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Adult attachment, perceived discrimination based on sexual orientation, and depression in gay males

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Adult attachment, perceived discrimination based on sexual orientation, and
depression in gay males

by

Robyn A. Zakalik

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
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Signatures have been redacted for privacy

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ABSTRACT

This study examined the relationships among adult attachment, perceived discrimination, and depression in gay males. Prior research has suggested that attachment can be described by two orthogonal dimensions; attachment anxiety and attachment avoidance. Furthermore, those with different attachment dimensions respond to stress and perceived danger in distinct ways. Based on these premises it was hypothesized that those with attachment anxiety would experience greater levels of perceived discrimination than those with attachment avoidance. It was additionally hypothesized that perceived discrimination would both mediate and moderate the relationship between attachment and levels of depression.

To examine these hypotheses, 234 self-identified gay males were recruited from Internet and community resources related to the gay community across the United States. Approximately two-thirds of the participants completed an online version of the survey, while the remaining one-third were recruited in person and completed a paper-and-pencil version of the survey. Subsequent analyses indicated no statistical differences between these groups on any key variables.

Analyses of mediation using structural equation modeling indicated that perceived discrimination partially mediated the relationship between attachment anxiety and depression. Similar analyses for attachment avoidance showed inconclusive results. However, the relationship between attachment anxiety and perceived discrimination was found to be significantly stronger than the relationship between attachment avoidance and perceived discrimination. Moderation of attachment (anxiety and avoidance) by perceived discrimination on levels of depression was explored using hierarchical regression. Neither of the moderation hypotheses were supported. Additionally, about 23% of the variance in perceived discrimination was explained by attachment, and 47% of the variance in depression was accounted by attachment and perceived discrimination.

These findings suggest that gay males with different attachment dimensions may respond to and cope with perceived discrimination in distinct ways. Clinical implications, limitations, and areas for future research are also discussed.

CHAPTER 1: INTRODUCTION

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 1978, Hazan and Shaver first applied Bowlby's attachment theory to adult romantic attachment, which has stimulated several attachment studies on adult attachment in counseling psychology. 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), responses to stress and coping (e.g. Mikulincer, 1998a), psychological distress or depression (e.g., Wei, Heppner, & Mallinckrodt, 2003), and career choice (Blustein, Prezioso, & Schultheiss, 1995). 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. So far, there have only been a handful of empirical studies applying attachment theory to gay, lesbian, and bisexual (LGB) populations (see Mohr, 1999 for a review).

Numerous researchers have worked to develop measures based on categorical placement into attachment types (e.g., Bartholomew, 1990; Bartholomew & Horowitz, 1991; Collins & Read, 1990; Hazan & Shaver, 1987). However, a recent comprehensive study has found that adult attachment can be described with two relatively orthogonal underlying dimensions, anxiety and avoidance (Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998). Attachment anxiety is characterized by an excessive need for approval from others and a fear of interpersonal rejection or abandonment. People with a high degree of attachment anxiety generally had caregivers who were inconsistent in meeting their child's emotional needs. People with attachment avoidance, on the other hand, are characterized by an extreme desire for autonomy and an intense fear of interpersonal closeness or dependence. Those with a high degree of attachment avoidance generally had caregivers that consistently

rejected or denied their child's appeal for comfort. Those who are relatively free from both attachment anxiety and avoidance are assumed to have a secure adult attachment orientation. People with secure attachment are considered to be the healthiest in terms of psychological adjustment. These individuals generally had caregivers that were consistently responsive to their emotional and physical needs, and as a result gained a sense that their needs could and would be met through communicating them to the world. As children grow into adulthood these early attachment styles affect the way the child interprets and interacts with the world. In adulthood, these attachment dimensions are evident in many interpersonal interactions beyond those to the caregiver.

The inability of those with attachment anxiety and attachment avoidance to find a safe space in the world, often leads those individuals to experience greater levels of psychological distress or depression. In general, empirical research has found that those with insecure attachment experience disproportionate amounts of depression compared to their secure counterparts (Carnelley, Pietromonaco, & Jaffe, 1994; Murphy & Bates, 1997; Roberts, Gotlib, & Kassel, 1996; Wei, Mallinckrodt, Russell, & Abraham, 2004). Additionally, studies have linked insecure attachment to indices of negative affect (e.g., Simpson, 1990), emotional distress and nervousness (Collins, 1996), general distress symptoms (Lopez, Mitchell, & Gormley, 2002; Wei, Vogel, Ku, & Zakalik, 2005), interpersonal difficulties (Bartholomew & Horowitz, 1991; Horowitz, Rosenberg, & Bartholomew, 1993), increased feelings of loneliness (Hecht & Baum, 1984; Kobak & Sceery, 1988; Shaver & Hazan, 1989), and greater hostility toward others (Mikulincer, Hirschberger, Nachmias, & Gillath, 2001; Mikulincer & Shaver, 2001). In sum, prior research suggests that those with insecure attachment are more susceptible to experiencing depression due to their pattern of relating to others.

Attachment and Affect Regulation

In the last three decades, attachment theory (Bowlby, 1973, 1982) has become one of the most important conceptual frameworks for understanding individual differences in the process of affect regulation. Supporting this framework is an expanding body of research suggesting that individuals with different attachment dimensions significantly differ in their responses to stress (e.g., Kobak & Sreery, 1988; Lopez & Brennan, 2000; Mikulincer, Shaver, & Pereg, 2003). In general, when a threat is perceived, individuals with attachment anxiety tend to use hyperactivation affect regulation strategies, whereby they exhibit heightened emotional and behavioral reactions (e.g., greater access to past negative experiences). However, when individuals with attachment avoidance perceive stress they tend to use deactivation affect regulation strategies (e.g., emotional detachment from negative experiences). Several empirical studies on adult attachment have indicated that individuals with different attachment dimensions use different and distinct affect regulation strategies for managing their depression or distress (for a review, see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer et al., 2003). For example, Wei et al. (2005) found that the association between attachment anxiety, negative mood, and interpersonal problems was mediated only by emotional reactivity (a type of hyperactivation strategy), but not emotional cutoff (a type of deactivation). Conversely, the association between attachment avoidance, negative mood, and interpersonal problems was mediated only by emotional cutoff, but not emotional reactivity.

Moreover, the relationship between attachment anxiety and hyperactivation affect regulation strategies has been supported by several studies (for a review, see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer et al., 2003) including greater access to memories of negative early childhood events (Hesse, 1999), greater access to negative attachment related events (Mikulincer, 1998b), more efficient access to both sad and anxious memories (Mikulincer & Orbach, 1995), and a greater attention to negative emotions and a greater

memory for them (Woodhouse, 2003). Conversely, attachment avoidance has been associated with deactivation affect regulation strategies (for a review, see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer et al., 2003), including poor memory for negative early childhood events (Hesse, 1999), less efficient access to both sad and anxious memories (Mikulincer & Orbach, 1995), and the use of a defensive strategy during attachment related events such as paying less attention to stimuli (Fraley, Garner, & Shaver, 2000). In general, it seems that empirical research supports the assertion that attachment anxiety is associated with hyperactivation affect regulation strategies and attachment avoidance is associated with deactivation affect regulation strategies. However, from the literature review, no study could be located to examine whether individuals with different attachment orientations perceive discrimination differently, or more specifically examining perceived discrimination regarding sexual orientation in a gay male population.

Attachment and Perceived Discrimination

Mohr (1999), however, suggested that attachment and affect regulation might be particularly relevant to gay individuals facing discrimination regarding their sexual orientation. He proposed that victims of anti-gay violence, who are high in attachment avoidance, would be likely to minimize the impact and the need for support after an attack. Furthermore, gay individuals who are high in attachment anxiety are likely to pay greater attention to their stress, seek out extra support, and internalize the discrimination. Thus, the present study is built on the premise that gay individuals perceive and respond to the world differently based on their attachment dimensions. It is hypothesized that gay males with attachment anxiety or attachment avoidance may react to a perceived stressor (e.g., discrimination), in ways consistent with their attachment dimensions. Specifically, the first research question is to examine whether attachment anxiety or avoidance are positively related to perceived discrimination. More specifically, it is hypothesized that the strength of

the association between attachment anxiety and perceived discrimination will be stronger than the association between attachment avoidance and perceived discrimination.

Perceived Discrimination and Depression

It has been well documented that being a gay male in the United States is not only stressful, but also associated with higher proportions of psychological distress (e.g., Diaz, Ayla, 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 due to 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). Likewise, Meyer (1995) found a significant association between perceived prejudice based on one's homosexual orientation and several indices of psychological distress, including anxiety, sadness, hopelessness, and helplessness. These studies support the link between perceived discrimination and psychological distress or depression. However, other studies suggest a more complicated relationship between perceived discrimination and distress or depression. Herek, Gillis, and Cogan (1999) found that those who had reported crimes they believed to be hate acts based on their gay sexual orientation (e.g., vandalism with anti-gay graffiti) had significantly higher rates of depressive symptoms, above and beyond those who experienced crimes they felt were not a result of a personal attack (e.g., robbed for money). From this study, Herek et al. suggested that the meaning behind an action may be more important than the action itself. This is particularly relevant to those with insecure attachment who tend to view the world as less safe than their secure counterparts, and are therefore more likely to perceive an interaction as threatening.

Attachment, Perceived Discrimination, and Depression

From the above literature review, there are associations among attachment, perceived discrimination, and depression or psychological distress. Researchers in counseling psychology have increased their interests to examine the mediators and moderators between the link of attachment and depression. If such mediators or moderators are found, clinicians could develop counseling interventions based on those factors to alleviate depression experienced by those with insecure attachments. Several mediators, such as dysfunctional attitude and self-esteem (Roberts, Gotlib, Kassel, 1996), self-concealment and self-splitting (Lopez et al., 2002), perceived coping (Wei et al., 2003), maladaptive perfectionism (Wei, Mallinckrodt, et al., 2004), social competence and emotional awareness (Mallinckrodt & Wei, 2003), and emotional reactivity and emotional cutoff (Wei et al., 2005), between the link of attachment and depression or distress have been discussed in the attachment literature. However, researchers have paid less attention to examining whether perceived discrimination based on a gay sexual orientation is a mediator between attachment and depression. A study by Wei, Mallinckrodt, Larson, and Zakalik (2004) found that college students with attachment anxiety increased their depression partially through their excessive needs for validation or reassurance from others. Moreover, college students with attachment anxiety or avoidance can work to lessen their depression by increasing their capacity for self-reinforcement. Even though this study examined college students instead of a gay male sample, it implies that individuals with attachment anxiety are vulnerable to depression due to their excessive need for validation from others. Similarly, gay males with attachment anxiety may need others' validation and acceptance regarding their sexual orientations. However, others' discrimination based on a homosexual orientation is prevalent in our society (e.g., D'Augelli, 1992; Diaz et al., 2001; Mays & Cochran, 2001; Meyer, 2003). If gay males with attachment anxiety or avoidance lack the capacity for self-reinforcement, they may be more vulnerable to depression.

To date, only a few studies have been done to apply attachment theory to LGB populations. Among the few available studies, Mohr and Fassinger (2003) found that LGB adults with attachment avoidance were unlikely to self-disclose about their sexual orientation to the public. One possible interpretation is that LGB adults with attachment avoidance tend to use deactivation strategies (i.e., not disclosing their sexual orientation to others) to protect themselves from others' discrimination based on their homosexual orientation. However, no significant associations between attachment anxiety and self-disclosure about sexual orientation to the public were reported. From the above limited literature on attachment and LGB populations, there is still no answer to whether gay males' attachment style (anxiety or avoidance) contributes to their levels of depression through their perception of discrimination based on their homosexual orientation. Thus, if the first hypotheses of the associations between attachment insecurity and perceived discrimination are supported, then the second research question is to examine whether perceived discrimination mediates the relationship between attachment insecurity (i.e., attachment anxiety and attachment avoidance) and depression in gay males.

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 one-year period and investigated how interpersonal stress interacted with the constructs underlying attachment to predict depression. Their results indicated that the fear of abandonment (anxious attachment) and the ability to trust and depend on others (avoidant attachment) 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 other words, female college students with high levels of perceived gender-related discrimination and low personal or collective self-esteem reported the greatest levels of depression. 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, the third research question is to examine whether perceived discrimination interacts with attachment insecurity (i.e., attachment anxiety or attachment avoidance) to predict depression among gay males.

Hypotheses

In conclusion, three sets of hypotheses are tested in this study. First, attachment anxiety and avoidance will be positively related to perceived discrimination. Furthermore, the relationship between attachment anxiety and perceived discrimination will be stronger than that of attachment avoidance and perceived discrimination. Second, the amount of perceived discrimination by gay males will *mediate* the relationship between attachment anxiety or avoidance and depression (see Figure 1). And third, the amount of perceived discrimination by gay males will *moderate* the relationship between attachment anxiety or avoidance and depression (see Figure 2).

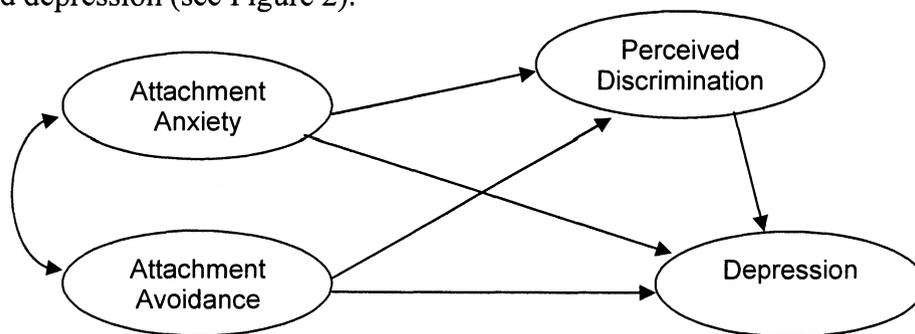
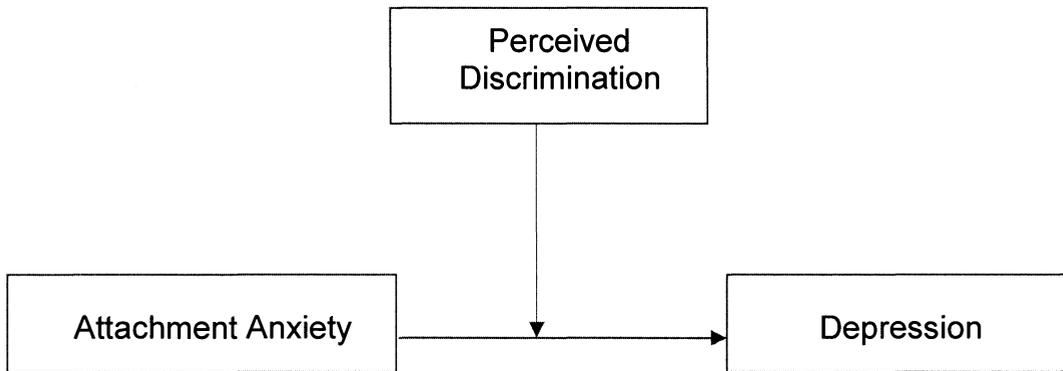


Figure 1: The Hypothesized Model

Panel A.



Panel B.

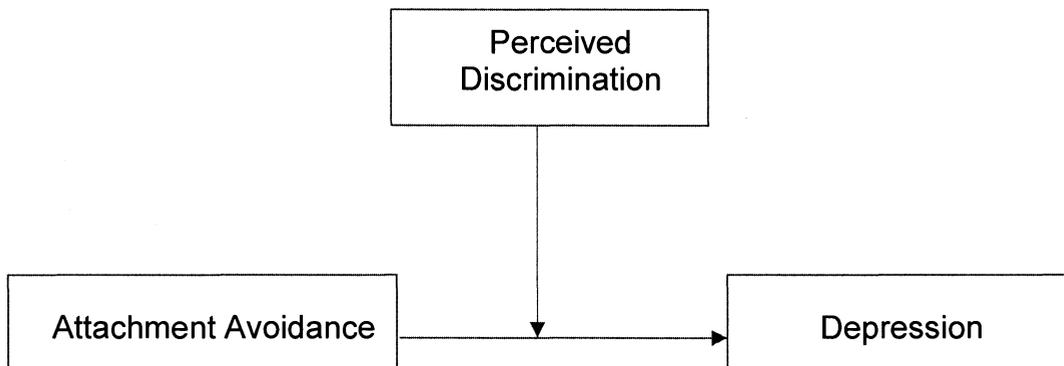


Figure 2: Moderator Model for Attachment Avoidance (Panel A) and Attachment Anxiety (Panel B)

CHAPTER 2: LITERATURE REVIEW

The present literature review will first explore the concepts, background, and grounding theory of attachment. Then a brief account of the measurement of attachment will be explored as well as a rationale for the attachment measurement chosen for this study. Next, affect regulation and perceived discrimination will be discussed as it relates to attachment theory. This section will be followed by a discussion of how perceived discrimination has been measured in the past and how it will be measured in the present study. Finally, I will discuss the relationship between perceived discrimination and depression as it relates to this study, followed by a brief discussion of the depression measures chosen for this study. The chapter will conclude with an overall discussion of how the three variables in this study, attachment, perceived discrimination, and depression have been linked in previous literature and how they are linked in theory in the present study.

Attachment Theory

Since the 1970's, John Bowlby has published a body of work to illustrate the concept of attachment (1973, 1979, 1980, 1982, 1988). Bowlby's attachment theory describes a variety of interpersonal responses for satisfying emotional needs. Inspired by Harlow's experiments with Rhesus monkeys, Bowlby sought to examine how affectional bonds in humans worked. In Harlow's (1961; Harlow & Zimmerman, 1959) experiments, baby monkeys were given different pairs of fake mother monkeys. Each pair consisted of a mother monkey that provided physical needs (i.e., food) and a mother monkey that provided emotional safety (i.e., tactile comfort). Time after time the baby monkeys chose to spend the majority of their time with the mother monkey that provided emotional safety. Furthermore, in the absence of the comfort mothers, the monkeys exhibited a great deal of distress and anxiety. The results from these experiments highlighted the importance of emotional safety in infants, beyond that of mere survival.

Bowlby's work with infants revealed similar interactions between children and their primary caregivers. Bowlby found that infants have an innate desire to maintain close proximity to their caregivers. Furthermore, infants' attachment behaviors such as crying, clinging, and smiling work to increase the proximity of the primary caregiver to the child and to in turn reduce anxiety. Over time the responses of the caregiver to the infant helps the child to develop a set of rules regarding communication for getting one's needs met. If the caregiver is able to maintain close proximity to the child, the child will view the caregiver as a secure base from which they can explore their surroundings. However, if the caregiver fails to provide a secure base, by neglecting to meet the needs of the child, then the child will eventually detach in an effort to get their needs met in alternative ways.

In conjunction with Bowlby, Mary Ainsworth (Ainsworth, Blehar, Waters, & Wall, 1978) found that infants will develop one of three attachment styles based on their interactions with their primary caregivers; secure, anxious-ambivalent, or avoidant. To assess which style of attachment young children displayed, Ainsworth developed the Strange Situation test. Mirroring one of Harlow's (1961) experiments, Ainsworth sought to elicit attachment behaviors by leaving children and their parents alone in a room filled with toys. The children were then observed for the types of proximity maintenance and exploratory behaviors they exhibited. Certain patterns began to surface in the children and their caregivers, and from these patterns the children could be categorized into specific attachment styles.

The first attachment style, secure attachment, is considered to be the healthiest form of attachment, and the most beneficial for infant adjustment. The secure child generally has a caregiver that is consistently responsive to the child's emotional and physical needs. The child is therefore able to establish a "secure base" with the parent, which in turn gives the child a sense of security to explore the world. The child also has a sense that his/her needs can and will be met through communicating them to the world. The anxious/ambivalent child

is often characterized as anxious, and frequently attempts to gain attention through highly emotional appeals. The child generally has a caregiver that is inconsistent in attending to their child's needs, in that the caregiver varies in extremes from being either unavailable or inattentive to being overly intrusive. The result is a child who is preoccupied with their caregiver. Children of this type are often distracted by their caregivers and therefore have a hard time exploring the world around them. The third type is anxious/avoidant.

Anxious/avoidant children generally have caregivers that consistently reject or deny their child's appeal for comfort. These children soon learn that trying to attract attention is not in their best interest. They instead avoid contact with their caregiver and appear not to be distressed when their parents are not around.

As children grow into adulthood these early attachment styles affect the way the child interprets and interacts with the world. In adulthood, these attachment styles carry over into interpersonal interactions that go beyond those with the caregiver (e.g., Feeney, 1999; Hazan & Shaver, 1994). Furthermore, as children mature, the role of the primary caregiver becomes less important as other personal relationships begin to take hold. These new relationships, although markedly different in terms of the child's survival, are equally important for their emotional well-being (Hazan & Shaver).

Adult Attachment Measurement

The measurement of adult attachment stems from the precepts set forth by Bowlby and Ainsworth. Based on the idea that children's attachment styles are a result of their parent's attachment style, George, Kaplan, and Main (1985) developed the Adult Attachment Interview (AAI). Following the logic that parents interact with their children in the same way that they were socialized, children will have similar internal working models of the world. As predicted children who appear to be secure, based on the Strange Situation test, have parents that are secure on the AAI. Similar results were found for the other attachment styles. In 1987, Hazan and Shaver developed one of the first measures for independently assessing

attachment in adults. In developing an assessment based on romantic attachment, Hazan and Shaver theorized that romantic love was in essence an attachment process. Their measure, a self-report, was based on Ainsworth's Strange Situation as well. Using vignettes representing secure, anxious, and avoidant attachment styles, participants chose which one they identified with most.

Although these tests had much conceptual overlap, they differed significantly in their conceptualization of avoidant attachment. Bartholomew (1990; Bartholomew & Horowitz, 1991) noted that avoidance as conceptualized by the AAI was identified by the denial of experienced distress. However, Hazan and Shaver's self-report identified individuals as avoidant through their distress as it related to closeness to others. In response to these discrepancies, the addition of a fourth attachment style was proposed. Bartholomew (1990; Bartholomew & Horowitz, 1991) suggested that four styles exist as a result of dichotomous (positive or negative) views of the individual self and the world (Figure 3). The model of self indicates the strength of one's self worth, and is therefore associated with one's dependence on others for approval and reassurance. The model of others is the degree to which one believes that others are available for support. This dimension is therefore related to one's willingness to seek reassurance from others. In this model avoidance was split into two groups, dismissing and fearful. Dismissing individuals are described as being emotionally self-reliant and uninterested in establishing close or romantic relationships. The fearful individual, on the other hand, is socially insecure, lacking in assertiveness, and uncomfortable with closeness.

		<u>Model of Self</u>	
		Positive Low Anxiety	Negative High Anxiety
<u>Model of Others</u>	Positive Low Avoidance	Secure Comfortable w/ Intimacy	Preoccupied/Anxious Overly Dependant
	Negative High Avoidance	Dismissing Deny Attachment	Fearful Fear of Attachment

Figure 3: Four Attachment Styles as Defined by Bartholomew (1990)

Although Bartholomew's model is generally depicted as it is in Figure 3, some of her colleagues use the terms Anxiety and Avoidance for the two dichotomous dimensions (see Figure 4). This representation highlights the inference that the model of self relates to fears of abandonment while the model of others relates to the distrust of others (Brennan et al., 1998). Following this logic, Brennan et al. (1998), conducted a study to examine if there were indeed two underlying dimensions of attachment. To do so they combined 60 known attachment measures including 323 items, which were administered to over a thousand participants. The data were then factor analyzed. The results indicated two higher order factors representing anxiety and avoidance. From this study Brennan and colleagues created the 36-item Experiences in Close Relationships Scale (ECRS). The ECRS is a self-report measure that assesses an individual's placement along the two relatively orthogonal attachment dimensions. Due to the comprehensive nature of the development of this questionnaire it was chosen as the attachment measure for the present study.

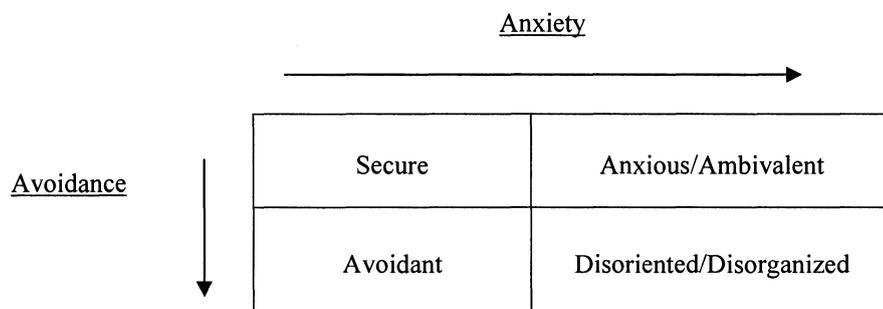


Figure 4: Four Attachment Styles by Attachment Dimension

Attachment and Affect Regulation

One of the most intriguing characteristics of attachment theory are its broad implications for how individuals respond to not only those that are close to them but to stressful situations in general. Bowlby (1988, 1973; Lopez & Brennan, 2000) described the attachment system as a mechanism to protect individuals from danger; as such it is one of the principal systems activated when an individual is fatigued or distressed. Due to early positive experiences with

attachment figures, individuals with secure attachment learn that stress is manageable and that they are able to communicate their needs to resolve or lessen their distress. Those with insecure attachment have experienced repeated negative interactions with attachment figures and have therefore developed internal working models of others as untrustworthy and unreliable. Although insecure strategies act to protect the individual, providing short-term relief from distress (Cassidy & Kobak, 1988), the repeated use of insecure strategies often leads to increased distress.

Beyond Bowlby's initial assertions, research has largely supported the link between attachment and indices of psychological distress (e.g., Besser & Priel, 2003; Carnelley, Pietromonaco, & Jaffe, 1994; Murphy & Bates, 1997; Roberts, Gotlib, & Kassel, 1996; Wei et al., 2003; Wei et al., 2005). Carnelley, Pietromonaco, and Jaffe (1994), compared samples of depressed and non-depressed females regarding their internal working models of others and found that depression was generally linked to insecure models of attachment. They also found that measures of depression were associated with greater levels of preoccupation (anxious attachment) and fearful avoidance (avoidant attachment) of attachment. Likewise, Murphy and Bates (1997) compared depressed and non-depressed samples (coed sample) regarding their attachment styles and found that those with insecure attachment were over-represented in the depressed sample. More specifically, 47% of those with fearful attachment and 35% of those with preoccupied attachment were depressed. Conversely, those with dismissive (13%) and secure attachment (7%) had lower rates of depression. The low rate of depression in individuals with dismissive attachment (one type of avoidant attachment) may be a reflection the tendency for those with avoidant attachment to downplay their distress.

Other studies have further supported this link, finding that insecure attachment has been positively associated with negative affect (e.g., Simpson, 1990), emotional distress and nervousness (Collins, 1996), general distress symptoms (Lopez, Mitchell, & Gormley, 2002), interpersonal difficulties (Bartholomew & Horowitz, 1991; Horowitz, Rosenberg, &

Bartholomew, 1993), increased feelings of loneliness (Hecht & Baum, 1984; Kobak & Sceery, 1988; Shaver & Hazan, 1989), and greater hostility toward others (Mikulincer, Hirschberger, Nachmias, & Gillath, 2001; Mikulincer & Shaver, 2001). In addition, research has suggested that those with secure attachment are able to effectively deal with their negative emotions. In a series of studies, Mikulincer (1998a) found that secure persons were more likely to react with anger, when it was based on rational analysis, and attribute hostile intent only when there was clear evidence. Furthermore, the anger expressed was more controlled as the individuals sought to resolve their conflicts through communicating their needs. In another study (Mikulincer & Orbach, 1995), participants were asked to think about emotion-laden memories and rate the degree to which the memory affected them. Secure individuals, as opposed to their insecure counterparts, were able to access painful memories without being overwhelmed by them. Following this line of research, a comprehensive review of attachment styles and affect regulation by Shaver and Mikulincer (2002) suggested that the ability of secure individuals to handle distressing situations reduces their need to rely on defensive strategies to protect themselves from negative evaluations from themselves or others.

Contrary to those with secure attachment, people with insecure attachment generally rely on defensive strategies to regulate their distress. In an exhaustive review, Fuendling (1998) purported that people with anxious attachment exhibit a persistent attention to their emotions (especially negative) and an overactive appraisal of threat. Furthermore, they are prone to self-disclosure and are highly expressive regarding their distress. Individuals with avoidant attachment, on the other hand, tend to avoid anxiety by decreasing their reliance on others for emotional support. They therefore tend to tune-out affective experiences and situations in which they perceive threats. These findings support earlier assertions that individuals with anxious attachment tend to use hyperactivation strategies, while people with avoidant attachment tend to use deactivation strategies. Hyperactivation is characterized by

repeated attempts to minimize distance from attachment figures, the over activation of negative thoughts and feelings, and the failure to let go of psychological distress. Conversely, deactivation is characterized by attempts to detach from attachment figures and the suppression of painful thoughts and feelings.

A number of studies (for a review, see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer et al., 2003) have highlighted the relationship between hyperactivation and anxious attachment. Mikulincer and Orbach (1995), found that those with anxious attachment had highly efficient access to negative memories, a high level of emotion associated with those memories and an inability to repress their anxiety after retrieving the memories. Other studies found similar tendencies such as a greater attention to negative emotions, a greater memory for negative emotions (Woodhouse, 2003), and a greater access to negative attachment related events (Mikulincer, 1998b). Likewise, the relationship between deactivation and avoidant attachment has been largely supported (for a review, see Fuendeling, 1998; Lopez & Brennan, 2000; Mikulincer et al., 2003). In contrast to their secure and anxious counterparts, those with avoidant attachment evinced a poorer memory for negative events and had less emotional intensity associated with them (Mikulincer & Orbach, 1995). Additionally, a study by Fraley et al. (2000) found that people with avoidant attachment tend to pay less attention during attachment related events, making it more difficult for them to recall the event later.

In reviewing this line of research, Wei et al. (2005) empirically confirmed that different and distinct affect regulation strategies are used by those with anxious and avoidant attachment in managing their distress. Their data indicate that the association between attachment anxiety, negative mood, and interpersonal problems was mediated only by emotional reactivity (a type of hyperactivation strategy), but not emotional cutoff (a type of deactivation). Conversely, the association between attachment avoidance, negative mood,

and interpersonal problems was mediated only by emotional cutoff, but not emotional reactivity.

In sum, it is clear that there is a distinct relationship between attachment dimensions, affect regulation strategies, and indices of distress or depression. More specifically, individuals with attachment avoidance tend to use deactivation strategies to manage their distress while those with attachment anxiety tend to use hyperactivation strategies. Moreover, those with insecure attachment are more likely to experience depression than those with secure attachment. Although it appears that those with insecure attachment perceive the world more dangerously, no studies could be located that examine how different attachment dimensions react to perceived discrimination. It is therefore the goal of the present study to expand the current literature by exploring the relationship between insecure attachment and perceived discrimination.

Attachment and Perceived Discrimination

Given that individuals with avoidant and anxious attachment perceive the world as less safe, they may be more vulnerable to perceiving threats. Therefore, it is likely that minorities with insecure attachment styles will be particularly vulnerable to threat perception. Furthermore, due to minority members' increased risk for experiencing discrimination it is possible that minorities with insecure attachment may be more sensitive to perceiving discrimination. One such minority population is the gay male community. Although, no studies could be located that have explored this relationship, Mohr (1999) suggested that attachment dimensions might be an important variable regarding how gay males respond to perceived discrimination.

Until recently, the vast majority of empirical attachment literature has focused solely on heterosexual relationships. However, Mohr and Fassinger (2003) have provided evidence to suggest that attachment theory might be particularly relevant to the lesbian, gay, and bisexual (LGB) experience. In their study of LGB identity development, they found that

individuals who were high in both anxious and avoidant attachment had more difficulty accepting their identity than their more secure counterparts. Additionally, their results indicated a negative relationship between avoidance and measures of outness and a positive association with a negative LGB identity. The study also found evidence to suggest that individuals, general internal working model of attachment might be affected by their parent's views on homosexuality.

Although Mohr (1999) has not directly examined the relationship between attachment styles and perceived discrimination, he did suggest that those with different attachment styles would respond in ways consistent with their prototypical affect regulation strategies. Specifically, he hypothesized that those with attachment avoidance would be likely to downplay the impact of discrimination and the need for emotional comfort from others. Furthermore, those with anxious attachment would focus on their distress, internalize the message, and look to others for emotional support. Clearly the relationship between attachment and the LGB experience warrants additional research. As such, the present study seeks to expand on the current literature by examining the relationship between attachment and perceived discrimination of gay males. More specifically, I hypothesize that there will be a positive correlation between attachment avoidance and perceived discrimination, as well as attachment anxiety and perceived discrimination. Furthermore, I predict that the relationship between attachment anxiety and perceived discrimination will be stronger than that of attachment avoidance and perceived discrimination.

Measuring Perceived Discrimination

Perhaps one of the reasons attachment researchers have neglected to examine the relationship between attachment dimensions and perceived discrimination, is due to the dearth of psychometrically validated measures of perceived discrimination designed for the GLB population. The vast majority of research involving perceived discrimination in the gay community has relied on a simple series of questions such as "How often had verbal insults

been directed at you (Herek, 1993; D'Augelli, 1992)?" or "How many times have you been discriminated against due to your sexual orientation (Mays & Cochran, 2001)." However, more recently, researchers have increased their efforts to design specific measures for examining the GLB experience.

One of the first measures designed to access the stressors associated with a homosexual orientation is the Gay Life Events Scale (GALES; Rosser & Ross, 1989). The GALES measures generic life stressors (e.g., "You failed an important exam") as well as the impact of stigmatization (e.g., "Somebody tells an anti-gay joke in your presence") on the levels of emotional distress in gay males. Although, factor analysis supported the structure of the measure, it was developed with a sample of largely white males, all of whom were from either Australia or New Zealand. Furthermore, only a few of the questions directly addressed discrimination.

Then in 1999, Waldo created the Workplace Heterosexist Experiences Questionnaire (WHEQ) to assess heterosexist and harassment experiences of GLB individuals in the workplace. This 22-item measure was designed to examine various levels of discrimination from ambiguous situations to explicit harassment. A confirmatory factor analysis supported two main factors. The first factor accessed indirect experiences of discrimination (e.g., "Made you feel as though you had to alter discussions about your personal or love life [e.g., referring to your partner as a "roommate"]") while the second factor measured direct forms of discrimination (e.g., "Displayed or distributed homophobic literature or materials in your office [e.g., e-mail, flyers, brochures]"). Although this measure provides a useful measure for the work environment, it is unfortunately limited to this setting.

In response to the need for a more diverse measure, Highlen, Bean, and Sampson (2000) sought to develop a scale that could be used to measure discrimination across settings and with ethnically diverse populations. Their measure, the Gay and Lesbian Oppressive Situation Inventory (GALOSI), was developed using a focus group composed of men and

women from numerous racial and ethnic backgrounds (i.e., Latino/Latina, Biracial, European, African American and Native Americans) and then validated through a web based survey ($n = 607$). The GALOSI was divided into two main sections each comprised of the same 7 subscales. The first section, the GALOSI-F, measured the frequency of specific events; while the second section, the GALOSI-E, measured the effect of the events. However, the correlation between the two measures was .86 ($p < .01$) suggesting that the two measures are likely to be accessing the same underlying construct. Although the measure evinced good scale structure and internal consistency, the measure has not been used in additional research projects since its conception.

In choosing a measure for the present study a couple of factors were taken into consideration. The first is that the study seeks to examine differences in subjective experiences of discrimination. Therefore the situations explored must have some degree of ambiguity. For instance there would be little doubt in interpreting and extremely hard to tune out a verbal assault where someone yelled, “faggot”. However, asking whether one was denied a job opportunity due to his sexual orientation is likely to involve a degree of subjective judgment, since it is unlikely an employer would admit to such an action. It is for this reason that the WHEQ was excluded as a measure for this study. Many of its items inquired about overt experiences of discrimination that would be hard to misinterpret (e.g., “called you a ‘dyke’, ‘faggot’, ‘fence-sitter’, or some other slur?”). Second, this study sought to examine various life arenas and situations (e.g., family, friends, work, or relationship partners) where one could be exposed to discrimination. Focusing on several areas will help to develop a more complete picture of the GLB experience. Furthermore, depending on how “out” and in which settings an individual is “out”, where and when they experience discrimination may drastically change. With these criteria in mind the author was unable to find one specific measure that met all of the study’s goals. Therefore several subscales of existing measures were used, and in some cases modified to fit the needs of the study.

The first two subscales chosen for this study, Verbal Harassment and Intimidation (VHI), and Restricted Rights and Opportunities (RRO), were obtained from the GALOSI-F. Both scales are responded on a 5-point Likert scale ranging from *never* (1) to *almost always* (5). The first subscale, the VHI (7 items: $\alpha = .77$), assesses how often the participant felt homophobic or heterosexist statements were made in their presence or directed at them (e.g., “I have heard people making negative remarks about gays”). This scale demonstrated discriminant validity through a significant negative correlation (-.15) with the Impression Management scale of the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1991). This negative correlation indicates that as verbal harassment increases, the tendency to under report behaviors that are socially undesirable decreases. This relationship may imply that after repeated incidences with harassment participants may be more likely to hide parts of themselves that are vulnerable to attack. The second subscale, the RRO (3 items: $\alpha = .69$), explores the frequency with which the participants felt they had been denied opportunities in the workplace and in obtaining housing (e.g., “Advancement opportunities at work have been limited because of my gayness”). The low Chronbach alpha, which is likely due to the small number of items, suggests that additional items could be added. However, the content of the current scale represents important concerns for GLB individuals (e.g., discrimination at work). Furthermore, these two scales were selected from the full scale and above other possible scales (i.e., WHEQ) because they best represented the goals of the study in terms of ambiguity and diversity of life arenas.

Since attachment processes are in essence interpersonal processes it was extremely important to include a scale that captured perceived prejudice in various relationships. To access this information, the Perceived Prejudice Scale (PPS: Brown, 1997) was selected. The PPS is an 18-item measure comprised of five subscales representing different interpersonal areas (e.g., work, school, or family). Unlike the GALOSI, which measures the frequency of specific types of incidents, the PPS assesses the frequency of perceived prejudice from

various groups of people (e.g., co-workers, teachers, or neighbors). The results from an exploratory and confirmatory factor analysis supported the structure of the measure and, in general, good Chronbach alphas for most subscales, ranging from .71 to .87. Only one subscale, Prejudice from Children, had a lower alpha of .59. Despite its low alpha, this subscale was included in this study due to its assessment of discrimination from close interpersonal relationships, which is relevant to attachment theory. The author did not report a total Chronbach alpha for the entire scale.

The final scale chosen for this variable is the Perceived Discrimination subscale of the Acculturative Stress Scale for International Students (PD; Sandhu & Asrabadi, 1994). This scale is designed to assess feelings of perceived deprivation and alienation from those in an out-group. Although, the measure was originally designed for international students, the stressors experienced by this population are similar to those experienced by members of the GLB community. A review of the current literature failed to find any instances where this measure has been used with the gay community. However, the measure appears to adequately represent the concerns of the gay community. Berry, Kim, Minde, and Mok (1987) defined acculturative stress as a type of stress that occurs as people move across cultures, and is marked by physical, social and psychological symptoms. In this sense, acculturative stress can be compared to the stresses experienced by GLB individuals who must interact daily in a heterosexually dominated culture. Moreover, Sandhu, Portes, and McPhee (1996) found that the symptoms experienced by international students in adjusting to American culture included feelings of powerlessness, inferiority, loneliness, hostility, and perceived discrimination. These symptoms mirror those of GLB individuals who have experienced hostility in negotiating their largely heterosexual environments (e.g., D'Augelli, 1992; Diaz, Ayla, Bein, Henne, & Marin, 2001; Mays & Cochran, 2001; Meyer, 2003; Ragins & Cornwell, 2001; Waldo, 1999).

The PD is composed of eight questions rated on a 5-point Likert scale ranging from (1) *strongly disagree* to (5) *strongly agree*. The scale showed a very high Chronbach alpha (.90) and has been successfully used with a wide range of nationalities (see Sandhu & Asrabadi, 1994 for a review). The majority of the scale's items (e.g., "I am treated differently in social situations") remain unchanged for use with the GLB participants; however, two questions were adjusted for a better fit. Two of the questions ask about differences in treatment due to race and color, in changing these items to reflect sexual orientation (e.g., "I am treated differently because of my sexual orientation") the two items become the same. Therefore the duplicate item was removed. This change reduces the number of items from eight to seven.

Perceived Discrimination and Depression

The relationship between the gay community and elevated rates of psychological distress has been well documented (for a review see Meyer, 2003). Many researchers and theorists have attempted to explain this relationship using a minority stress conceptualization (e.g., Highlen et al., 2000; Meyer, 1995, 2003; Waldo, 1999). Meyer (1995, 2003; Brooks, 1981) theorized that GLB individuals are subjected to chronic and repeated stress as a result of social stigmatization. Furthermore, GLB individuals experience this stress through direct events (e.g., discrimination or heterosexism), the consistent vigilance and expectation for such events, the internalization of negative societal values, and the consistent hiding or repression of ones sexual orientation. These constant internal and external forces act on GLB individuals to lessen their well-being and increase their experiences of distress.

Much of the research exploring this relationship has focused on the direct experiences of perceived discrimination by GLB individuals on their levels of distress. This research has largely suggested that the chronic weight of discrimination can have dire consequences for the GLB victim's emotional well-being (e.g., D'Augelli, 1992, Diaz et al., 2001; Mays & Cochran, 2001; Meyer, 2003; Ragins & Cornwell, 2001; Waldo, 1999). Herek (1993)

examined the fears and experiences of GLB students and staff at Yale University and reported disheartening results. Of the 215 participants that completed questionnaires, 65% had been the target of verbal harassment, 42% had experienced some form of physical abuse, and 98% had heard negative comments made about LGB individuals. The consequences of these experiences were also evident. Fifty-six percent of the respondents reported that the likelihood of being a target of discrimination was high, and 80% of the GLB respondents rated the need to keep their identity hidden as important. Although the results are correlational, the persistent stress on the GLB community appeared to have a notable effect. Increasing the reliability of this study has been its repetition on other campuses (D'Augelli, 1992; Herek, 1993), which have found similar results, indicating campus atmospheres of insecurity and fear.

Other studies have sought to examine broader populations to explore the relationship between perceived discrimination and mental health. Mays and Cochran (2001) randomly telephoned homes across the United States and asked participants to report on their sexuality, experiences of discrimination, and factors related to their mental health. Although, the vast majority of participants were heterosexual, the researchers found that homosexual individuals did report greater levels of day-to-day experiences with discrimination. Furthermore, the odds of experiencing current psychological distress were significantly increased by experiences of discrimination.

Brooks (1981; Meyer, 1995) asserted that it is not the event itself that causes lasting distress in those who have experienced discrimination, but rather the intense feelings of rejection resulting from the implied message of the discrimination. Herek, Gillis, and Cogan (1999) supported this claim by comparing the experiences of GLB individuals who had experienced a crime they believed to be due to their sexual orientation (i.e., a hate crime) to those who had experienced crimes they did not believe were due to their sexual orientation (total sample 2,259 from in and around Sacramento, California). The results showed that

those who had experienced what they perceived as an attack on their sexual orientation had consistently higher levels of psychological distress (as measured by depression, anger, anxiety, traumatic stress, and positive affect). These results suggest that the perceived meaning of an action is an important factor in assessing its effects on the individual. This is particularly relevant to those with anxious or avoidant attachment who tend to see the world as more dangerous and themselves as more prone to personal attack.

In sum, the research largely supports the relationship between perceived discrimination based on a homosexual orientation and indices of psychological distress. Moreover, this relationship appears to exist across various populations and degrees of discrimination (i.e., name calling to criminal attacks). The present study seeks to extend the current literature by introducing an attachment framework for how GLB individuals experience and manage their distress related to perceived discrimination.

Depression Measurement

The present study seeks to isolate depression as its measured variable of distress. In doing so, there were numerous depression measures available, and choosing an appropriate measure was a difficult task. The following section will explore three of the most popular depression measures and provide a justification for choosing the depression measures used in this study.

The first widely used self-assessment inventory of depression, the Beck Depression Inventory (BDI), was developed by Beck, Ward, Mendelson, Mock, and Erbaugh in 1961. Since then, this measure has set the standard from which all other depression measures are generally compared. The BDI measures the depth and intensity of depression by providing a list of 21 categorical symptoms and attitudes generally observed in clinically depressed individuals. Respondents are asked to rate the severity of each symptom on a likert-type scale from lowest (0) to highest (3). The scores are then totaled to provide a composite score representing the “severity” of depression. Like the sample from which it was developed, the

BDI was designed to measure the severity of depression of those diagnosed as clinically depressed. Although the BDI has provided good internal consistency in psychiatric and non-psychiatric patients of .86 and .81, respectively (Beck, Steer, & Garbin, 1988), it was not chosen as the measure for this study. The reason is that the sample population for this study is a non-clinical population. Therefore, a depression measure that was developed from a similar population would likely provide a better fit. As such, two other measures were chosen to measure depression.

The first measure chosen, the Depression Subscale of the Depression Anxiety Stress Scales (DASS-D), was developed by S. H. Lovibond and P. F. Lovibond, in 1995. The full DASS consists of three subscales measuring depression, anxiety, and stress. Each scale consists of 14 primary symptoms related to the focus of the corresponding scale. Respondents are asked to rate each symptom's severity during the past week on a Likert-type scale ranging from least severe (0) to most severe (3). Scores are then totaled to form a composite score representing severity of depression. A primary strength of the DASS is that the authors utilized a predominantly non-clinical sample ($N = 2,914$) during the development of the measure. For this reason, the symptoms included are typically associated with dysphoric mood. Furthermore, it was S. H. Lovibond and P. F. Lovibond's goal in the development of this scale to create a measure that maximally discriminated between the constructs of depression and anxiety. To do this, symptoms were identified in advance, that were unique to either depression or anxiety. In their study, S. H. Lovibond and P. F. Lovibond found that the BDI included several items (e.g., weight loss, insomnia, somatic preoccupation, loss of libido, irritability) that are not uniquely related to depression (could also be anxiety). In comparing these two measures they found that the absence of these non-specific items in the DASS-D was reflected in the higher alpha coefficient of .91 versus .84 in the BDI despite the BDI's larger number of items (14 versus 21).

Noting the need for briefer scales to increase response rates, the authors of the DASS suggested that a shorter version of the DASS composed of 21 items (DASS-21), or 7 items per scale could be used. A study by Antony, Bieling, Cox, Enns, and Swinson (1998) largely confirmed the use of the DASS-21 above and beyond the longer version. Antony et al. found that the DASS-21 Depression subscale (DASS-21-D) had retained an excellent factor structure as well as a very high Chronbach alpha (.94). In addition, their study suggested that the DASS-21 had several advantages over the longer version, including less items, a cleaner factor structure, and smaller interfactor correlations. Although a review of the current literature failed to find a study that had used this measure with a gay male sample, given the numerous benefits of this measure it was chosen for the present study.

The second depression measure used in the present study is the Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977). Like the DASS, the CES-D was designed to measure the severity of depressive symptoms in the general population and places an emphasis on the affective components of depression. The measure consists of 20 symptoms for which the respondent rates the frequency of which the symptom has been experienced in the past week. Each item utilizes a 4-point Likert-type scale ranging from 0 to 3, with higher scores representing a higher frequency. Scores are then summed to generate a composite score representing severity of depression.

Although this scale is often used interchangeably with the BDI, Skorikov and Vandervoort (2003) noted its distinct differences and advantages over the popular measure. In comparing the two measures, the authors found that the CES-D showed a stronger overall relation to the construct of depression over the BDI (BDI = .51 versus CES-D = .63). They therefore suggested that due to its increased sensitivity, the CES-D maybe more effective in detecting differences in severity of depression. Another benefit of this measure is that it has a short form version. Although, the CES-D is relatively short, Kohut, Berkman, Evans, and Cornoni-Huntley (1993), found that the scale proved to be too long for some respondents

experiencing depressive symptoms. In their pre-tests using the full CES-D, 10% of the respondents refused to answer all the items. Recognizing the need for maximally efficient measures, they sought to validate three shorter versions of the CES-D. Of these versions the Iowa 11 x 3 version, which retains 11 of the original 20 items and collapses the two highest response categories, evinced the strongest support. Kohut et al. sampled 3,673 Iowa residents age 65 and older and found that factor loadings of the Iowa 11 x 3 had minimum eigen values of .98 and explained nearly 60% of the variance. The measure also maintained acceptable levels of internal consistency (.76). Another study (Carpenter et al., 1998) sampled six populations ($N = 832$) of women above the age of 18 and found that Chronbach alphas ranged between .71 and .87 and had high correlations between .88 and .93 with the original version. Both studies concluded that the Iowa 11 x 3 version preserves the psychometric properties of the full CES-D, reduces response burden, and is a good substitute for the longer version.

The literature review failed to locate a study that used the CES-D (Iowa 11 x 3) with a GLB population; however, Smith and Ingram (2004) used the full CES-D with this population and found a chronbach alpha of .93. Another study by Lewis, Derlega, Griffin, and Krowinski (2003) used the CES-D with a GLB population and found a chronbach alpha of .92. Although the CES-D (Iowa 11 x 3) has not been used with GLB samples before, previous research suggests that due to the full CES-D's strong internal consistency with GLB populations and the strong relation between the long and short versions, this measure will likely be a good fit for this study.

In sum, the CES-D (Iowa 11 x 3) and the DASS-21-D were chosen to represent the construct of depression in this study. These measures were chosen for several reasons. First, both measures have shown stronger relations with the construct of depression than has the BDI. Next, shorter versions of each scale will reduce the response burden and improve the

likelihood of receiving complete data. And finally, both measures have indicated good factor structure and internal reliability.

Attachment, Perceived Discrimination, and Depression

Although the direct links between adult attachment, perceived discrimination, and indices of depression and psychological distress have been well supported, there has been no research directly linking these three variables. However, from the above literature review it appears that those with attachment anxiety or avoidance may be likely to perceive discrimination and then in turn exhibit depressive symptoms. In other words, perceived discrimination may mediate the relationship between adult attachment dimensions and depression.

The expansion of research beyond direct relationships to examine the potential mediators and moderators is important in counseling psychology research, because such variables can be used as points of intervention in clinical work. This is particularly important in exploring attachment, since attachment styles are considered to be relatively enduring and stable (Bowlby, 1988). Thus, other intermediating variables might prove to be more malleable and open to change. As such, researchers have recently increased their efforts to examine mediating factors of attachment and indices of psychological distress and depression. A study by Wei et al. (in press) found that college students with attachment anxiety increased their depression partially through their excessive needs for validation or reassurance from others. Furthermore, college students with attachment anxiety or avoidance can increase their capacity for self-reinforcement to lessen their depression. Even though this study examined college students instead of a gay male sample, it implies that individuals with attachment anxiety are vulnerable to depression due to their excessive need for validation from others. Similarly, gay males with attachment anxiety may need other's validation and acceptance of their sexual orientations. However, others' discrimination based on sexual orientation is prevalent in our society (e.g., D'Augelli, 1992, Diaz et al., 2001;

Mays & Cochran, 2001; Meyer, 2003). If gay males with attachment anxiety or avoidance lack the capacity for self-reinforcement, they may be vulnerable to depression.

Another study by Diaz et al. (2001) lends support to the detrimental effects of perceived discrimination on depression through reduced abilities to cope. They sampled gay and bisexual Latino men from venues likely to attract this population (i.e., clubs, bars, weeknight events) in major cities across the United States (New York, Los Angeles, and Miami). They found that social discrimination based on sexual orientation, race, and poverty acted to increase social isolation and lower self esteem, which in turn increased symptoms of psychological distress (as measured by anxiety, depression, and suicidal ideation).

Other researchers have identified a variety of mediators linking attachment and psychological distress including dysfunctional attitudes and self-esteem (Roberts et al., 1996), self-concealment and self-splitting (Lopez et al., 2002), perceived coping (Wei et al., 2003), maladaptive perfectionism (Wei et al., 2004), and social competence and emotional awareness (Mallinckrodt & Wei, 2003). However, researchers have paid less attention to the examination of whether perceived discrimination might act as a mediator between insecure attachment and depression. Nevertheless, results from previous research suggest that insecure attachment may result in a view of the world as unsafe for gay males, thereby influencing those with anxious or avoidant attachment to be vulnerable to depression when they encounter discrimination. Finally, the increased frequency of perceived discrimination may act to confirm the view of an unsafe world or the individual may absorb these negative messages, which in turn leads to increased levels of depression. Therefore the second goal of the present study is to examine whether perceived discrimination mediates the relationship between attachment avoidance or attachment anxiety and depression.

Moreover, it is possible that perceived discrimination might act as a moderator. That is, insecure attachment would interact with perceived discrimination to increase levels of depression. In contrast to mediation, moderation does not assume a causal relation with

regard to attachment and perceived discrimination (one does not cause the other). Instead, perceived discrimination may serve as a moderator, which changes the strength of the association between insecure attachment and depression. In counseling psychology, researchers have increased their interest in investigating not only the mediators but also the moderators between the link of insecure attachment and depression. If mediators or moderators can be detected, they can be used to develop intervention strategies to help people reduce their psychological distress or depression. For instance, if perceived discrimination acts a mediator or moderator between insecure attachment and depression for gay males, they can be helped to more effectively manage their perceptions of discrimination (e.g., through reality checking, reframing, or self-validation) in order to decrease their distress or depression.

There have been relatively few studies that have examined the moderation effects among attachment, perceived discrimination, and depression. Corning (2002), conducted two studies examining the interaction between perceived gender discrimination in women with levels of self-esteem (personal or collective) on levels of depression. The first study examined personal self-esteem and found that perceived discrimination interacted with levels of self-esteem to predict depression ($\beta = -.19$). The second study used a measure of collective self-esteem to assess the degree to which the women identified and rated their social group as positive. These results found an interaction effect of perceived discrimination and collective self-esteem on depression ($\beta = -.21$) as well. More specifically, both studies showed that those with low levels of self-esteem (personal or collective) had substantially higher levels of depression after experiencing discrimination than those with high levels of self-esteem. In addition, the tests of the slopes for the high personal ($\beta = -.02$) or collective ($\beta = .00$) self-esteem group who perceived discrimination did not significantly predict depression.

In another study, researchers (Hammen et al., 1995) investigated the interaction between attachment styles and interpersonal stress to predict levels of depression in young

women transitioning from high school into more independent environments. The study used the Revised Adult Attachment Scale (RAAS; Collins & Read, 1990) to assess the three constructs underlying attachment: Close (comfort with closeness and intimacy), Anxiety (fear of being abandoned), and Depend (the ability to trust in others for support). Researchers followed the women over a one-year period and then compared levels of depression at the beginning and the end of the study. A hierarchical multiple regression found a significant interaction effect between Anxiety (fears of abandonment) and measures of life stress on levels of depression ($R^2 = .03, p < .05$), as measured by the Structured Clinical Interview for DSM-III-R (SCID; Spitzer, Williams, Gibbon, & First, 1992). Furthermore, Depend (the ability to trust in others for support) also interacted with interpersonal stress to predict levels of depression using the SCID ($R^2 = .06, p < .01$).

In sum, it appears that interpersonal stressors including perceived discrimination interact with personal vulnerabilities to influence levels of depression. From the attachment literature, other moderators including marital adjustment (Scott & Cordova, 2002) and maladaptive perfectionism (Wei, Mallinckdrot, et al., 2004) have been found to act on depressive symptoms. However, no studies could be located that have examined perceived discrimination as a moderator of insecure attachment and depression, in either heterosexual or homosexual samples. From the above review, it appears that insecure attachment (avoidant and anxious) may interact with perceived discrimination to increase depression. Therefore, the final research question in this study is to examine whether perceived discrimination interacts with insecure attachment to predict depression among gay males.

CHAPTER 3: 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 author obtained data through the Internet (63%) and in paper and pencil form (37%) through a number of organizations and events in Iowa, Pennsylvania, and Maryland. Of the sources sampled, usable data were obtained from list serves and Internet groups (63%), a gay pride event in central Pennsylvania (26%), an LGB affirmative church in Maryland (5%), two support groups in Baltimore, Maryland (1%), and another support group at Iowa State University (5%). The reported residency of the participants by state and geographic region are listed in Table 1. The largest percentage of participants was from the Northeast (32%), followed by the South Atlantic (30%), Midwest (20%), West (12%), and South Central United States (4%).

Table 1: Participant Residence by Geographic Region and State

<i>Region/ State</i>	<i>n</i>	<i>Region/ State</i>	<i>n</i>	<i>Region/ State</i>	<i>n</i>	<i>Region/ State</i>	<i>n</i>	<i>Region/ State</i>	<i>n</i>
West	27	Midwest	46	South Atlantic	70	Northeast	75	South Central	9
Arizona	1	Indiana	2	District of Columbia	2	Connecticut	2	Kentucky	1
California	12	Illinois	5	Florida	10	Massachusetts	3	Tennessee	2
Colorado	2	Iowa	23	Georgia	7	New Jersey	5	Arkansas	1
New Mexico	6	Kansas	1	Maryland	28	New Hampshire	1	Texas	5
Oregon	5	Michigan	11	North Carolina	12	New York	7		
Washington	1	Missouri	1	Virginia	10	Pennsylvania	57		
		Nebraska	2	West Virginia	1				
		Ohio	1						

Note. $N = 234$; 7 Participants did not indicate their state of residence; Geographic regions as indicated by US Census Bureau

Three percent of the participants did not indicate their state of residence. The vast majority of participants were White/Caucasian (77.4%) followed by Black/African American (9%), multiracial American (3%), Hispanic American/Latino (2.6%), Asian/Asian American (1.7%), and Native American (.9%). 10.7% of the participants did not report their race/ethnicity. Participants were also asked to indicate their religious affiliation (see Table 2).

The vast majority of participants indicated some form of Christian affiliation (45%). The next largest group were those that either declined to answer the question or indicated “none” (28%), followed by Agnostic (9%), Other (6%), Jewish (3%), Atheist (3%), Pagan (3%), Unitarian (1%), Native American (>1%), Muslim (>1%), and Hindu (>1%). The age of participants range from 18 to 80 with a mean age of 37 ($SD = 13.52$). Participants reported income ranged between \$3,000 and \$160,000 with a mean of \$46,354 ($SD = \$31,197$). Finally, participants were asked to indicate whether they were “out” to friends, family, and/or co-workers. 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 co-workers (69%).

Table 2: Participant's Religion

<i>Religion</i>	<i>n</i>	<i>Religion</i>	<i>n</i>	<i>Religion</i>	<i>n</i>	<i>Religion</i>	<i>n</i>
Catholic	28	Baptist	4	Jewish	8	Pagan	6
Christian	22	Quaker	2	Hindu	1	Native American	2
Episcopal	5	Anglican	1	Muslim	1	Unitarian	3
Protestant	11	Mormon	1	Agnostic	20	Other	15
Methodist	8	Presbyterian	1	Atheist	7	None/Did not indicate	65
Lutheran	7	Christian Other	10				
Roman Catholic	6						

Note. $N = 234$

Instruments

Attachment. The Experiences in Close Relationship Scale (ECRS; Brennan et al., 1998) is a 36-item self-report measure of adult attachment. The instructions ask the participants to rate how well each statement describes their experiences in romantic relationships. It was developed from over 1000 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 scale ranging from *disagree strongly* (1) to *agree strongly* (7) assessing scores on two

orthogonal dimensions underlying attachment: Avoidance and Anxiety. The Avoidance subscale (18 items) measures fear of intimacy, discomfort with closeness, and self-reliance (e.g., “I try to avoid getting too close to my partner”). The Anxiety subscale (18 items) measures preoccupation with abandonment, fear of rejection, and jealousy (e.g., “I worry about being alone”). The internal reliability (coefficient alpha) was .94 and .91, for the Avoidance and Anxiety subscales, respectively. Brennan et al. also provided evidence of validity by significant correlations in the expected directions with measures of touch aversion and post-coital emotions. Cronbach Alpha for Avoidance and Anxiety in the present study was .90 and .94, respectively. Recommendations by Russell, Kahn, Spoth, and Altmaier (1998) were followed to create 3-parcel measured indicators for each of the two latent variables of attachment avoidance and attachment anxiety. As suggested, separate exploratory factor analyses were conducted using the maximum-likelihood extraction method for Anxiety and Avoidance. Then the resulting items were rank-ordered based on factor loading magnitude. Next, the highest and lowest items were successively paired on each parcel to equalize the average loadings of each parcel on its respective factor.

Perceived Discrimination. Four scales will be 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 (GLOSI-F, Highlen, Bean, & Sampson, 2000). The GLOSI-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 scale ranging from *never* (1) to *almost always* (5). The measure is composed of 7 GALOSI scales, however only two subscales were used in this study, the RRO (3 items) and the VHI (7 items). Highlen, et al. reported alphas of .69 for RRO and .77 for VHI. The Cronbach alphas for these two measures in the present study were .79 and .82, respectively. The RRO subscale was chosen due to its direct relation to the goals of this study

as 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 ($M = 9.99$, $SD = 1.85$; for gay males) with higher scores indicating more perceived discrimination. The VHI subscale was chosen as a measure of how often participants perceived verbal assaults or felt intimidated by others based on their homosexuality (e.g., “I have heard people telling gay-bashing jokes.”). Scores can range from 7 to 35 ($M = 28.27$, $SD = 4.14$; for gay males) with higher scores indicating more perceived discrimination. Discriminant validity was obtained for each GALOSI scale by comparison with the Impression Management Scale (measures tendency to report behavior as socially desirable; Paulhus, 1991), which showed low, non-significant, and negative correlations. This scale is a new scale and test retest reliability has not been established.

The Perceived Prejudice Scale (PPS; Brown, 1997) is an 18-item self-report measure of perceived prejudice from various people in one’s life. 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 scale ranging from (0) *no prejudice* to (5) *very high degree of prejudice* or NA *for not applicable, no contact with this group*. Five factors were analyzed from the 18 questions including Prejudice from Children (2 items), Prejudice in Own Family (3 items), Prejudice with Partner’s Family (3 items), Prejudice with Les-bi-gay Group (2 items), and Prejudice in Public (8 items, e.g., “coworkers”). Scores range from 0 to 90 with higher scores indicating more perceived prejudice. Although, Brown did not report a total Alpha for this measure, the internal reliability in the present study was .79. The measure has also shown a negative correlation (-.37) to measures of outness.

The Perceived Discrimination (PD) subscale from the Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994) 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/culture shock, guilt and non-specific factors. The Perceived Discrimination (PD) subscale (8-item) 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 scale ranging from (1) *strongly disagree* to (5) *strongly agree*. Total scores can range from 7 to 35, with higher scores representing greater amounts of perceived discrimination. The internal consistency of this measure as reported by Sandhu and Asrabadi was .90. The present study reports a similar alpha of .89. Since the scale was originally designed for international students, some items were changed to be consistent with 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; "I am treated differently because of my sexual orientation." Therefore, one of the duplicate items was deleted. Construct validity for the ASSIS was supported by a negative association with adaptation (Kaul, 2001) and a positive association with depression (Buseh, McElmurry, & Fox, 1997; Wei, Heppner, Mallen, & Ku, 2004).

Depression. Two depression scales will be used for the measures of depression. The Center for Epidemiological Studies – Depression Mood Scale, Iowa 11 × 3 Version (CES-D-11; Radloff, 1977; Kohut, Berkman, Evans, & Cornoni-Huntley, 1993) is an 11-item self-report scale that assesses current levels of depressive symptoms. The scale was developed from a reduced number of items from the full version of the CES-D to decrease response burden. Each item utilizes 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 (e.g., "I felt lonely"). 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 Cronbach alphas between .71 and .87 (Kohut et al.; Radloff). The present study found a slightly higher alpha of .88. Furthermore, the CES-D has been

shown to discriminate between psychiatric and general populations, and has reported sensitivity to changes in samples of psychiatric patients (Radloff). The CES-D-11 has shown strong correlations of .88 to .93 with the full version (Kohut et al).

The Depression subscale from the Depression Anxiety and Stress Scales-Short Form (DASS-21-D: Lovibond & Lovibond, 1995) is a 7-item measure composed of primary symptoms of depression. Each item is rated according to the severity of that symptom for that week (e.g., "I felt I wasn't worth much as a person"). The scale, composed of 4 points, 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. The DASS-21-D was developed from a subset of items retained from the full version the scale: the DASS-D. The shorter version was found to have numerous benefits over the longer version including fewer items, a cleaner factor structure, and smaller interfactor correlations (Antony, Bieling, Cox, Enns, & Swinson, 1998). A high internal consistency of .94 for the DASS-21-D was found in the present study. Antony et al. completed several analyses providing support for the validity of the DASS-21-D, including comparison with the Beck Depression Inventory ($r = .79$), the State-Trait Anxiety Inventory-Trait Version ($r = .71$), as well as a comparison of the DASS-D and the DASS-21-D for clinical and non-clinical populations.

Procedure

Participants were contacted through one of two methods: 1) the Internet or 2) 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 exclusive to gay males over the age of 18. Yahoo groups were targeted since the number of members, and membership selection criteria (e.g., gay males only, must be 18 or over, etc.) are openly listed on the group websites. Group moderators of those groups meeting the

sampling criteria were then contacted by the author to seek temporary admission to the group. Once permission was obtained, an email was sent out to each of the members on the list and posted onto the list's message board (see Appendix A). The email explained the nature of the study, provided the researcher's contact information, and included a link to the survey website. 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 list serves with an unknown membership makeup. That is, it was unknown by the author how many members were on the list serve or how many of those members identified as gay men (as opposed to women, heterosexual men, etc.). These potential participants received the same email as the prior group, but were additionally encouraged to forward the email on to other relevant list serves. 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, which was hosted through surveymonkey.com, they were directed to the informed consent page explaining the nature of the survey including all risks and benefits (see Appendix B). 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 (see Appendix C). The survey included two validity check items (e.g., "Please mark 'not sure' for this question"), to help filter data responses that may have been submitted randomly or inattentively. Only two participants who completed the survey answered these questions incorrectly. Upon completing the online survey, participants were given the opportunity to submit their contact information (name and phone number or email address; Appendix D) to be entered into a random drawing for a monetary prize of \$50. To maintain participant confidentiality, contact information was stored separate from the survey data. Furthermore, contact information was not reviewed until the end of the project, and the entries were re-ordered so they could not be matched up

to survey answers. The participants were then thanked for their participation (see Appendix E) and given the researcher's contact information. A total of 147 usable surveys were obtained through these methods indicating a response rate of less than 10%.

The paper and pencil participants were obtained from a variety of sources. The largest group ($n = 60$) was obtained from the Central Pennsylvania Pride Festival, in Harrisburg Pennsylvania. In this case, the author obtained a booth at the event and solicited participants to fill out the survey during the festival or participants were given packets to take with them and mail back to the researcher. A total of 80 packets were passed out at this event, resulting in a 75% response rate. The second largest group ($n = 11$) was obtained from a gay affirmative church in suburban Maryland. In this case the researcher announced the survey during the church service and invited participants to pick up a survey packet to take home with them and mail back to the researcher. A total of 18 packets were distributed at this event (response rate of 61%). The next set of participants ($n = 12$) was obtained from a support group for gay and bisexual males at a large state university in Iowa. In this instance, the researcher contacted the group leader with a description of the study, who in turn advertised the study and distributed packets to interested members. A total of 15 packets were distributed to this group (80% response rate). The final group ($n = 4$) was obtained through two men's support groups hosted through a community mental health center in Baltimore, Maryland. The researcher contacted the research coordinator of the mental health division who then approved the study with the research director and other staff members. A total of 8 surveys were passed out through this organization (response rate 50%). The total response rate from all the paper and pencil surveys was 72%.

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, participants were asked to email or mail their contact information to the primary investigator directly, separate from their responses.

CHAPTER 4: RESULTS

Creation of Multiple Observed Indicators for the Latent Variables

Ideally, the latent variables would be developed from multiple measures, assessing the similar construct (e.g., attachment, perceived discrimination). As we discussed earlier, ECRS was developed from all the self-report adult attachment measures available at the time. Thus, it would be redundant if any adult attachment measures would be added besides ECRS. Therefore, a total of six parcels (3 for attachment anxiety and 3 for attachment avoidance) were created for the multiple observed indicators for the latent variables of attachment anxiety and attachment avoidance. The procedure followed by recommendations from Russell, Kahn, Spoth, and Altmaier (1998). 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 comprised of the highest and lowest ranking items to balance the average loading of each parcel on its respective factor. In addition, for the latent variable of perceived discrimination, the four observed indicators were from the four perceived discrimination measures, VHI, RRO, PPS, and PD. For the latent variable of depression, the two observed indicators were from the two depression scales, CES-D and DASS-21-D.

Descriptive Statistics

A series of independent samples t-tests were performed to determine whether there were any significant differences in the main 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. Of the eight main variables, only one initially reached significance, the Perceived Prejudice scale ($p = .02$). However, after a Bonferroni adjustment was made to adjust the significance level for multiple tests, this variable no longer reached the significance threshold ($p = .01$). It can therefore be concluded 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 the 12 measured variables are shown in Table 3. In general, most variables evinced 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 ($r_s = -.06$ to $.03$) showed low and non-significant relationships. Such correlations suggest a weak relationship 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, the measurement model was first tested using 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 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). Lastly, the chi-square difference test was used to compare nested models.¹ The initial test of the measurement

Table 3: Means, Standard Deviations, and Correlations among 12 Observed Variables

	<i>M</i>	<i>SD</i>	2	3	4	5	6	7	8	9	10	11	12
1. Anxiety 1	25.80	8.08	.85**	.85**	.29**	.27**	.25**	.36**	.21**	.39**	.15*	.55**	.51**
2. Anxiety 2	24.09	8.00		.88**	.19**	.13*	.14*	.37**	.20**	.41**	.15*	.53**	.47**
3. Anxiety3	22.74	8.31			.21**	.22**	.22**	.35**	.27**	.38**	.12	.56**	.50**
4. Avoidance 1	16.31	6.35				.78**	.75**	-.01	-.04	.02	.03	.30**	.27**
5. Avoidance 2	16.40	6.14					.83**	-.02	.01	-.01	.01	.27**	.23**
6. Avoidance 3	14.75	6.02						-.03	-.05	-.02	-.06	.26**	.25**
7. GALOSI VHI	4.70	5.27							.52**	.63**	.50**	.36**	.38**
8. GALOSI RRO	21.22	2.31								.51**	.39**	.20**	.20**
9. ASSIS-PD	19.83	6.15									.42**	.32**	.33**
10. PPS	29.77	10.93										.18**	.14*
11. CESD	17.07	4.68											.80**
12. DASS-D	11.01	4.74											

Note. *N* = 234. Anxiety 1, 2, 3 = item parcels from the Anxiety subscale of the Experiences in Close Relationships Scale; Avoidance 1, 2, 3 = item parcels from the Avoidance subscale of the Experiences in Close Relationships Scale; GALOSI VHI and RRO = Verbal Harassment and Intimidation and Restricted Rights and Opportunities of the Gay and Lesbian Oppressive Situation Inventory; ASSIS-PD = Acculturative Stress Scale for International Students - Perceived Discrimination subscale; PPS = Perceived Prejudice Scale; CESD = Center for Epidemiological Studies – Depression Mood Scale; DASS-D = the Depression subscale from the Depression Anxiety and Stress Scales-Short Form.

* $p < .05$; ** $p < .01$

Table 4: Factor Loadings for the Measurement Model

Measure and variable	Unstandardized factor loading	SE	Z	Standardized factor loading
<i>Attachment Anxiety</i>				
Anxiety Parcel 1	7.37	.35	21.03	.91***
Anxiety Parcel 2	7.48	.34	21.76	.94***
Anxiety Parcel 3	7.75	.34	22.61	.93***
<i>Attachment Avoidance</i>				
Avoidance Parcel 1	5.37	.30	18.01	.85***
Avoidance Parcel 2	5.66	.27	21.20	.92***
Avoidance Parcel 3	5.39	.30	17.80	.89***
<i>Perceived Discrimination</i>				
GALOSI VHI	4.41	.30	14.60	.84***
GALOSI RRO	1.45	.20	7.31	.63***
ASSIS-PD	4.75	.35	13.75	.77***
PPS	6.19	.75	8.21	.57***
<i>Depression</i>				
CESD	4.36	.24	18.17	.93***
DASS-D	4.06	.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; GALOSI VHI and RRO = Verbal Harassment and Intimidation and Restricted Rights and Opportunities of the Gay and Lesbian Oppressive Situation Inventory ; ASSIS-PD = Acculturative Stress Scale for International Students - Perceived Discrimination subscale; PPS = Perceived Prejudice Scale; CESD = Center for Epidemiological Studies – Depression Mood Scale; DASS-D = the Depression subscale from the Depression Anxiety and Stress Scales-Short Form.

*** $p < .001$

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 4). 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 5). The one exception is the relationship between attachment avoidance and perceived discrimination, which had a negative non-significant relationship ($r = -.02, p > .05$). It is also important to note that the correlation between attachment anxiety and perceived discrimination was significantly stronger than that of attachment avoidance and perceived discrimination ($p < .001$).

Table 5: 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. $N = 234$, *** $p < .001$

Structural Model for Testing Mediation Effects

A recent review of the 14 most commonly used methods for testing mediation effects found that the frequently used Baron and Kenny (1986) method had the lowest statistical power of those reviewed (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). MacKinnon et al. therefore recommended using the LISREL program to test for the indirect effect of the causal variable through the hypothesized mediator when testing for a mediation effect. The LISREL program, however, has been shown to calculate inaccurate estimates of the standard error of indirect effects (Mackinnon et al.) As such, Shrout and Bolger (2002) have suggested a bootstrap procedure to estimate indirect effects. A bootstrap procedure is an

empirical method of determining the distribution of parameter estimates in order to test the significance level of the indirect effects (Efron & Tibshirani, 1993). Therefore, the bootstrap procedure was used in the present study to test for the statistical significance of indirect effects.

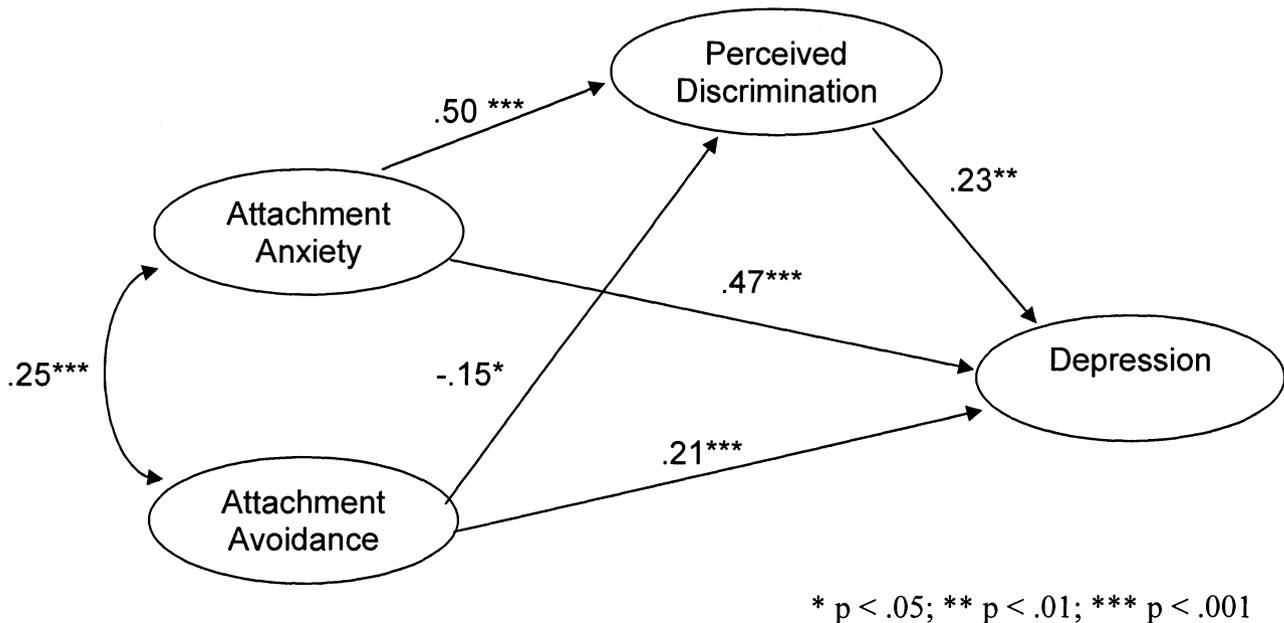


Figure 5: The Mediation Model

The structural model (see Figure 5) 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 6 and Figure 5) 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 can be stated, three alternative models were created to determine if the above structural model was the best fit to the data. The first alternative model (Model B) 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

Table 6: Chi-Square and Fit Indices among Different 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**
<i>Df</i>	48	49	49	50
CFI	.99	.97	.98	.96
RMSEA	.04	.03	.05	.08
CI for RMSEA	.01, .06	.05, .09	.03, .07	.07, .10
SRMR	.04	.08	.57	.12
Δ Standard χ^2 (<i>df</i>)		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 2), 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 paths 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 paths 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).

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. This implies that the path from attachment anxiety to depression significantly contributes 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. 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 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 in the bootstrap procedure. About 23% of the variance in perceived discrimination was explained by attachment anxiety and attachment avoidance, and 47% of the variance in depression was accounted by attachment and discrimination.

It is important to note that there is a potential suppression effect for the relationship between attachment avoidance and perceived discrimination, as we can observe that the zero-order correlation between attachment avoidance and perceived discrimination is not significant ($r = -.02, p > .05$, see Table 5) in the measurement model. However, this association becomes significant after attachment anxiety is added into the structural model ($r = -.15, p < .05$, see Figure 5). Thus 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 6). The result indicated that the relationship between attachment avoidance and perceived discrimination was not significant, $r = -.02, p > .05$. These findings suggested that when only attachment avoidance, perceived discrimination, and depression are included in the model (i.e., Figure 6), there was no mediation effect that could be concluded. However, when attachment anxiety is added to 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 5).

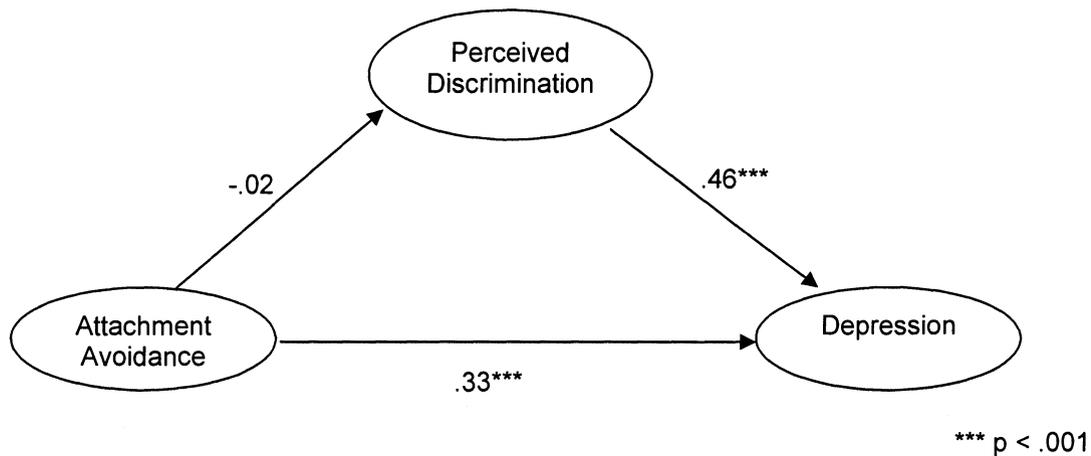


Figure 6: The Mediation Model for Attachment Avoidance Only

The Bootstrap Procedure for the Significant Level of Mediation Effects

The first step in the bootstrap method suggested by Shrout and Bolger (2002), is to create 1,000 bootstrap samples ($N = 234$) from the original dataset through random sampling with replacement. 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 confidence interval for 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, the lower

boundary of the confidence interval was very close to zero. To further explore the indirect effect of attachment avoidance on depression through perceived discrimination a second bootstrap procedure was run using the mediation model for attachment avoidance only (see Figure 6). The result again indicated the indirect effect from attachment avoidance through perceived discrimination to depression was not significant ($b = -.008$ (95% CI: $-.068, .043$), $\beta = -.02 \times .46 = -.01$). In other words, the result from the bootstrap procedure also indicated that when the mediation model includes only attachment avoidance, there is no significant indirect effect of attachment avoidance on depression through perceived discrimination. When the mediation model includes both attachment anxiety and avoidance (see Figure 5), the significant indirect effect for attachment avoidance is likely due to the presence of a suppression effect.

Test for Moderation

A hierarchical regression (Baron & Kenny, 1986) was used to test for moderation using SPSS 11 (see Table 7). Before analyses of the data began, the predictors (attachment anxiety, attachment avoidance, and perceived discrimination) were standardized to control for possible multicollinearity among predictors (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 \times perceived discrimination and (b) attachment avoidance \times 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 moderating variable (perceived discrimination) was entered into the second block of the regression. The overall model was significant at step two, as was the change in R^2 ($.17, p < .05$), indicating that

perceived discrimination predicted depression above and beyond two attachment dimensions (i.e., anxiety and avoidance). To evaluate for moderation effects, the interaction variables (i.e., attachment anxiety \times perceived discrimination and attachment avoidance \times perceived discrimination) were entered into the third block of the regression. If the paths from the interaction variables (i.e., attachment anxiety \times perceived discrimination or attachment avoidance \times perceived discrimination) to depression are significant, then evidence supports a moderating effect. The overall change R^2 (.01) did not reach significance, nor did the addition of either the interaction variables. Thus no moderation effect was detected for either attachment anxiety \times perceived discrimination or attachment avoidance \times perceived discrimination on depression.

Table 7: Hierarchical Multiple Regression Analyses Testing Moderating Effects of Attachment and Perceived Discrimination to Depression

Variable	B	SE B	β
Step 1: Predictors			
Attachment Anxiety	.30	.10	.17**
Attachment Avoidance	.93	.10	.54***
Step 2: Moderator			
Attachment Anxiety	.33	.10	.18***
Attachment Avoidance	.86	.10	.50***
Perceived Discrimination	.05	.02	.14**
Step 3: Interaction			
Attachment Anxiety	.35	.01	.19***
Attachment Avoidance	.85	.01	.49***
Perceived Discrimination	.05	.02	.13*
Attachment Anxiety \times Perceived Discrimination	.03	.02	.07
Attachment Avoidance \times Perceived Discrimination	.01	.02	.01

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

CHAPTER 5: DISCUSSION

Recent attachment literature has suggested that those with attachment anxiety and attachment avoidance experience and react to emotional distress in different ways (e.g., Fuendeling, 1998; Kobak & Sreery, 1988; Lopez & Brennan, 2000; Mikulincer, Shaver, & Pereg, 2003, Wei, et al., 2005). That is, those with attachment anxiety tend to hyperactivate in response to stress, while those with attachment avoidance tend to deactivate. The present findings partially support past literature and expand on it by including a gay male sample and using perceived discrimination as a potential mediator or moderator between attachment and depression.

The first important finding of the study is that attachment anxiety had a strong positive association with perceived discrimination. Moreover, this relationship was substantially stronger than that of attachment avoidance to perceived discrimination. It was originally hypothesized that attachment avoidance would have a small positive relationship with perceived discrimination. The result from the present study indicated that there was a non-significant zero-order correlation between attachment avoidance and perceived discrimination. It suggests that gay males with attachment avoidance may deny perceived discrimination. These results, although slightly different than hypothesized, are consistent with the theoretical underpinnings of the study. That is, prior research has suggested that those with attachment anxiety tend to respond to perceived threats with a hyperactivation strategy. These strategies result in an increased attention to perceived danger and a heightened emotional state. However, those with attachment avoidance tend to deactivate in response to perceived threats. These strategies work to detach the individual from the perceived stressor, thereby decreasing their negative emotional arousal. Thus, it makes sense that those with attachment anxiety would be more likely to recall perceived threats or discrimination than those with attachment avoidance. Empirically, these findings are consistent with past research suggesting that those with attachment avoidance are *less* likely

to notice and recall negative events (Fraley, et al., 2000; Hesse, 1999; Mikulincer & Orbach, 1995) while those with attachment anxiety are *more* likely to notice and recall negative events (Hesse, 1999; Mikulincer, 1998b; Mikulincer & Orbach, 1995; Woodhouse 2003). In sum, these results suggest that those with attachment anxiety are more likely to detect discrimination in their environment than those with attachment avoidance.

Another important finding is that perceived discrimination partially mediated the relationship between attachment anxiety and depression. That is, it appears that despite the use of a hyperactivation strategy (e.g., paying more attention to external cues) 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 et al., (2004) found that college students with attachment anxiety would be more vulnerable to depression through their lack of capacity for self-reinforcement and increased needs for validation and reassurance from external sources. 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 over attunement 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.

Unfortunately, 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 5), neither of these effects was present when attachment anxiety was removed from the model (see Figure 6). Thus, it appears that the larger association between attachment anxiety and perceived discrimination may be distorting the empirically measured relationships between attachment avoidance, perceived discrimination, and depression.

Therefore, additional research is needed before adequate conclusions and research implications can be stated.

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, attachment styles) 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, Ranier, McCreary, & Gowda, 1991), perhaps future studies can explore the proposed moderation model using a female sample or lesbian women.

A final noteworthy finding adds to the current attachment literature suggesting a strong and consistent relationship between insecure attachment and measures of psychological distress (e.g., Besser & Priel, 2003; Carnelley, Pietromonaco, & Jaffe, 1994; Murphy & Bates, 1997; Roberts, Gotlib, & Kassel, 1996; Wei et al., 2003; Wei et al., 2005). More specifically, consistent with past research, both attachment anxiety and attachment avoidance showed significant positive relationships with depression in a gay male population. In addition, a recent trend in the attachment literature has been to expand research models exploring the direct relationship between attachment and psychological distress to exploring mediating and moderating variables between these constructs (e.g., Wei et al., 2003, 2005). These models have a distinct advantage over studies of direct relationships since these intermediate variables can be used as the basis for potential counseling interventions. Likewise, 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 experience discrimination in

different ways. That is, those with attachment avoidance may be less likely to report perceived discrimination, while 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. Next the therapist might work with their client on developing alternative strategies such as finding social networks that are supportive of their lifestyle, or increasing their skills for internal validation of their sexual orientation.

Despite the potential implications of these findings there are some important limitations that should be noted. First, although several attempts were made to obtain a broad sample of participants, it is unclear if the participants in this study are representative of the general gay male population. It is possible that those who chose to respond differed in some way from those who did not decide to participate (e.g., degree of outness or gay identity development). Second, all of the measures used in this study were self-report questionnaires, presenting a monomethod bias. Future studies might use other methods (other's report, clinical interview, laboratory situation manipulation) to gain a different perspective on the variables measured. Another drawback of the study is the disproportionate number of Caucasian participants represented in the sample. It is possible that members of various

minority groups might respond to perceived discrimination in very different ways, especially due to their double minority status. Future research might explore how individuals of various ethnic and racial backgrounds might vary with regard to the proposed model. Finally, it is important to recognize that the just barely reaching significant indirect effect of attachment avoidance through perceived discrimination to depression may be due to a suppression effect. Thus, additional studies should be conducted before the significant indirect effect can be concluded. 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 evaluation process of those with attachment anxiety and avoidance to determine how they might differ in their actual discriminatory experiences.

Although perceived discrimination was found to be a mediator between attachment and depression, the relationship was only partially mediated. That means that other important mediators should be explored in this relationship. One such possible mediator is in-group support. Thoits (1985; Meyer 2003) suggested that support from an in-group provides opportunities for positive comparison 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 or gay identity development. Valence in this sense is one's evaluation, either positive or negative, of their own sexual identity. Past research has found an inverse relationship between negative sexual identity valence and psychological well-being (Allen, Woolfolk, Gara & Apter, 1999; Meyer, 2003). Others 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. A study of lesbian women provides an interesting contrast to the present study since lesbian women must manage double discrimination based on both gender and sexual orientation. Furthermore, close interpersonal relationships have been found to play an important role in lesbian women's levels of psychological distress. For instance, Otis and Skinner (1996) found that support of one's romantic partner significantly reduced depression in lesbian women. It is possible that the tendency of lesbian couples to more intensely rely on each other for emotional support might act as a buffer against perceived discrimination.

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 more effectively deal with perceived discrimination (e.g., positive self-talk) to decrease their levels of depression.

APPENDIX A: INVITATION EMAIL

Greetings:

My name is Robyn Zakalik, and I am Doctoral Student in the Department of Psychology at Iowa State University. I am conducting a research project related to experiences of gay men under the supervision of Dr. Meifen Wei at Iowa State. I would greatly appreciate your help by completing an online survey. It will take approximately 10-20 minutes to complete. You must be at least 18 years old to participate in this study.

In return for your help, you will be entered into a drawing for a cash prize of \$50 (odd of winning is approximately 1 in 200).

If you are interested in participating in this research study, please click (or copy and paste) the link below

<http://www.surveymonkey.com/s.asp?u=2241495187>

The drawing will be held at the conclusion of this study (approximately the end of July). The winner will be notified at that time via their contact information provided.

To find out more about this research, please read the following information.

You have been contacted through your connection with an LGBT organization, list serve, chat room, friend, or otherwise. The University Institutional Research Board (IRB) at Iowa State University has approved this survey. Your answers are confidential and will remain anonymous. It is hoped that the information gained in this study will provide valuable information regarding how to help gay males who have experienced discrimination.

Any questions about the survey can be addressed to Robyn Zakalik, Department of Psychology, robynz@iastate.edu, or Dr. Meifen Wei, Department of Psychology, wei@iastate.edu.

Thank you for participating and good luck in the drawing!

Robyn A. Zakalik
Doctoral Student in Counseling Psychology
Iowa State University
robynz@iastate.edu

APPENDIX B-1: INFORMED CONSENT–WEB SURVEY

Greetings,

My name is Robyn Zakalik, and I am a graduate student working on my thesis in the Counseling Psychology Program at Iowa State University

If you are 18 years of age or older, live in the United States, and identify as a gay male, please consider participating in this study regarding discrimination experiences (IRB #04-248). I am interested in better understanding the associations among relationships, discrimination experiences, and emotions in gay men. If you agree to participate in this study, your participation will take approximately 10-20 minutes.

While participating in this study you may experience some mild personal discomfort when responding to personal self-reflective questions related to your personal experiences of discrimination. However, your participation will involve minimal risks and *you can withdraw from the study at any time by closing your web browser*. Although there will be no direct benefit to you, it is hoped that the information gained in this study will benefit society through developing a more complete, understanding of how discrimination is experienced in the gay community.

To thank you for your participation, at the completion of this study you will have the opportunity to enter your name into a drawing for a cash prize of \$50 (odd of winning is approximately 1/200). The winner will be randomly selected from all entries at the conclusion of this study (approximately the end of July). At that time Robyn Zakalik will contact the winner with further instructions on how to redeem the prize.

To ensure your confidentiality to the extent permitted by law, the following measures will be taken. All survey responses will be kept separate from the contact information provided for the drawing. Furthermore, no one will have access to the contact information except for the primary investigators of this project. All names and contact information will be deleted from the files once all data has been collected (approximately the end of July). Finally, since names and contact information will be kept separate from individual responses, there will be no way to trace the responses back to individual participants. If the results are published, it will be the results from the whole group.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study. For further information about the study contact Robyn Zakalik at robynz@iastate.edu, 515-294-8724, or Dr. Meifen Wei, 515-294-7534, wei@iastate.edu. If you have any questions about the rights of research subjects or research-related injury, please contact the Human Subjects Research Office, 2810 Beardshear Hall, 515-294-4566; austingr@iastate.edu or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, 515-294-3115; dament@iastate.edu.

Your consent to participate will be indicated by completing the survey.

To indicate your consent to participate and begin the survey, please click the “I accept” button below.

If you do not wish to participate please close this web browser.

Thank you,
Robyn Zakalik

APPENDIX B-2: INFORMED CONSENT– PAPER SURVEY

Greetings,

My name is Robyn Zakalik, and I am a graduate student working on my thesis in the Counseling Psychology Program at Iowa State University

If you are 18 years of age or older, live in the United States, and identify as a gay male, please consider participating in this study regarding discrimination experiences (IRB #04-248). I am interested in better understanding the associations among relationships, discrimination experiences, and emotions in gay men. If you agree to participate in this study, your participation will take approximately 20-30 minutes.

While participating in this study you may experience some mild personal discomfort when responding to personal self-reflective questions related to your personal experiences of discrimination. However, your participation will involve minimal risks and *you can withdraw from the study at any time*. Although there will be no direct benefit to you, it is hoped that the information gained in this study will benefit society through developing a more complete, understanding of how discrimination is experienced in the gay community.

To thank you for your participation, at the completion of this study you will have the opportunity to enter your name into a drawing for a cash prize of \$50 (odd of winning is approximately 1/200). The winner will be randomly selected from all entries at the conclusion of this study (approximately the end of July). At that time Robyn Zakalik will contact the winner with further instructions on how to redeem the prize.

To ensure confidentiality to the extent permitted by law, the following measures will be taken. All survey responses will be kept separate from the contact information provided for the drawing. Furthermore, no one will have access to the contact information except for the primary investigators of this project. All names and contact information will be deleted from the files once all data is collected (approximately the end of July). Finally, since names and contact information will be kept separate from individual responses, there will be no way to trace the responses back to individual participants. If the results are published, it will be the results from the whole group.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study. For further information about the study contact Robyn Zakalik at robynz@iastate.edu, 515-294-8724, or Dr. Meifen Wei, 515-294-7534, wei@iastate.edu. If you have any questions about the rights of research subjects or research-related injury, please contact the Human Subjects Research Office, 2810 Beardshear Hall, 515-294-4566; austingr@iastate.edu or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, 515-294-3115; dament@iastate.edu.

Your consent to participate will be indicated by completing the survey.

If you do not wish to participate please return this packet to the experimenter.

Thank you, Robyn Zakalik

APPENDIX C: SURVEY

ECRS

Directions: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it.

- | | | | | | | |
|-------------------|---|---|---------------|---|---|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Disagree Strongly | | | Neutral/Mixed | | | Agree Strongly |
1. I prefer not to show a partner how I feel deep down.
 2. I worry about being abandoned.
 3. I am very comfortable being close to romantic partners.
 4. I worry a lot about my relationships.
 5. Just when my partner starts to get close to me I find myself pulling away.
 6. I worry that romantic partners won't care about me as much as I care about them.
 7. I get uncomfortable when a romantic partner wants to be very close.
 8. I worry a fair amount about losing my partner.
 9. I don't feel comfortable opening up to romantic partners.
 10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
 11. I want to get close to my partner, but I keep pulling back.
 12. I often want to merge completely with romantic partners, and this sometimes scares them away.
 13. I am nervous when partners get too close to me.
 14. I worry about being alone.
 15. I feel comfortable sharing my private thoughts and feelings with my partner.
 16. My desire to be very close sometimes scares people away.
 17. I try to avoid getting too close to my partner.
 18. I need a lot of reassurance that I am loved by my partner.
 19. I find it relatively easy to get close to my partner.
 20. Sometimes I feel that I force my partners to show more feeling, more commitment.
 21. I find it difficult to allow myself to depend on romantic partners.
 22. I do not often worry about being abandoned.
 23. I prefer not to be too close to romantic partners.
 24. If I can't get my partner to show interest in me, I get upset or angry.
 25. I tell my partner just about everything.
 26. I find that my partner(s) don't want to get as close as I would like.
 27. I usually discuss my problems and concerns with my partner.
 28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.
 29. I feel comfortable depending on romantic partners.
 30. I get frustrated when my partner is not around as much as I would like.
 31. I don't mind asking romantic partners for comfort, advice, or help.
 32. I get frustrated if romantic partners are not available when I need them.
 33. Please leave this question blank.
 34. It helps to turn to my romantic partner in times of need.
 35. When romantic partners disapprove of me, I feel really bad about myself.
 36. I turn to my partner for many things, including comfort and reassurance.
 37. I resent it when my partner spends time away from me.

GALOSI-F

Directions: Gay men often encounter discrimination, prejudice, and negative stereotypes based on their sexual orientation. Below are situations that you may have encountered. Please think about each situation and how often you have experienced it. Use the following scales when responding to these situations.

Never	Rarely	Sometimes	Often	Almost Always
0	1	2	3	4

RRO

1. Advancement opportunities at work have been limited because of my gayness
2. I have been denied employment because of my gayness
3. I have been denied housing because of my gayness.

VHI

1. I have had anti-gay remarks directed at me.
2. I have heard people telling gay-bashing jokes.
3. Members of my biological family have made anti-gay remarks.
4. People have treated me differently if they think I am gay.
5. Please mark "4" for this question.
6. I have seen anti-gay graffiti in public places.
7. I have heard people making negative remarks about gays.
8. I have seen people tell lesbians that all they need is a good man.

PPS

Directions: Indicate on a scale from 1 to 5 how much prejudice, or anti-GLB sentiment, you perceive in each of the following areas, using the following rating scale:

No Prejudice	Low Degree of Prejudice	Some Degree of Prejudice	Moderate Degree of Prejudice	Very High Degree of Prejudice	NA- Not Applicable, No Contact With This Group
1	2	3	4	5	NA

1. Your children
2. Your partner's children
3. Your parents
4. Your partner's parents
5. Your siblings
6. Your partner's siblings
7. Your extended family
8. Your partners extended family
9. Lesbian, bisexual, and/or gay friends
10. Heterosexual friends
11. Lesbian/bisexual/gay community
12. Local community, neighbors
13. Acquaintances through church or religious groups
14. Coworkers
15. Business associates
16. Schoolmates
17. Professors/teachers at school
18. Health care workers (doctors, nurses, therapists, etc.)

PD

Directions: Please review the following statements and indicate how strongly you agree with that statement, as it pertains to experiences related to your *sexual orientation*.

Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	2	3	4	5

1. I am treated differently in social situations.
2. Others are biased toward me.
3. Many opportunities are denied to me.
4. I feel that I receive unequal treatment.
5. Please mark "1" for this question.
6. I am denied what I deserve.
7. I feel that gay people are discriminated against.
8. I am treated differently because of my sexual orientation.

DASS-D

Directions: Please read each statement and select a number 0,1,2, or 3 which indicates how much the statement applied to you over *the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

Did not apply to me at all	Applied to me to some degree, or some of the time	Applied to me a considerable degree, or a good part of the time	Applied to me very much or, most of the time
0	1	2	3

1. I felt that life was meaningless
2. I felt that I had nothing to look forward to
3. I couldn't seem to experience any positive feeling at all
4. I was unable to become enthusiastic about anything
5. I felt that I wasn't much as a person
6. I felt down-hearted and blue
7. I found it difficult to work up the initiative to do things

CES-D

Directions: Using the scale below, indicate the number which best describes how often you felt or behaved this way – DURING THE PAST WEEK.

Hardly ever or never	Some of the time	Much or most of the time
0	1	2

1. I did not feel like eating; my appetite was poor.
2. I felt depressed.
3. I felt everything I did was an effort.
4. My sleep was restless.
5. I was happy.
6. Please leave this question blank
7. I felt lonely.
8. People were unfriendly.
9. I enjoyed life
10. I felt sad.
11. I felt that people disliked me.
12. I could not get "going".

DEMOGRAPHICS

Age _____
 Gender: Male Female Transgendered
 City _____ (optional)
 State _____ (optional)
 Average Yearly Income _____ (optional)
 Ethnic Background _____ (optional)
 Religion _____ (optional)

Contact Source:
 a) list serve
 Specify: _____
 b) other
 Specify: _____

Please indicate your degree of attraction to same or opposite gender using the scale below:

Exclusively attracted to same gender				Equally attracted to both genders					Exclusively attracted to opposite gender
1	2	3	4	5	6	7	8	9	10

Please indicate your dating history to same or opposite gender using the scale below:

Exclusively dated people of the same gender				Equally dated people from each gender					Exclusively dated people of the opposite gender
1	2	3	4	5	6	7	8	9	10

I am out to the majority of the following groups/individuals

Friends T F
 Family T F
 Co-workers T F

APPENDIX D-1: INCENTIVE ENTRY FORM–WEB SURVEY

Thank you for participating in this study. You may now enter your name and contact information (i.e., email address or phone number) into a drawing for a \$50 cash prize (odd of winning is approximately 1/200). To ensure your confidentiality the following measures will be taken, 1) your contact information will be stored separate from your answers, 2) only the primary investigators of this project will have access to your contact information, 3) the information will not be reviewed until the end of the project, and 4) the entries will be re-ordered so they cannot be matched up to your answers. The drawing for prizes will occur once all data has been collected (approximately at the end of July). I will notify the winner by the contact information submitted with further instructions on how to claim the prize.

If you have any questions, please contact Robyn Zakalik at robynz@iastate.edu or Dr. Meifen Wei at wei@iastate.edu.

Please enter your contact information

Name: _____

Email: _____

Phone number: _____

APPENDIX D-2: INCENTIVE ENTRY FROM-PAPER SURVEY

Thank you for participating in this study. You may now enter your name into a drawing for a \$50 cash prize (odd of is winning approximately 1/200). To do so, please email me at robynz@iastate.edu with your contact information. You may also return this form with your contact information on it to the address listed in the “Summary” below. To ensure your confidentiality the following measures will be taken, 1) there will be no way to connect your contact information to your answers, and 2) only the primary investigators of this project will have access to your contact information 3) your contact information will be destroyed once the prize has been claimed. The drawing for prizes will occur once all data has been collected (approximately the end of July). I will notify the winner by the contact information provided with further instructions on how to claim the prize.

If you have any questions, please contact Robyn Zakalik at robynz@iastate.edu or Dr. Meifen Wei at wei@iastate.edu.

Summary:

To enter please email robynz@iastate.edu with your contact information: name and email address or phone number

Or

Send this form back to Robyn Zakalik with your contact information (name and email address or phone number) included, to the following address:

Robyn Zakalik
W112 Lagomarcino Hall
Ames, IA 50014

APPENDIX E: DEBRIEFING FORM

Thank you very much for participating in this study. Your responses will help us to have a more complete understanding of how discrimination is experienced in the gay community. The prize drawing will occur once all data has been collected (approximately the end of July). I will notify the winner by the contact information provided to give further instructions on how to claim the prize.

If you have any questions, please contact Robyn Zakalik, at robynz@iastate.edu or Dr. Meifen Wei at wei@iastate.edu.

THANK YOU!

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FOOTNOTE

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 model (i.e., 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 models.

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