) and their coworkers (69%).

Instruments

Attachment. The Experiences in Close Relationship Scale (Brennan et al., 1998) is a 36-item self-report measure of adult attachment. The instructions ask the participants to rate "how you generally experience relationships, not just in what is happening in a current relationship." It was developed from over 1,000 undergraduate student responses to 323 items representing more than 60 adult attachment subscales, which were drawn from all the self-report adult attachment measures available at the time. The measure uses a 7-point Likert-type scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*) that assesses scores on two relatively orthogonal dimensions underlying attachment: anxiety and avoidance. The Anxiety subscale (18 items) measures preoccupation with abandonment and fear of rejection. The Avoidance subscale (18 items) measures fear of intimacy, discomfort with closeness, and self-reliance. The score range is from 18 to 126 for each subscale. Higher scores on the Anxiety and Avoidance subscales indicate higher attachment anxiety and avoidance, respectively. Brennan et al. (1998) reported coefficient alphas of .91 and .94, respectively, for the Anxiety and Avoidance subscales. Brennan, Shaver, and Clark (2000) reported test–retest reliability (3-week period) of .70 for both subscales. Evidence of validity was provided by significant correlations in the expected directions with measures of touch aversion and postcoital emotions (Brennan et al., 1998). Coefficient alphas for anxiety and avoid-
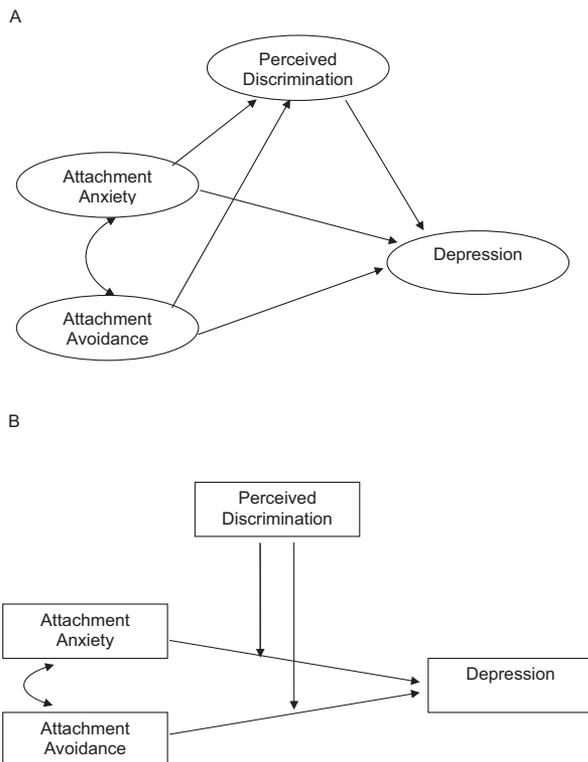

Figure 1.   The hypothesized mediation model (A) and moderation model (B).

ance in the present study were .94 and .90, respectively. To create three observed indicators for each latent variable of attachment anxiety and attachment avoidance, we followed the recommendation of Russell, Kahn, Spoth, and Altmaier (1998) to create three parcels for each attachment subscale. The exploratory factor analyses were conducted for each attachment subscale (i.e., Anxiety and Avoidance). The items were then rank ordered according to the magnitude of the factor loadings and successively assigned to pairs comprising the highest and lowest ranking items to equalize the average loading of each parcel on its respective factor.

Perceived discrimination. Four scales were used for the measures of perceived discrimination. The first two measures were Verbal Harassment and Intimidation (VHI) and Restricted Rights and Opportunity (RRO), which are two subscales from the Gay and Lesbian Oppressive Situations Inventory—Frequency (GALOSI–F; Highlen, Bean, & Sampson, 2000). The GALOSI–F is a 49-item scale measuring the frequency of perceived heterosexist and antigay discrimination by gay and lesbian individuals across a variety of settings. Each item uses a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*almost always*). The measure is composed of seven GALOSI–F scales; however, only two subscales were used in this study, the VHI (seven items) and the RRO (three items). The VHI is a measure of how often participants perceived verbal assaults or felt intimidated by others on the basis of their sexual orientation (e.g., "I have heard people telling gay-bashing jokes."). Scores can range from 7 to 35, with higher scores indicating more perceived discrimination. The RRO is a measure of how often participants felt they had been rejected or denied opportunities because of their sexual orientation (e.g., "I have been denied housing because of my gayness."). Scores can range from 3 to 15, with higher scores indicating more perceived discrimination. Highlen et al. (2000) reported alphas of .69 for RRO and .77 for VHI. The coefficient alphas for these two measures in the present study were .79 and .82, respectively. Discriminant validity was obtained for each GALOSI–F scale by comparison with the Impression Management Scale, a measure of social desirability (Paulhus, 1991), which showed low, nonsignificant, and negative correlations.

The third measure of perceived discrimination was the Perceived Prejudice Scale (PPS; Brown, 1997). The PPS is an 18-item self-report measure of perceived prejudice from various individuals. Participants are asked to rate how much prejudice or anti-LGB sentiment they receive from 18 different interpersonal areas (e.g., heterosexual friends, local community, or neighbors). Each item is responded to on a 5-point Likert-type scale ranging from 0 (*no prejudice*) to 5 (*very high degree of prejudice*) or NA (*not applicable, no contact with this group*). A factor analysis identified five factors for PPS. The five factors include Prejudice From Children (two items), Prejudice in Own Family (three items), Prejudice With Partner's Family (three items), Prejudice With Les-Bi-Gay Group (two items), and Prejudice in Public (eight items, e.g., coworkers). Scores range from 0 to 90, with higher scores indicating more perceived prejudice. A total score was used in the present study. Although Brown (1997) did not report a coefficient alpha for this measure, the coefficient alpha in the present study was .79. However, Brown supported validity by a negative correlation (−.37) to measures of outness.

The fourth measure of perceived discrimination was the Perceived Discrimination (PD) subscale from the Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994). The ASSIS is a 36-item measure assessing acculturative stress of international students. It consists of six factors: perceived discrimination, homesickness, perceived hate, fear, stress due to change and/or culture shock, guilt, and nonspecific factors. The PD subscale (eight items) was selected to measure the degree to which participants detected negative reactions from others (e.g., "I feel that I receive unequal treatment."). Each item is rated on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Because the scale was originally designed for international students, some items were changed to be applicable to the gay community. In this process, two items, "I am treated differently because of my race" and "I am treated differently because of my color," became the same in

meaning; that is, "I am treated differently because of my sexual orientation." One of the duplicate items was deleted. Therefore, a total score (seven items) can range from 7 to 35, with higher scores representing greater amounts of perceived discrimination. The internal consistency of the PD subscale in a previous study was .84 (Wei, Heppner, Mallen, & Ku, 2004). The present study reports a coefficient alpha of .89. Validity for the PD subscale has been supported by positive associations with depression (Wei, Heppner, et al., 2004) as well as the positive association with perceived general stress and negative association with self-esteem (Wei, Ku, Russell, & Mallinckrodt, 2006). In the present study, the above four perceived discrimination measures (i.e., VHI, RRO, PPS, and PD) served as the four observed indicators for the latent variable of perceived discrimination.

Depression. Two depression scales were used to measure depression. The first depression scale was the short version of the Center for Epidemiological Studies—Depression Scale (CES–D; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993). The short version of the CES–D is an 11-item self-report scale that assesses current levels of depressive symptoms (e.g., "I felt lonely"). Each item uses a 3-point Likert-type scale ranging from 0 (*hardly ever or never*) to 2 (*much or most of the time*), measuring the frequency with which participants have experienced that item in the past week. Total scores can range from 0 to 22, with higher scores indicating higher levels of depressive symptoms. The measure has a high internal consistency, with coefficient alphas between .71 and .87 (Kohout et al., 1993). The coefficient alpha was .88 in the present study. Furthermore, Wei, Russell, and Zakalik (2005) provided validity evidence by a positive association with loneliness among 1st-year college students. Liao and Wei (2006) also provided support for the validity of the CES–D short version, with a college student sample, by negative associations with perceived control as well as a positive association with rumination and anxiety.

The second depression scale is the Depression subscale from the Depression, Anxiety, and Stress Scales—Short Form (DASS–Short Form; Lovibond & Lovibond, 1995). The DASS–Short Form is a 21-item measure composed of primary symptoms of depression, anxiety, and stress. Only the Depression subscale (DASS–D–Short Form, seven items) would be used to measure the severity of depressive symptoms for that week. The scale, composed of a 4-point Likert-type scale, ranges from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Scores can range from 0 to 21, with higher scores indicating more depression. Lovibond and Lovibond (1995) reported a coefficient alpha of .96 for the Depression subscale. A high internal consistency with a coefficient alpha of .94 for the DASS–D–Short Form was found in the present study. Antony, Bieling, Cox, Enns, and Swinson (1998) provided support for the validity of the DASS–D–Short Form through a positive correlation with scores on the Beck Depression Inventory. Additionally, Wei, Shaffer, Young, and Zakalik (2005) provided validity evidence for the short version of the DASS–D by positive associations with depression scores on the Self-Rating Depression Scale and the CES–D as well as with loneliness scores on the UCLA Loneliness scale. Validity was further supported through negative associations with scores of basic psychological needs (i.e., autonomy, competence, and relatedness) satisfaction in college student populations. The above two short versions of CES–D and DASS–D were used as the two observed indicators for the latent variable of depression in the present study.

Procedure

Participants were contacted through one of two methods: (a) the Internet or (b) in person, either through direct contact with the participants or through a point of contact at a specific agency or group. Participants from the Internet group were contacted in one of two ways. The first method involved an intensive search of Yahoo groups to locate those groups exclusive to gay males over the age of 18. Yahoo groups were targeted because the number of members and membership selection criteria (e.g., gay males only and 18 years old or over) are openly listed on group Web sites. Group moderators of those groups meeting the sampling criteria were

then contacted by the first author to seek temporary admission to the group. Once permission was obtained, an e-mail was sent to each of the members on the list and posted on the list's message board. The e-mail explained the nature of the study, provided the researcher's contact information, and included a link to the survey Web site. Through this process, a total of 1,527 potential participants were contacted from a total of 10 Yahoo groups. Membership in each group ranged between 53 and 433 members. The second group of Internet participants was obtained through listservs with an unknown membership makeup. That is, it was unknown how many members were on the listservs or how many of those members identified as gay men (as opposed to women, heterosexual men, etc.). These potential participants received the same e-mail as those in the prior group but were additionally encouraged to forward the e-mail to other relevant listservs. All participants who completed the survey online were combined into one group (i.e., Internet group) for data analyses.

Once participants from either group clicked on the link to enter the survey, they were directed to the informed consent page explaining the nature of the survey, including all risks and benefits. Only after consenting to the study and affirming that the participant was over the age of 18 was the participant forwarded to the actual survey. The participants were not asked to provide any identifying information as part of the consent form. Participants were informed that their "consent to participate was indicated by the completion of the survey." The survey Web site was also set up to allow only one survey response from each IP address to reduce the chances of multiple entries from the same individual. The survey also included two validity check items to help filter data responses that may have been submitted randomly or inattentively. Only 2 participants who completed the survey answered these questions incorrectly. Upon completing the online survey, participants were given the opportunity to submit their contact information to be entered into a random drawing for a monetary prize of $50. Prize entry information was collected separate from survey responses and stored in a separate data file from the survey answers. This prohibited the ability to link survey responses to participants' contact information. A total of 147 usable surveys were obtained through these methods (i.e., Internet). Because it was not possible to track exactly how many people received the initial e-mail invitation, it was not possible to calculate the response rate for this group.

The paper-and-pencil participants were obtained from a variety of LGB community resources (i.e., gay pride event, support groups, and a gay-affirmative church) throughout Pennsylvania, Maryland, and Iowa. Participants in this group were contacted either in person by the first author or by a designated representative in the organization. Participants were either provided time to fill out the questionnaire during the designated event or were given packets to take home and mail back to the first author. A total of 121 surveys were distributed to potential participants, and a total of 87 were returned, resulting in a response rate of 72% of those who initially expressed interest in participating.

The survey procedure for the paper-and-pencil version mirrors that of the Internet version. Participants were given a survey packet containing an informed consent, the research questionnaire, a debriefing form, and an incentive entry form. To ensure the confidentiality of those entering the drawing, we asked participants to e-mail or mail their contact information to the first author directly, separate from their responses.

Results

Descriptive Statistics

A multivariate analysis of variance was computed to determine whether there were any significant differences in the eight main measured variables (i.e., attachment anxiety, attachment avoidance, four discrimination variables, and two depression variables) between those who completed the Internet version and those who completed the paper-and-pencil version. No significant results were found from the MANOVA, $F(8, 225) = 1.27$, $p = .26$,

indicating that there were no significant differences due to different methods of data collection on any of the major variables. Therefore, the data for both groups (i.e., Internet and paper-and-pencil) were combined for the following analyses.

Means, standard deviations, and zero-order correlations for two attachment dimensions (i.e., anxiety and avoidance) and the 12 measured variables (i.e., 3 anxiety parcels, 3 avoidance parcels, 4 discrimination variables, and 2 depression variables) are shown in Table 1. In general, most variables showed significant correlations with the other measured variables. The notable exceptions are the correlations between the three measured indicators of attachment avoidance and the four measures of perceived discrimination. All of these correlations (rs = −.06 to .03) showed low and nonsignificant relationships. Such correlations suggest no association between attachment avoidance and perceived discrimination.

A test of multivariate normality was conducted to see if the data met the assumptions underlying the maximum-likelihood procedure. The data were not normal, $\chi^2(2, N = 234) = 227.12$, $p < .001$. Therefore, the scaled chi-square statistics procedure developed by Satorra and Bentler (1988) for adjusting the impact of non-normality was used in subsequent analyses.

Measurement Model

Using Anderson and Gerbing's (1988) recommended two-step method for analysis of structural equation models, we first tested the measurement model with a confirmatory factor analysis to determine if the model was an acceptable fit to the data. After an acceptable measurement model was developed, the structural model was then tested. The measurement model was estimated using the maximum-likelihood method in LISREL 8.54. Hu and Bentler (1999) suggested that three indices be used to assess goodness of fit for such models: the comparative fit index (CFI; values of .95 or greater indicate that the model adequately fits the data), the root-mean-square error of approximation (RMSEA; values of .06 or less indicate that the model adequately fits the data), and the standardized root-mean-square residual (SRMR; values of .08 or less indicate that the model adequately fits the data). Last, the chi-square difference test was used to compare nested models.[1] The initial test of the measurement model resulted in a good fit to the data, $\chi^2(48, N = 234) = 76.15$, $p < .01$, scaled $\chi^2 = 66.35$, $p < .05$, CFI = .99; RMSEA = .04 (90% confidence interval [CI]: .01, .06); SRMR = .04. All of the loadings of the 12 measured variables on the latent variables were statistically significant ($p < .001$; see Table 2). Thus, all of the latent variables appear to have been reasonably measured by their respective indicators. Furthermore, nearly all of the correlations among the independent latent variables, the mediator latent variable, and the dependent latent variable were statistically significant ($p < .001$; see Table 3). The one exception is the relationship between attachment avoidance and perceived discrimination ($r = -.02$, $p > .05$), which had a

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[1] Originally, the corrected chi-square difference test was planned to test the nested models. However, the corrected chi-square difference test comparing the initial model and the first alternative structural model (i.e., the path from attachment anxiety to depression constrained to zero) produced a negative number. Therefore, chi-square difference tests were used in comparing the initial and alternative structural models.

Table 1
Means, Standard Deviations, and Correlations Among Two Attachment Dimensions and 12 Observed Variables

	M	SD	B	1	2	3	4	5	6	7	8	9	10	11	12
A. Anxiety	72.62	23.21	.25***	.95***	.96***	.95***	.24***	.22**	.22**	.38***	.24***	.14*	.41***	.58***	.52***
B. Avoidance	47.47	17.15	—	.29***	.17**	.24***	.91***	.94***	.93***	-.02	-.03	-.01	.00	.30***	.27***
1. Anxiety 1	25.80	8.08		—	.85***	.85***	.29***	.27***	.25***	.36***	.21***	.15*	.39***	.55***	.51***
2. Anxiety 2	24.09	8.00			—	.88***	.19**	.13*	.14*	.37***	.20**	.15*	.41***	.53***	.47***
3. Anxiety 3	22.74	8.31				—	.21***	.22***	.22***	.35***	.27***	.12	.38***	.56***	.50***
4. Avoid 1	16.31	6.35					—	.78***	.75***	-.01	-.04	.03	.02	.30***	.27***
5. Avoid 2	16.40	6.14						—	.83**	-.02	.01	.01	-.01	.27**	.23**
6. Avoid 3	14.75	6.02							—	-.03	-.05	-.06	-.02	.26***	.25***
7. VHI	21.22	5.27								—	.52***	.50***	.63***	.36***	.38***
8. RRO	4.70	2.31									—	.39***	.51***	.20**	.20**
9. PPS	29.77	10.93										—	.42***	.18**	.14*
10. PD	19.83	6.15											—	.32***	.33***
11. CES–D	17.07	4.68												—	.80***
12. DASS–D	11.01	4.74													—

Note. N = 234. Anxiety = Anxiety subscale of the Experiences in Close Relationships Scale; Avoidance = Avoidance subscale of the Experiences in Close Relationships Scale; Anxiety 1, 2, 3 = item parcels from the Anxiety subscale of the Experiences in Close Relationships Scale; Avoid 1, 2, 3 = item parcels from the Avoidance subscale of the Experiences in Close Relationships Scale; VHI and RRO = the Verbal Harassment and Intimidation and Restricted Rights and Opportunities subscales, respectively, from the Gay and Lesbian Oppressive Situation Inventory; PPS = Perceived Prejudice Scale; PD = the Perceived Discrimination subscale from the Acculturative Stress Scale for International Students scale; CES–D = Center for Epidemiological Studies—Depression Scale (short version); DASS–D = the Depression subscale from the Depression Anxiety and Stress Scales—Short Form.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Factor Loadings for the Measurement Model

Measure and variable	Unstandardized factor loading	SE	Z	Standardized factor loading
Attachment anxiety				
Anxiety parcel 1	7.37	0.35	21.03	.91***
Anxiety parcel 2	7.48	0.34	21.76	.94***
Anxiety parcel 3	7.75	0.34	22.61	.93***
Attachment avoidance				
Avoidance parcel 1	5.37	0.30	18.01	.85***
Avoidance parcel 2	5.66	0.27	21.20	.92***
Avoidance parcel 3	5.39	0.30	17.80	.89***
Perceived discrimination				
VHI	4.41	0.30	14.60	.84***
RRO	1.45	0.20	7.31	.63***
PPS	6.19	0.75	8.21	.57***
PD	4.75	0.35	13.75	.77***
Depression				
CES–D	4.36	0.24	18.17	.93***
DASS–D	4.06	0.34	11.92	.86***

Note. N = 234. Anxiety parcel 1, 2, 3 = item parcels from the Anxiety subscale of the Experiences in Close Relationships Scale; Avoidance parcel 1, 2, 3 = item parcels from the Avoidance subscale of the Experiences in Close Relationships Scale; VHI and RRO = the Verbal Harassment and Intimidation and Restricted Rights and Opportunities subscales, respectively, from the Gay and Lesbian Oppressive Situation Inventory; PPS = Perceived Prejudice Scale; PD = the Perceived Discrimination subscale from the Acculturative Stress Scale for International Students scale; CES–D = Center for Epidemiological Studies—Depression Scale (short version); DASS–D = the Depression subscale from the Depression Anxiety and Stress Scales—Short Form.
*** $p < .001$.

negative nonsignificant relationship.[2] It is also important to note that in a test of correlated correlations (Kenny, 1987), we found that the correlation between attachment anxiety and perceived discrimination ($r = .46$, $p < .001$) was significantly stronger than that of attachment avoidance and perceived discrimination ($r = -.02$, $p > .05$), $t(231) = 5.56$, $p < .001$.

Structural Model for Testing Mediation Effects

The structural model (see Figure 1) was tested using the maximum-likelihood method in LISREL 8.54. The results showed a very good fit of the model (Model A; see Table 4 and Figure 2) to the data. All paths among the independent variables (i.e., attachment anxiety and attachment avoidance), the mediating variable, and the dependent variable were significant, suggesting that perceived discrimination partially mediates the relationships between attachment (i.e., anxiety and avoidance) and depression. However, before this relationship could be stated, we created three alternative models to determine if the above structural model was the best fit to the data. The first alternative model (Model B)

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[2] It is important to note that this is a zero-order correlation, which does not control for the effect of attachment anxiety. When we conducted an analysis with only the attachment anxiety and attachment avoidance latent variables as predictors and the perceived discrimination latent variable as a criterion variable, the direct effects from attachment (i.e., anxiety or avoidance) to perceived discrimination were significant ($\beta = .50$, $p < .001$, and $\beta = -.14$, $p < .05$, respectively).

Table 3
Correlations Among Latent Variables for the Measurement Model

Latent variable	1	2	3	4
1. Attachment anxiety	—	.25***	.46***	.63***
2. Attachment avoidance		—	−.02	.32***
3. Perceived discrimination			—	.44***
4. Depression				—

Note. $N = 234$.
*** $p < .001$.

constrained the direct path from attachment anxiety to depression to zero, representing the full mediation of attachment anxiety to depression and partial mediation of attachment avoidance to depression through perceived discrimination. Results indicated a good fit to the data. However, a chi-square difference test indicated a significant difference between Model A and Model B, $\Delta\chi^2(1, N = 234) = 42.76$. This implies that the path from attachment anxiety to depression contributes significantly to the model. Thus, the initial model with this path (i.e., Model A) was a better fit. The second alternative model (Model C) constrained the direct path from attachment avoidance to depression to zero. That is, perceived discrimination fully mediated the relationship between attachment avoidance and depression but only partially mediated the relationship between attachment anxiety and depression. The data also showed a good fit to the model, but a chi-square difference test indicated a significant difference between the initial model (i.e., Model A) and Model C, $\Delta\chi^2(1, N = 234) = 12.66$. Again, similar to the comparison of Models A and B, the result indicated that Model A with the direct path from attachment avoidance to depression is a better model in this comparison. The third alternative model (Model D) constrained the paths of both attachment anxiety and attachment avoidance to depression to zero (i.e., fully mediated model for attachment anxiety and avoidance). Once again, although the model showed a good fit to the data, the significant chi-square differences between Models A and D, $\Delta\chi^2(2, N = 234) = 72.04$, indicated that Model A with these two direct paths was a better fit to the data. That is, the data suggest that the partially mediated model of attachment anxiety and attachment avoidance through perceived discrimination to depression is the best fit to the data. As such, this model (i.e., Model A) was used to test for the significance of indirect effects. About 23% of the variance in perceived discrimination was explained by attachment anxiety and attachment avoidance,[3] and 47% of the variance in depression was accounted for by attachment and perceived discrimination.

Bootstrap Procedure for the Significant Level of Indirect Effects

Recently, MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) reported that the frequently used Baron and Kenny (1986) approach (e.g., adapting the Sobel formula to compute the Z statistic for testing the significance of the indirect effect) had the lowest statistical power relative to other methods. Mackinnon et al. (2002) reported that in the sampling distribution of the product of two path coefficients (i.e., [the path coefficient for independent variable $\rightarrow$ mediator] $\times$ [the path coefficient for mediator $\rightarrow$ dependent variable]) used in the Baron and Kenny approach, the Z

statistic tends to be asymmetric and highly skewed. Thus, the corresponding Sobel test lacks statistical power relative to other methods that attempt to correct for this asymmetry (see discussion by Mackinnon et al.). As such, Shrout and Bolger (2002) have suggested a bootstrap procedure to estimate the significance of the indirect effects. Use of the bootstrap procedure allows us to develop an empirical specification of the sample distribution, but there is no requirement for the sampling distribution to be symmetrical (Efron & Tibshirani, 1993). Therefore, we used the bootstrap procedure in the present study to test for the statistical significance of indirect effects.

The first step in the bootstrap method suggested by Shrout and Bolger (2002) was to create 1,000 bootstrap samples from the original data set through random sampling with replacement. Each bootstrap sample included a sample size of 234. Then the structural model (i.e., Model A, the partially mediated model for attachment anxiety and avoidance) was run with these 1,000 bootstrap samples to yield 1,000 estimations of each path coefficient. Next, an estimate of the indirect effect of attachment anxiety on depression was calculated using the output of the 1,000 estimations of each path coefficient by multiplying 1,000 pairs of path coefficients from (a) attachment anxiety to perceived discrimination and (b) perceived discrimination to depression. Likewise, the indirect effect of attachment avoidance on depression was estimated by multiplying 1,000 pairs of path coefficients from (a) attachment avoidance to perceived discrimination and (b) perceived discrimination to depression. An indirect effect is significant at the .05 level if the 95% confidence level does not include zero. The results from the bootstrap procedure indicated that the indirect effect of attachment anxiety to depression through perceived discrimination was significant ($b = .068$ [95% CI: .020, .120], $\beta = .50 \times .23 = .12$). The indirect effect of attachment avoidance through perceived discrimination to depression also reached significance ($b = -.027$ [95% CI: $-.066, -.001$], $\beta = -.15 \times .23 = -.03$). However, it is important to note that the lower boundary of the CI was very close to zero.

An Additional Analysis

As we can observe, the zero-order correlation between attachment avoidance and perceived discrimination is not significant ($r = -.02$, $p > .05$; see Table 3) in the measurement model. However, this association becomes significant when attachment anxiety and avoidance are in the structural model ($r = -.15$, $p < .05$; see Figure 2). Thus, there might be a suppression effect present for the relationship between attachment avoidance and perceived discrimination. An additional analysis was run to examine this possibility. A structural model was created with only the variables of attachment avoidance, perceived discrimination, and depression in the structural model (see Figure 3). The result indicated that the relationship between attachment avoidance and perceived discrimination was not significant ($r = -.02$, $p > .05$).

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[3] The 23% of the variance in perceived discrimination was explained by attachment anxiety and attachment avoidance. This value (i.e., 23%) is calculated by $(.50)^2 + (-.15)^2 + 2 \times (.50)(.25)(-.15) = .235$ (based on the path-tracing procedure; see the corresponding values in Figure 2). There is a slight difference between hand calculation (i.e., 23.5%) and the LISREL output (i.e., 23%) in terms of the percentage because the two-digit decimal was used in the hand calculation.

Table 4
Chi-Square and Fit Indices Among Different Mediation Models

Fit indices	Model A	Model B	Model C	Model D
Standard χ^2	76.15**	118.81***	88.71***	148.09***
Scaled χ^2	66.35*	107.02***	77.86**	128.61***
Df	48	49	49	50
CFI	.99	.97	.98	.96
RMSEA	.04	.07	.05	.08
CI for RMSEA	.01, .06	.05, .09	.03, .07	.07, .10
SRMR	.04	.08	.06	.12
Δ Standard χ^2(df)		A vs. B 42.76(1)	A vs. C 12.66(1)	A vs. D 72.04(2)

Note. $N = 234$. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval; SRMR = standardized root-mean-square residual; Model A = the hypothesized structural model (the best fit model; see Figure 1), the partially mediated model for both attachment anxiety and attachment avoidance (i.e., fully recursive model, where every structural path was estimated); Model B = partially mediated for attachment avoidant but fully mediated for attachment anxiety (i.e., the direct path from attachment anxiety to depression was constrained to zero); Model C = partially mediated for attachment anxiety but fully mediated for attachment avoidance (i.e., the direct path from attachment avoidance to depression was constrained to zero); Model D = the fully mediated model for both attachment anxiety and attachment avoidance (i.e., the direct paths from attachment anxiety or avoidant to depression were constrained to zero).
* $p < .05$. ** $p < .01$. *** $p < .001$.

The result from the bootstrap procedure also indicated the indirect effect from attachment avoidance through perceived discrimination to depression was not significant ($b = -.008$ [95% CI: $-.068$, .043], $\beta = -.02 \times .46 = -.01$). These findings suggest that when only attachment avoidance, perceived discrimination, and depression are included in the model (i.e., Figure 3), no mediation effect could be concluded. However, when both attachment anxiety and avoidance are in the model, the significance of the relationship between attachment avoidance and perceived discrimination may become artificially inflated to balance out the total effect between attachment anxiety and perceived discrimination. Thus, it appears that a suppression effect may be present in the mediation model (see Figure 2).

Test for Moderation

We used a hierarchical regression (Baron & Kenny, 1986) to test for moderation using SPSS 13 (see Table 5). Before analyses of the data, a composite score of perceived discrimination was created by summing the standardized scores of VHI, RRO, PPS, and PD. Similarly, a composite score of depression was created by summing the standardized scores of the short version of CES–D and

DASS–S. The predictors (attachment anxiety and attachment avoidance) were also standardized to control for possible multicollinearity among variables (Aiken & West, 1991; Frazier, Tix, & Barron, 2004). The two interaction terms were then created by calculating the products of each attachment dimension (anxiety or avoidance) with the moderator (perceived discrimination). That is, the two interaction terms are (a) Attachment Anxiety × Perceived Discrimination and (b) Attachment Avoidance × Perceived Discrimination. Next the variables were entered into the regression model in the corresponding order. First, the standardized predictors (attachment anxiety and attachment avoidance) were entered into the first block of the regression equations. As expected, attachment anxiety and avoidance were found to be significant predictors of depression ($R^2 = .36$, $p < .001$). Then the standardized moderating variable (perceived discrimination) was entered into the second block of the regression. The overall model was significant at step two, as was the significant incremental change in multiple correlation squared ($\Delta R^2 = .02$, $p < .05$), indicating that perceived discrimination predicted depression above and beyond two attachment dimensions (i.e., anxiety and avoidance). To evaluate for moderation effects, we entered the interaction variables (i.e., Attachment Anxiety × Perceived Discrimination and Attachment Avoidance × Perceived Discrimination) into the third block of the regression. If the paths from the interaction variables

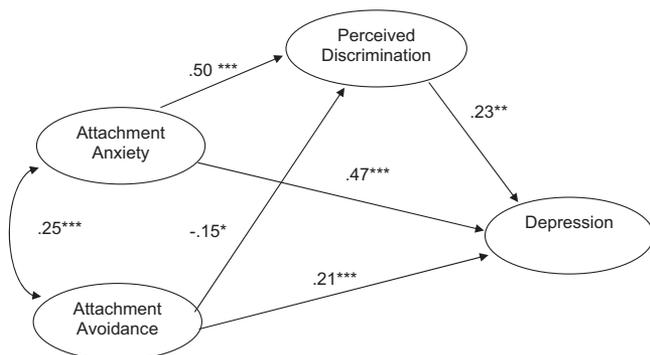*Figure 2.* The mediation model. $N = 234$. * $p < .05$. ** $p < .01$. *** $p < .001$.
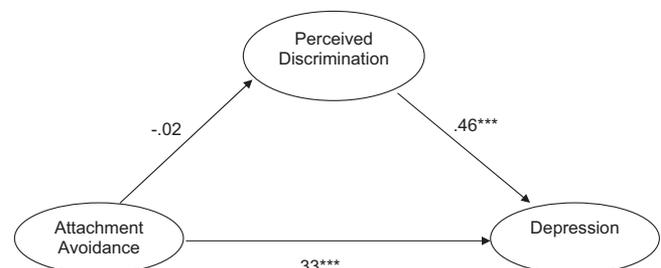

Figure 3. The mediation model for attachment avoidance only. $N = 234$.

Table 5

A Hierarchical Multiple Regression Analysis Testing Moderating Effects of Attachment and Perceived Discrimination on Depression

Variable	B	SE B	β
Step 1: Predictors			
Attachment anxiety	0.30	0.10	.17**
Attachment avoidance	0.93	0.09	.54***
Step 2: Adding a moderator			
Attachment anxiety	0.33	0.10	.18***
Attachment avoidance	0.86	0.10	.50***
Perceived discrimination	0.05	0.02	.14*
Step 3: Adding two interactions			
Attachment anxiety	0.35	0.10	.19***
Attachment avoidance	0.85	0.10	.49***
Perceived discrimination	0.05	0.02	.13*
Attachment Anxiety × Perceived Discrimination	0.03	0.02	.07
Attachment Avoidance × Perceived Discrimination	0.01	0.02	.01

Note. $N = 234$. $R^2 = .36$, $p < .001$, for Step 1; $\Delta R^2 = .02$, $p < .05$, for Step 2; $\Delta R^2 = .01$, $p > .05$, for Step 3.
* $p < .05$.   ** $p < .01$.   *** $p < .001$.

(i.e., Attachment Anxiety × Perceived Discrimination or Attachment Avoidance × Perceived Discrimination) to depression are significant, then evidence supports a moderating effect. The overall incremental change ($\Delta R^2 = .01$, $p > .05$) did not reach significance. Also, no moderation effect was significant for either Attachment Anxiety × Perceived Discrimination or Attachment Avoidance × Perceived Discrimination on depression over and above the other moderation effect.

Discussion

The goals of the present study were to examine whether perceived discrimination was a mediator and moderator between attachment (i.e., anxiety or avoidance) and depression in a gay male sample. Regarding the role of mediator, the present result indicated that perceived discrimination partially mediated the association between attachment anxiety and depression. Specifically, the findings showed that attachment anxiety had a strong positive association with perceived discrimination. It implies that those with higher levels of attachment anxiety are likely to pay more attention to others' rejection based on their sexual orientation. This result is consistent with attachment theory indicating that persons with attachment anxiety tend to have a negative working model of self and use hyperactivation strategies in response to stress. This strategy results in increased attention to perceived rejection signals such as discrimination. Similarly, this finding is consistent with empirical attachment studies in general (e.g., Hesse, 1999; Mikulincer, 1998b; Mikulincer & Orbach, 1995; Woodhouse, 2003) and gay males specifically (Mohr, 1999).

More important, the present result found that gay males with attachment anxiety are vulnerable to depression through detecting discrimination signals. It appears that despite the use of a hyperactivation strategy (e.g., paying more attention to discrimination signals) to protect themselves from emotional distress, these gay males with attachment anxiety are instead experiencing more perceived discrimination, which then acts to increase their depressive symptoms. Wei, Mallinckrodt, et al. (2005) found that college

students with attachment anxiety were more vulnerable to depression through their lack of capacity for self-validation and increased needs for other-validation. From this perspective, one possible interpretation of this finding is that gay males with attachment anxiety may have fewer internal resources for self-validation and are thus more attuned to outside evaluations for self-worth. However, this overattunement to others comes with the added risk of perceiving negative feedback regarding their sexual orientation, which in turn leads to greater levels of depressive symptoms.

Conversely, the results related to the indirect effect of attachment avoidance on depression through perceived discrimination were ambiguous and inconclusive. Despite detecting a significant negative relationship between attachment avoidance and perceived discrimination as well as a significant indirect effect when attachment anxiety was in the model (see Figure 2), our study showed that neither of these effects was present when attachment anxiety was removed from the model (see Figure 3). As we discussed above, gay males with attachment anxiety tend to have a negative working model of self. Conversely, those with attachment avoidance may have either a positive or negative working model of self. Attachment avoidance in Figure 2 is controlled for the attachment anxiety dimension. Thus, attachment avoidance in Figure 2 is more likely to be a case for those who have a positive working model of self. Perhaps when gay males with attachment avoidance have a positive working model of self, they have more capacity to self-validate their sexual orientation and deactivate or ignore ($r = -.15$) their perceptions of discrimination. In contrast, attachment avoidance in Figure 3 is not controlled for attachment anxiety. In other words, attachment avoidance possibly overlaps with attachment anxiety to some degree (remember, gay males with attachment anxiety tend to have a negative working model of self). Therefore, attachment avoidance in Figure 3 is likely to also include those who have a negative working model of self. On the one hand, they are likely to deactivate from the discrimination signals. On the other hand, because of their negative working model of self, they may lack the internal capacity to consciously defend against or distance themselves from these negative signals. This nearly zero correlation between attachment avoidance and perceived discrimination is likely due to a mixed combination of desiring to deactivate but not being able to successfully distance from the discrimination signals. However, these speculations need additional empirical research for confirmation or disconfirmation before adequate conclusions can be stated.

Furthermore, the magnitude of the association between attachment anxiety and perceived discrimination was significantly stronger than that between attachment avoidance and perceived discrimination. It makes sense that gay males with attachment anxiety would be more likely to recall perceived threats or discrimination than would those with attachment avoidance. Empirically, these findings are consistent with past research suggesting that those with attachment anxiety are more likely to notice and recall negative events, whereas those with attachment avoidance are less likely to do so (Fraley et al., 2000; Hesse, 1999; Mikulincer & Orbach, 1995; Woodhouse, 2003). In sum, these results suggest that gay men with attachment anxiety are more likely to detect and recall discrimination in their environment than are those with attachment avoidance.

In terms of the role of moderator, the findings did not support perceived discrimination as a moderator between attachment (anxiety and avoidance) and depression. These results are in contrast to

past literature suggesting the interaction of various personality variables (e.g., self-esteem or attachment) and perceived discrimination on levels of psychological distress (Corning, 2002; Hammen et al., 1995). However, past research on this topic has largely explored the impact of these variables on women. Given that gender has been identified as a salient variable on issues of stress and coping (Cassidy, O'Connor, Howe, & Warden, 2004; Clark, Anderson, Clark, & Williams, 1999; Slavin, Rainer, McCreary, & Gowda, 1991), perhaps future researchers can explore the proposed moderation model using a female or lesbian sample.

In addition to the mediation and moderation roles of perceived discrimination, two significant direct effects were found in the present study (see Figure 2). First, the direct effect of perceived discrimination and depression was significant over and beyond the attachment dimensions. This implies that gay males who perceived discrimination based on their sexual orientation are vulnerable to depression. This finding is consistent with the substantial body of literature linking perceived discrimination and several indices of distress in gay populations (e.g., Diaz et al., 2001; Herek et al., 1999; Mays & Cochran, 2001; Meyer, 2003; Waldo, 1999). Second, the direct effects between attachment (i.e., anxiety and avoidance) and depression were also significant (β = .47 and .21, respectively) over and above the indirect effects through perceived discrimination. These findings are not only consistent with the current attachment literature suggesting a positive relationship between attachment and depression (e.g., Roberts et al., 1996; Wei, Mallinckrodt, et al., 2005) but also expand this positive association into a gay male population. These findings deserve our attention for future research or clinical implications regarding the direct contributions of perceived discrimination and the quality of attachment on depressive symptoms in gay men.

Although perceived discrimination was found to be a mediator between attachment and depression, the relationship was only partially mediated. This means that other important mediators should be explored in this relationship. One such possible mediator is in-group support. Thoits (1985) and Meyer (2003) suggested that support from an in-group provides opportunities for positive comparisons of behaviors considered deviant by an out-group. Other researchers have also found that membership and participation in the gay subculture has been associated with higher levels of self-esteem and psychological adjustment (D'Augelli, Collins, & Hart, 1987; Jacobs & Tedford, 1980; Kurdek, 1988). Thus, future research might explore how one's attachment dimension is related to willingness to belong to a gay subgroup and how that membership might affect levels of depression. Other possible mediators are valence and gay identity development. Valence in this sense is one's evaluation, either positive or negative, of their sexual identity. Past research has found a positive relationship between positive sexual identity valence and psychological well-being (Allen, Woolfolk, Gara, & Apter, 1996; Meyer, 2003). Other researchers have identified valence as a key feature of the coming-out process (e.g., Diaz et al., 2001; Meyer, 2003; Meyer & Dean, 1998; Rotheram-Borus & Fernandez, 1995). Perhaps future studies could combine these earlier findings by exploring the relationships among attachment, valence, LGB identity development, and psychological distress. As mentioned earlier, repetition of this study with a lesbian sample would be an important next step in the development of attachment and discrimination literature. In particular, it would be useful to explore how lesbian women may potentially have to manage perceived discrimination based on either gender or sexual orientation or on both simultaneously.

There are some important limitations that should be noted. First, although several attempts were made to obtain a broad sample of participants, it is possible that this sample may be biased because it reflects only gay men who are interested in the topic, who are willing to participate, or who are active members of the gay community (e.g., Internet and gay-affirmative support organizations). Therefore, we need to be very cautious in making generalizations until more research is available to confirm or disconfirm the current results. Second, all of the measures used in this study were self-report questionnaires, presenting a mono-method bias. Future studies might use other methods (e.g., clinical interview) in this line of research. Third, although the GALOSI and PPS were developed through scale development processes specifically with LGB samples, only limited validity information was provided. It seems that the topic of perceived discrimination in homosexual populations is still in need in terms of scale development and scale validation. Another limitation is the disproportionate number of Caucasian participants represented in the sample. It is possible that members of minority groups might respond to perceived discrimination in very different ways because of their double minority status. Future research might explore these differences with regard to the proposed model. It is also important to note that this study makes no assumptions about the amount of discrimination actually occurring to participants in this study. The goals of this study were to explore the perceptions of discrimination rather than actual discrimination experiences. Future studies might explore the potential differences in how those with attachment anxiety and avoidance handle actual discriminatory experiences.

Moreover, the findings in the present study suggest several possible clinical implications. First, counseling psychologists can recognize that gay males with attachment anxiety and attachment avoidance are likely to perceive discrimination in different ways. That is, those with attachment avoidance may be less likely to report perceived discrimination, whereas those with attachment anxiety are more likely to have numerous experiences of perceived discrimination readily available to report. Second, despite the difference in their perceptions of discrimination, both groups are likely to experience a fair amount of depression related to these social rejections (i.e., perceived discrimination based on their sexual orientation). Thus, mental health professionals can work with those with attachment anxiety or avoidance to develop more internal resources for coping with such negative experiences. For instance, counseling psychologists working with gay males with attachment anxiety might help them to be aware of their tendency to pay more attention to external negative signals of rejection such as perceived discrimination based on their sexual orientation, which contributes to their depression. They can then work with gay males with attachment anxiety to help them switch their focus from external sources to internal sources of validation regarding their own sexual orientation (e.g., positive self-talk, reality testing) to decrease their depression. Also, the therapist might work with his client on developing alternative strategies, such as finding social networks that are supportive of the client's sexual orientation or increasing the client's skills for internal validation of his sexual orientation. Finally, clinicians and educators can use the findings from the present study to inform preventative programs such as diversity training, as well as diverse remedial interventions such as therapy and support groups for gay males.

In conclusion, the present study empirically examined perceived discrimination as a mediator or moderator between attachment and levels of depression in a gay male sample. The results suggest that perceived discrimination acts as a mediator but not a moderator between attachment and depression and that those with attachment anxiety perceive substantially more discrimination than those with attachment avoidance. These results contribute to a growing body of literature on the mediators of attachment and psychological distress as well as to the limited empirical data on the implications of the attachment theory to a gay male population. Finally, this study suggests that mental health professionals may be able to help gay males with attachment anxiety deal more effectively with perceived discrimination (e.g., positive self-talk) to decrease their levels of depression.

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