

Effects of attachment and self-esteem on perceptions of infidelity in gay men.

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Dedication

To Jer and Daius, my constant objects.

Acknowledgements

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Abstract

Research indicates that infidelity is one of the primary reasons for relationship dissolution. There are several theories surrounding cheating behavior, but none around how one perceives these acts. Attachment theory and self-esteem have previously been used to explore infidelity in straight populations, but minimally in gay populations. Additionally, cheating behavior and perceptions of cheating have been extensively investigated in straight relationships, but have not been explored in gay relationships. The current study looked to develop a measure to assess perceptions of cheating in gay males, and examined how attachment and self-esteem impacted these perceptions. Participants were 150 males with a mean age of 26.75 ($SD = 10.56$), recruited from a national crowdsourcing pool and from a large southeastern university, who exclusively identified as gay. Results illuminated 5 factors in the Exploratory Factor Analysis of the cheating measure, including Physical, Unequivocal/Active, Equivocal/Passive, Honesty, and Technology-Related Acts. Comparisons of attachment and self-esteem to each factor found that there were no differences in perceptions of cheating with differing attachment styles, but increased self-esteem in conjunction with a secure attachment style lowered one's tolerance for cheating. Additionally, exploratory analyses revealed that tolerance for physical acts of infidelity increased with age. Implications for how technology may relate to infidelity and perceptions of infidelity for gay men are examined. Limitations and future directions are discussed.

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Chapter 1

Introduction

Infidelity was historically considered the breaking of rules surrounding sexual fidelity in romantic relationships (Wilson, et. al, 2011). The definition has changed over time to include more behaviors that relate to non-sexual physical and emotional acts as well. It is well known that infidelity can have short and long-term negative consequences on relationship wellness, and this is a relatively common occurrence. International reviews on incidence rates show great variability among men and women and report that anywhere from 5% - 83% of individuals are unfaithful among partnered or married individuals. Men consistently outnumbered women in in physical, emotional, and online cheating (Luo et al., 2010). Conservative estimates of infidelity in marriages indicate a prevalence rate between 20-25% over a lifetime, with approximately 5% of these individuals having engaged in infidelity within the past year (Wiederman, 1997). Studies of prevalence rates are afflicted with methodological issues though, as infidelity reporting is highly prejudiced by the stigma associated with cheating, social pressures, and retrospective reporting (Hall & Fincham, 2005). Not surprisingly, research shows that infidelity is the most common reason for the dissolution of relationships (Hall & Fincham, 2005), and can lead to other issues such as major depressive episodes and substance abuse (Cano & O'Leary 2000). Infidelity is viewed as one of the most destructive events for a relationship, and the most challenging to treat in therapy (Whisman, 1997). Given the pervasiveness and negative effects of infidelity, the body of literature on correlates and factors that contribute to infidelity has grown considerably.

There is significant research on infidelity in different-sex couples that illuminates the negative consequences to individuals and the couple. In a recent study of correlates between affairs and depression, researchers found that individuals who discovered their partner had an affair had higher rates of major depressive episodes compared to individuals who had not discovered an affair (Whisman, 2016). Additionally, Cano and O’Leary found that an occurrence of a humiliating marital event significantly increased the risk for a major depressive episode in women, even after controlling for other external contributing factors (2000). In a study that assessed male perceptions of norms with aggression toward dating partners, researchers found that men who watched videos with dating violence reported that the action was more acceptable when they were told the female had been unfaithful (Witte & Mulla, 2016). Furthermore, perceived risk of female infidelity has been found to increase and predict male partner-directed violence (Cousins & Gangestad, 2007; Kaighobadi & Shackelford, 2009), and infidelity has been found to be a trigger for intimate partner violence (Nemeth et al., 2012). Numerous studies have also linked increased substance abuse as a contributing factor for risky sexual behavior and infidelity, in addition to being a precipitating factor for partner violence (Scott, et. al., 2013).

Infidelity also impacts other areas of relationship wellness and functioning. Abrahamson et al. (2011) found that individuals who try to reconcile after the discovery of an affair often experience hypervigilant monitoring of behaviors of the individual who participated in the affair, along with the internal monitoring and questioning of behavior by the person who cheated. Many partners view infidelity as a traumatic event, and have difficulties trusting others in non-romantic relationships or within new romantic

relationships (Heintzelman, 2014). Others become vengeful and hostile toward the offender, or even self-harm (Shakelford, Leblanc & Drass, 2000). Reviews of suicides and homicides of women who were previously victims of domestic violence found that suspicion of infidelity was the primary factor in altercations that preceded harm toward self or other (Adinkrah, 2014). The impact of parental infidelity on children has been explored as well, and research indicates that the children exposed to conflict around infidelity later have lower levels of relationship trust, and often experience conflict surrounding loyalty in their own intimate relationships (Schmidt, Green & Prouty, 2016).

Although there is a sizeable body of literature on the prevalence and negative impact of infidelity, there is very little research examining what individuals perceive as cheating behavior and how that impacts the relationship. Perceptions of infidelity have been minimally explored in reference to online, social media, and dating website use by individuals in relationships, and even less so in reference to overall relationship functioning. There is one known study that shows that individuals who have cheated previously in relationships are often more accepting and forgiving of fictional characters who are portrayed as being unfaithful (Sharpe, Walters & Goren 2013), but there appears to be no available research examining the extent to which individuals consider various behaviors as cheating within their own romantic relationships. It would be reasonable to expect, then, that individuals with previous cheating behaviors may have more permissive perceptions of cheating overall.

Even less well examined is our understanding of infidelity and perceptions of cheating in same-sex relationships. There is minimal existing research on same-sex relationship factors explored within gay males. The following will explore what is known

about infidelity in gay relationships, and the factors that are relevant to understanding this construct. One unique aspect of some same-sex relationships is the expectancy surrounding monogamy within gay male couples. Though the desire for exclusivity may be present in relationships, most research shows that a large proportion of them have agreements that they can engage in external sexual relationships, or have an “open” relationship (Hoff & Beougher, 2010). Some early research suggested that open relationships led to dissatisfaction and anger in the primary relationship, whereas more recent studies suggest there are no differences in relationship quality between open and monogamous relationships (Bell & Weinberg, 1978; LaSalla, 2004). Moreover, research suggests that individuals in heterosexual relationships may experience greater distress in response to emotional and physical infidelity compared to individuals in same- or bisexual relationships (Frederick & Fales, 2016). Similarly, Carpenter (2012) found that there were differences among gay and straight relationships, finding that gay individuals reported higher distress in response to emotional versus physical infidelity, though the reported distress was still lower than those reported in straight relationships. Furthermore, Leeker and Carlozzi (2014) found that gay individuals reported much lower distress surrounding physical and emotional infidelity compared to their straight counterparts. While this research sheds light on reactions to what is often considered cheating behavior, we know very little about what is perceived as infidelity in gay relationships. Given the findings above, it may be that many individuals in same-sex relationships perceive some behaviors as not falling into the domain of infidelity. Further complicating this issue is that lack of sufficient measures to assess perceptions of infidelity in gay men (discussed below).

The lack of research in this area is unfortunate, especially given the importance of understanding factors around perceptions of infidelity in same-sex relationships so individuals can have healthier relationships, and therapists can better address issues after an event has occurred. Two such factors that may play an important role in the perceptions of infidelity among gay men are attachment and self-esteem. If attachment style impacts how one perceives certain acts of infidelity, an awareness of these differences can help prevent future conflict or allow for better discussion around the subject. Additionally, if an individual's self-esteem contributes to one's perceptions of infidelity, this knowledge can be used to facilitate more discussion around the healing process following cheating. There are significant clinical implications to understanding conflict around these perceptions, as one member of a couple may find a certain act as cheating where the other may not. When this occurs, therapists' understanding of these differences can better help in guiding how one initially addresses these perceptions with their partner, and also how each individual copes and recovers after an infidelity event has occurred. This project aims to further examine this understudied group of individuals so we can gain better insight for prevention and treatment of infidelity in this population. The following sections will review broad theories and existing research on infidelity, discuss how these theories may apply to gay men, review available research on infidelity among gay men, and discuss how attachment and self-esteem may be important to understanding infidelity in gay men.

Theories on Infidelity

There are several conceptual models focused on relationship infidelity. The Need Fulfillment Model (Drigotas & Rusbult, 1992) suggests that individuals may have areas

of need that are unmet in an intimate relationship, such as sexual, companionship, intellectual, intimacy, emotional connection, security, and self-worth. When these needs are unmet, there may be a greater chance that one might be at risk to fulfill the need outside of the relationship. The Investment Model focuses on elements of satisfaction, investment loss, and alternative quality (e.g., quality of relationships beyond the partner) and their impact on commitment to a relationship. Higher levels of satisfaction and investments to the committed relationship serve as protective factors from infidelity, whereas higher levels of alternative quality could lead to lower commitment to the relationship (Drigotas & Barta, 2001). The Deficit Model focuses on dissatisfaction within the relationship. Similar to Rusbult's notions of satisfaction and alternative quality, this model suggests that infidelity is more likely when individuals are unhappy in a relationship, resulting in other potential partners appearing desirable (Thompson, 1984). When individuals feel unsupported or rejected, or have deficits in sexual performance or satisfaction in a relationship, the emotional and sexual deficits may seek to fulfill these insufficiencies in another partner. Another model that explains infidelity is a Personal Growth Model, which states that individuals can enhance their sense of self and learn more about their self through infidelity (Boekhout, Hendrick, & Hendrick, 2000). When relationships become stagnant or do not encourage an individual's own development, some may turn to infidelity as an outlet to partake in different activities that allow for learning and growth. This model suggests that independence and a sense of adventure may factor into an individual's decision to have an affair.

There appear to be sex differences in perceptions of emotional versus physical infidelity and it is theorized that there may be evolutionary roots to these differences.

Evolutionary theory speculates that due to sexual selection pressures, males and females have developed differing sensitivities to sexual versus emotional infidelity (Tagler & Jeffers, 2013). A multiple study analysis of emotional and physical infidelity indicated that males often display more distress in response to physical or sexual infidelity, where females had a tendency to show comparatively greater distress in response to emotional infidelity (Miller & Maner, 2009). These differentiated reactions based on sex may be based on the gender-specific challenges of reproduction. For males, the uncertainty of paternity may cause a male to be particularly distressed about sexual infidelity, as it could lead to resources and efforts expended on another male's offspring. Because females have more certainty in their maternity, sexual infidelity has less of a consequence for them. Females, however, face emotional infidelity as a greater threat because their resources could be directed at another woman and thus risk the prospect that those long-term resources are diverted to the other woman and her children (Miller & Maner, 2009). This theory, however, does not explain infidelity distress in gay relationships.

Baucom, Snyder, and Gordon (2009) suggest that in addition to the previously mentioned factors that may lead to an affair, there are more subtle factors that may play a role as well. Power struggles within a couple, differing long-term views of relationships, and gender roles can increase the probability that an affair could develop. It is also suggested that persistent stress, even in healthy relationships, increases the susceptibility of an affair. Additionally, researchers note that there are numerous individual factors that foster greater receptiveness to affairs. Such factors as insecurity, impulsivity, poor judgment, neuroticism, and intolerance to emotional distress can contribute to the tendency to have an affair (Baucom et al., 2009). Other research reports that individuals

may cheat to gain friendship, attention, extramarital support, or even due to repulsion within their own relationship (Jeanfreau, Jurich, & Mong, 2014). These theories capture the multidimensional complexity of infidelity, and help explain individual and environmental factors that contribute to acts of infidelity. Nearly all of the theories appear to touch on a common factor, however, which relates to issues around connectedness. The ability to connect may be rooted in one's attachment style, which will be discussed in detail below, especially how it may relate to perceptions of infidelity in gay men.

Though the aforementioned models touch on many of the emotional components that individuals report in what contributed to an affair, and we can gain a general idea of factors that typically lead to affairs, it does not capture the additional complexities that may exist in gay relationships and why affairs happen. Furthermore, these theories do not account for differences in emotional and physical needs of gay men, and how those would factor into the susceptibility of an affair. There are no sex differences within gay relationships, nor would the evolutionary perspectives necessarily apply to the reproductive theories of infidelity. Additionally, existing theories do not consider cultural factors that play into gay relationships (i.e., oppression, gender conflict), and they also make heteronormative assumptions about relationship structure (i.e. monogamy, sex roles). Though it is possible that some of the infidelity models explain some of the needs of individuals in any type of relationship, it does not seem that they can fully summarize the differences that exist within gay relationships.

In addition to the theoretical issues noted above, our understanding of infidelity, especially among gay men, is further complicated by limitations in measurement. When investigated, perceptions of infidelity are generally measured qualitatively, with infidelity

examples provided for research participants to rate their level of distress over imagined acts of cheating. Wilson et al. (2011) developed a Perceptions of Dating Infidelity Scale (PDIS) that measured how individuals viewed a list of behaviors. They found that three factors emerged related to ambiguous, explicit, and deceptive behaviors, and found gender differences among the perceptions. It was found that males perceived the explicit (physical) acts as cheating, whereas females reported the ambiguous and deceptive (emotional/lying) behaviors as cheating. This measure was investigated on an exclusively heterosexual college sample. A follow up study on older adults in college revealed similar findings (Mattingly et al., 2010), but did not account for sexual orientation. Studies that measure infidelity have provided some interesting findings of perceptions and how acts are commonly viewed, but they lack the ability to account for perceptions within gay relationships. Known measures capture basic cheating perceptions among straight participants, but lacked some of the diversity of behaviors that are often perceived as cheating that are less explicit or are related to technology use. This lack of measurement necessitated the development of an infidelity measure, that was developed and tested in the current study so that a range of cheating behaviors could be better understood within the gay population. It seems reasonable to expect that factors related to physical, emotional, and deceptive acts will emerge, but given the novelty of this research area, other factors may also emerge from the data.

Attachment

Research investigating the effects of primary caregiver attachment in infancy was pioneered by John Bowlby in the late 1960s, and has since gained vast attention in exploring how these early attachments impact adult romantic relationships later in life.

His theory of attachment was rooted in evolutionary philosophies, claiming that infants who adapted their behavior and emotion to best fit their caregiver's temperament had a higher chance of being protected and thus, would survive and later reproduce (Simpson, 1990). We now know how impactful early attachment is on how individuals function in romantic relationships, as Bowlby and other pioneers also focused on how this influences close relationships across a lifespan. Early life experiences determine how we trust our worth and how we trust others. This can have significant results in how we form and function in relationships.

As attachment theory developed, researchers theorized four styles of attachment based on how individuals view self and others. Secure, preoccupied, fearful/anxious, and dismissive/avoidant are styles that represent how one views their own value and how available others seem (Bartholomew & Horowitz, 1991). Individuals with a secure attachment style have low anxiety and avoidance levels. Those with preoccupied attachment styles have low avoidance and high attachment anxiety. Fearful/anxious individuals have high anxiety and avoidance, and dismissive/avoidant have high avoidance and low anxiety (Bartholomew & Horowitz, 1991). For the purpose of this study, these attachment styles will be referred to as secure, preoccupied, anxious, and avoidant. To better understand the differences of these attachment styles, it is important to know what qualities are present in each style. It is suggested that high attachment anxiety leads to a negative representation of the self and lower self-worth. These individuals exhibit higher fears of rejection, emotional dependence, and obsessiveness (Brennan, Clark & Shaver, 1998). Conversely, high attachment avoidance leads to a negative representation of others and mistrust of others. These individuals exhibit

discomfort with closeness, are dispassionate, and have a high need for independence (Collins & Read, 1990).

Studies delineating these different attachments styles have sought to comprehend how early attachment experiences can predict an individual's functioning in adult relationships, especially romantic ones. There are vast amounts of research that illuminate the impact of attachment on relationship functioning and satisfaction (Mohr, et. al. 2013; Starks & Parsons, 2013; Wang, Schale & Broz, 2010). The summaries of these studies suggest that securely attached individuals have higher relationship satisfaction and functioning, whereas avoidantly and anxiously attached individuals have difficulties in communication, closeness, sex, need fulfillment, and emotion regulation. Additionally, individuals with avoidant and anxious attachment styles are more susceptible to infidelity, or involved with more than one partner at a time (Ridge & Feeney, 1998). In theory, these ideas should hold true among all sexual orientations, but there is not enough evidence to back that claim. It is apparent and informative of how these traits impact romantic relationships, so it is important to also investigate this area in less researched groups such as gay men.

There is an emerging body of research on attachment in gay relationships that has developed in recent years. One of the earliest investigators, Colgan (1987), was the first to suggest that gay men's attachment style was not only formed by their parental relationships, but from negative reactions from peers and parents about their sexual orientation and gender non-conformity during childhood. He argued that these early experiences could contribute to some highly dependent and avoidant attachment styles, thus giving way to a better understanding of preoccupied attachment in gay males.

However, very little is still known about preoccupied attachment in gay males, but it is interesting to note the sample size of preoccupied attachment in this study compared to other styles. Interestingly, gay men reported more positive early relationships with their mothers, but their attachment style was influenced by interactions with family and peers surrounding their “coming out” during childhood (Ridge & Feeney, 1998). Other bodies of research noting the significant connection between romantic attachment and relationship quality have primarily been done on heterosexual samples, and only a few studies have looked at these variables in gay people (Feeney, 2008). Though gender differences and relationship functioning has been researched extensively, it is unclear whether the data can be generalized to gay men as well. Research has suggested there are many similarities between straight and gay individuals in regard to relationship satisfaction, quality, and attachment security (Peplau & Fingerhut, 2007).

Furthermore, some research suggests that relationship satisfaction is unrelated to sexual exclusivity in gay male relationships, but with mixed reviews. Some research shows that gay men have lower levels of avoidance and higher anxiety compared to lesbians, which is the reverse of their straight counterparts. O’Neil (2008) explained that gay men may experience high levels of anxiety because of constricting sex roles, or the higher incidence of non-exclusivity in sexual relationships (Mohr et al., 2013). It is speculated that gay men have lower avoidance levels as well due to the flexibility they’re afforded with gender role norms, thus freeing them from certain discomforts with intimacy (O’Neil, 2008). On the other hand, other studies suggest that gay male relationships relatively mirror straight relationships in attachment insecurity and the connection between sexual exclusivity and relationship satisfaction (Kurdek, 1997,

2002). There are numerous studies exploring the framework of consensual non-monogamy in gay relationships, with non-definitive results because of the individual differences and rules that exist within each relationship. Still, studies suggest that consensual non-monogamy with strict rules around sexual behaviors outside of the committed relationship report the highest relationship satisfaction among gay males (Hauptert et al., 2016; Mogilski, et al., 2017; Moors et al., 2015; Van Eeden, et al., 2016). Though this study did not investigate consensual non-monogamy, the exploration into attachment and perceptions of cheating may relate to factors that determine overall relationship satisfaction. These studies explore cheating behaviors, but not the perceptions surrounding the behaviors and how they relate to attachment.

There is limited research examining how attachment style may be related to infidelity, though available research suggests a notable link. Research suggests that heterosexual individuals with anxious, avoidant, or preoccupied attachment styles reported participating in and being victim to higher incidents of infidelity (Allen & Baucom, 2004; Blow & Harnett, 2005; Bogaert & Savada, 2002). Therefore, it could be expected that individuals with anxious and avoidant attachment styles may perceive more acts as cheating, since they experience it more often. Furthermore, studies have shown that relationship satisfaction can be highly influenced by infidelity and attachment style, as well as other factors related to relationship health such as commitment, sexual satisfaction, conflict resolution, and intimacy (Collins & Read 1990; Shi, 2003; Simpson, 1990). Still, there are gaps in the literature about how infidelity and attachment style relate to overall relationship wellness in gay relationships. Attachment theory was chosen

due to the high correlates in heterosexual samples to infidelity and relationship satisfaction, to further investigate whether this was true for gay individuals as well.

Self-Esteem

A final element that is critical to explore in perception of infidelity is one's self-esteem. Conceptually, self-esteem is the level in which an individual cares for or loves one's self. There is a body of literature that demonstrates how the higher one's self-esteem, the more positively they evaluate their romantic relationships as well (Murray, 2006). Further studies show that individuals who love themselves may have greater relationship satisfaction compared to those who have lower love for themselves (Ziegler-Hill, Fulton, & McLemore, 2010). There is a well-established relationship between self-esteem and attachment, however, it is important to distinguish the differences between them. Where self-esteem is determined by one's perception of their self, attachment style, as noted above, encompasses how one perceives their self and how they perceive others. Since attachment is formed in early childhood, and self-esteem is more developed during adolescence, it could be suggested that attachment style influences self-esteem but to an unknown extent (Huttermann et al, 2015). With regard to the relationship between the two, it has been found that securely attached individuals consistently report higher self-esteem (Armitage & Harris, 2006; Collins & Read, 1990; Gomez & McLaren 2007), while those with anxious and avoidant attachment styles are associated with low self-esteem (Foster, Kernis, & Goldman, 2007; Wu, 2009). It is expected that one's overall self-esteem level would have an effect on attachment security, perceptions, and participation in cheating as well. Zeigler-Hill et al. (2012) measured self-esteem and perceived infidelity in a study of partnered males and found that individuals with low self-esteem reported less strategies

to keep their partner, in addition to a higher perceived likelihood that their partner would cheat. This finding further suggests that lower self-esteem likely impacts how one perceives their relationships. So, this suggests that lower self-esteem would be related to avoidant and anxious attachment styles, in addition to higher perceptions of partner infidelity. This further suggests that higher self-esteem and secure attachment may moderate perceptions of infidelity (e.g., be more/less tolerant), as studies suggest that these factors allow for greater trust and security in relationships (Gorrese & Ruggieri, 2013).

Chapter 2

Rationale and Present Study

Theories on infidelity suggest that there are different reasons an individual would cheat, which is influenced by need and their ability to connect. There are measures that provide insight into perceptions of cheating in straight relationships, but not tailored to the gay community. We would expect that there would be some similar perceptions of cheating in gay males, but it is possible that their perceptions differ. Attachment theory suggests that individuals with differing attachment styles perceive infidelity in different ways, and it may impact how one behaves in a romantic relationship. It would be expected that higher levels of attachment anxiety would increase one's perceptions of many acts as cheating. Additionally, research has shown that individuals with previous cheating behaviors or offenses may be more or less permissive of certain acts, so we might expect that there would be differing perceptions of cheating with this group. Finally, self-esteem has shown to be impactful on one's perceptions of infidelity, attachment, and behaviors. Therefore, we would expect self-esteem to moderate some of the abovementioned factors.

The broad aim of this study was to assess gay men's perceptions of infidelity. Since there is no consensus regarding what is considered acceptable behavior versus cheating behavior in gay relationships, it was possible that these perceptions would mirror those of what research reports about straight relationships, thus the need to explore these factors in depth. However, research suggests that gay men are likely to perceive physical acts as cheating, just as straight men do, but they may be more likely to view emotional acts as not representing cheating behavior. While some research findings

suggest that self-esteem and attachment are important variables related to infidelity among different-sex couples, there remain gaps in the literature examining these variables among same-sex couples, along with the unique experiences, characteristics, and challenges same-sex couples endure. This knowledge could serve to improve therapy and other services that may be tailored to ultimately improve functioning in same-sex relationships. In addition, the current study examined gay men's attachment style and self-esteem as potentially important factors related to perceptions of infidelity. Specifically, past theory and research suggest that attachment style may impact an individual's perceptions of cheating, and that self-esteem may moderate the relationship between attachment style and perceptions of infidelity. Finally, this study explored the potential impact of age and previous infidelity behaviors on permissibility of infidelity. Based on past theory and research, it was hypothesized that:

1. Exploratory Factor Analysis of the Cheating Scale will reveal at least 3 factors consistent with explicit/physical, ambiguous/emotional, and deceptive acts.

2. Anxiously and avoidantly attached individuals will find more actions to be perceived as infidelity (physical, emotional, etc.) compared to securely attached individuals. Little is known about preoccupied attachment style in gay men, so exploratory analyses will be utilized to illuminate any findings for this attachment style.

3. Self-esteem may moderate perceptions of infidelity within different attachment styles. It is uncertain how the intersection of attachment, perceptions of cheating, and self-esteem will be illuminated through analyses, but exploratory analyses will test whether or not this is present.

4. Age may impact perceptions of cheating, and this will be explored in relation to self-esteem and attachment. Lower self-esteem may be related to avoidant and anxious attachment styles, in addition to higher perceptions of partner infidelity.

Chapter 3

Methods

Participants

Participants were 254 adult gay men recruited via crowdsourcing advertisements on a social media website, and from an undergraduate research participation pool at a large public university in the Southeast. In order to participate, individuals had to be at least 18 years of age. They did not have to be in a current relationship. One hundred and four participants were excluded from analyses due to inconsistent data (i.e. non-response to critical measures), or identifying as Transgender ($n = 6$). Transgender individuals were excluded due to the limitations of knowledge about how these individuals relate to the groups investigated in the current study. The final samples of participants from both sources were 150 males with a mean age of 26.75 ($SD = 10.56$), 137 of which were from crowdsourcing advertisements and 13 from the university. The sample exclusively identified as gay. The majority of participants were Caucasian (89%), 5% were Hispanic/Latin, 3% were Black/African, and 3% reported being Asian, Indian, Middle Eastern, or Pacific Islander.

Characteristics of the two different data pools were compared, and no differences were found using t-tests between age ($t = 1.48$, $df = 20.44$, $p = .15$), and Pearson's Chi-square for race ($\chi^2 = 3.05$, $df = 7$, $p = .88$). Additionally, no differences were found for attachment style ($\chi^2 = 1.72$, $df = 3$, $p = .63$) or self-esteem ($t = -.55$, $df = 15.23$, $p = .59$). Thus, the data pools were combined for all analyses.

Measures

Demographics. Demographics (see Appendix A) were gathered using items specifically developed by the investigator for the present study. Participants reported age, race, previous experience with infidelity, and sexual orientation.

Perceptions of Cheating. A 26-item questionnaire was developed for this study to explore a variety of perceptions of infidelity, including social activities (e.g., spending alone time with a preferred-sex friend), emotional activities (e.g., having a deep emotional connection with a preferred sex individual), and physical acts such as sexual touching and sexual acts (see Appendix B). These items were developed to capture current norms in relationships (such as how technology contributes to infidelity), so further exploration could be done on the recent cultural perceptions of infidelity. Some of the items were taken from existing measures, and other items were taken from a lab-based research discussion about current cheating acts where a consensus was reached about the cheating action. For each item, participants were asked to rate whether the actions were considered cheating using a 0-6 Likert-type scale (0 = *never perceived as cheating*, 3 = *moderate level of cheating*, 6 = *definitely cheating*). Psychometric properties and factor structure information will be described below.

Attachment. Participants also completed the Adult Attachment Scale (Collins & Read, 1994; see Appendix C), which is an 18-item measure that assesses attachment style in adults using a 1-5 Likert-type scale (1 = *not at all characteristic of me*, 5 = *very characteristic of me*). In this measure, participants indicate whether the statement provided is characteristic or not characteristic of them when asked to think of how they generally feel in romantic relationships. Representative items are, “I do not worry about

being abandoned,” and “I want to merge completely with another person.” Each attachment style (Secure, Avoidant, Anxious, Preoccupied) had six subscale items within the scale. These subscale items were averaged to get scores for secure, avoidant, preoccupied, and anxious, as per the scoring algorithm notes for the measure. Persons with high scores (above 3; midpoint determined by Collins & Read) on anxious and avoidant were grouped into the preoccupied attachment group (N=30); high anxiety, low avoidance was grouped into secure attachment (N=25); low anxiety, high avoidance was grouped into avoidant (N=68); and high anxiety, low avoidance was grouped into anxious (N=27). This measure demonstrates convergent validity when compared with other measures of anxiety and avoidance (Brennan, 1998), and internal consistency (Impett, Gordon, & Strachman, 2008). This sample demonstrated acceptable internal consistency as well ($\alpha = .81$)

Self Esteem. The Rosenberg Self Esteem scale (Rosenberg, 1965) was used to measure individuals’ perceptions of self-worth (Appendix D). Participants used a 1-4 Likert-type scale (1 = *strongly agree*, 4 = *strongly disagree*) to rate 10 statements. Representative items are, “On the whole, I am satisfied with myself,” and “I certainly feel useless at times.” Total scores were summed (0-30 possible), where higher scores suggested the individual held higher self-esteem. The measure demonstrated good internal consistency (Schmitt & Bedeian, 1982) and concurrent validity (Harborg, 1993). Our sample also demonstrated high internal consistency ($\alpha = .86$).

Procedure

Participants were recruited through facebook, listservs, and the University of Tennessee online Sona Systems research participation website. Participants were directed

to and completed measures through an online survey hosted by Qualtrics.com. All individuals completed informed consent on the website and the packet of measures. UT students earned one credit for their online participation, which was credited to their General Psychology research participation points. Community participants had the option to enter their email for a lottery where they could win a gift card for their participation.

Analytic Plan

Factor Analysis. All statistical analyses were conducted in R version 3.3.2 (R development core team, 2016) and RStudio version 1.0.44 (RStudio, 2016), with packages cited where applicable. An exploratory factor analysis was run using principle component access factoring and a promax rotation. First, an over parameterized model was constructed including 15 factors and then determined best-fit model to define the appropriate number of factors using the Bayesian Information Criterion (BIC) using the *vss* function in the “psych” package (Revelle, 2016). What this means is that the analysis started with an over estimated number of possible factors (15), which was a threshold higher than what could be grouped together with only 26 items (2 or fewer items per factor). This model selection technique uses the data to construct models to include 1-15 factors, with the lowest BIC score corresponding to the number of factors that best fit the data. Once best-fit model was determined, a full factor analysis was performed with “best fit” number of factors using the *factanal* function with a promax rotation. Final factor groupings were determined based on Comrey and Lee’s (1992) criteria, rejecting any factor loading less than 0.5, since factor loadings less than this have only fair qualitative distinctions. The results of our factor analysis were used to construct composite factor

scores. Descriptive statistics, Cronbach's alpha values, and correlations among factors are presented in Table 1.

Composite Factor Scores. To understand how attachment and self-esteem influenced partner perception of infidelity, we first needed to create a composite infidelity scores based on the factor analysis. To do this, a principal component analysis (PCA) was first conducted on each factor using the *rda* function in the *vegan* package (Oksanen et. al., 2016). The composite factor scores were constructed to simplify the data and ease the interpretation of results. Overall, this allowed us to construct a single score from the several items that made up each factor. Next, the first principal component scores (PC 1) were extracted from each PCA, which became the overall composite score. Next, linear models were constructed to predict these composite cheating scores using Rosenberg self-esteem scale and attachment styles as predictors. Differences among attachment styles were analyzed using Analysis of Variance (ANOVA) using the "Anova" function in the *car* package (Fox et. al., 2013).

Linear models were also used to assess how attachment and self-esteem moderated perceptions of infidelity, and regression analyses were utilized to compare age and attachment style as predictors of perceptions of infidelity in the five factors. T-tests were utilized to explore how previous cheating behavior, age, and self-esteem impacted perceptions of cheating.

Chapter 4

Results

Exploratory Factor Analysis

To test hypothesis one, which stated that at least three factors would emerge that were related to explicit/physical acts, ambiguous/emotional acts, and deceptive acts, we ran an exploratory factor analysis on the Cheating Scale, as described above. According to Comrey and Lee (1992), factor loadings less than .5 have only fair qualitative distinctions. Conservatively, any items with less than a .5 loading were removed from the list of factors. The EFA produced 6 factors, but a final factor analysis revealed that 5 factors with good qualitative loadings remained. After model selection, a final factor analysis including our 5 factors was conducted, which consisted of a total of 21 items. Overall, a significant model fit was found with our 5 factors ($\chi^2_{(205)} = 369.26, p < 0.0001$) and explained 68% of the total variation in the cheating scale data with a model fit p -value of $<.0001$. Hypothesis one was supported, as the 3 expected factors emerged. However, 2 additional factors emerged that teased apart some ambiguous acts or was related to technology use. The three predicted factors did emerge, though they were not entirely consistent with prior research. Table 1 displays Cronbach alphas, descriptive statistics and correlations among the following factors:

Factor 1. The first factor, *Physical*, consists of 8 items. The content of this factor is primarily associated with sexual acts (i.e., oral sex, sending nude photos, touching over clothes [dry sex], heavy petting or fondling, making out, sexual intercourse, group sex). Additionally, dating another person fit into this factor, which could involve sexual acts as well. The first factor explained 28% of the total variation in cheating scale data.

Factor 2. The second factor, *Unequivocal*, contained 5 items that showed active displays of emotional connections and suggestive physical gestures. Items included changing clothes in front of someone, talking on the phone about personal things, having a deep emotional relationship, flirting, and dancing sexually. Overall, the second factor explained 14% of the total variation in cheating scale data.

Factor 3. The third factor consisted of 4 items and is labeled *Equivocal*, and appeared to have more passive elements, where the intention was not as clear. These items consist of snapchatting, eating or drinking together, buying or receiving gifts, and going somewhere together. This factor appears to involve spending time with another person or exchanging gifts or sentiments. The third factor explained 11% of the total variation in cheating scale data.

Factor 4. The fourth factor, labeled *Honesty*, contains 2 items that pertain to truthfulness. The items included lying and withholding information. Overall, the fourth factor explained 8% of the total variation in cheating scale data.

Factor 5. Factor five was also composed of 2 items and was labeled *Technology*. These items included the sharing of sexually suggestive information over technology (i.e., sexting and sending/receiving sexually explicit emails). Overall, the fifth factor explained 7% of the total variation in cheating scale data.

As can be seen in Table 1, Factor 1 was correlated with Factor 3 (.57), and factor 2 was correlated with Factors 3 (.62), 4 (.57), and 5 (.67). Factor 3 was correlated with factors 4 (.69) and 5 (.53), and Factor 4 was correlated with Factor 5 (.44). All other factors were modestly or weakly correlated with each other. Table 2 displays individual item factor loadings by subscale.

Composite Factor Values. To simplify factor data to include in linear models for hypotheses 2-4, composite factor values were constructed by conducting principal component analyses on each of the 5 factors. The first factor, which included items that pertained to physical forms of cheating, found that the first principal component explained 83% of the variation for this value. What this means is that respondents answered items grouped in the first factor similarly 83% of the time. All items contributing to this factor were positively correlated along the first principal component, so a higher composite score suggests that participants would have indicated that all of the items in this grouping were cheating and a low composite score would suggest that participants would report all the physical items as not cheating. The second factor, which grouped items that were associated with emotional intimacy or suggestive physical displays, had 78% of total variation explained by the first principle component. Again, 78% of the responses were similarly rated for all items in this factor. Similar to factor 1, all the items were positively correlated, suggesting that high composite values would suggest that participants scored emotional intimacy and suggestive physical displays as cheating and low composite scores would suggest that participants scored this as not cheating. In the third factor, which was related to unclear intentions, it was also positively correlated. However, the third principal component, which explained 72% of data variation, had a negative relationship to composite score, meaning participants with high composite scores would have been less likely to report these items as cheating and participants with low composite scores would have been more likely to report as cheating. The fourth factor, which was linked to honesty items, had a first principal component that explained 95% of data variation and participant responses were

negatively related to composite score, as in factor three. The composite score for the fifth factor, which explained 96% of data variation and was related to technology cheating, had a positive relationship with composite score, meaning high response as cheating were matched with high composite score.

There were 68 individuals who scored as Avoidantly attached, 27 Anxiously attached, 30 Preoccupied attachment, and 25 Securely attached. Their mean self-esteem, as grouped by attachment style are: Avoidant ($M = 17.22$, $SD = 2.17$), Anxious ($M = 16.83$, $SD = 2.79$), Preoccupied ($M = 16.79$, $SD = 3.43$), Secure ($M = 17.16$, $SD = 3.30$).

Before conducting tests of hypotheses 2-4 it was important to first test whether individuals with a history of previous cheating behaviors would be more permissive with all acts of infidelity to determine whether this variable need to be controlled in subsequent analyses. Previous cheating behavior was explored to see if individuals with experiences of being cheated on or having cheated on another impacted perceptions of cheating. For individuals who reported previously cheating in a relationship, t-tests were run and there were no significant differences in any of the factors scores on the cheating scale, types of attachment, or levels of self-esteem. Additionally, t-tests were used to compare previous cheating behavior to perceptions in all five factors and no significant results emerged, therefore this factor did not need to be controlled for in subsequent analyses. Individuals who reported having previously been cheated on in a relationship trended toward having lower perceptions of cheating for Factor 1 (Physical) ($F_{(1,113)} = 3.35$, $p = 0.07$), and had higher perceptions of cheating for Factor 4 (Honesty), ($F_{(1,113)} = 3.91$, $p = 0.05$). No significance emerged for factors 2, 3, or 5 for individuals who reported being cheated on previously.

Hypothesis 2, which stated that anxiously and avoidantly-attached individuals will find more actions to be perceived as infidelity (physical, emotional, etc.) compared to securely attached individuals, was tested by using linear regression (ANOVA) models. Results indicated that hypothesis 2 was not supported. Results comparing attachment style to perceptions of cheating showed marginal differences among the attachment styles for Factor 1 ($F_{(3,110)} = 2.33, p = 0.07$), and no differences for Factor 2 ($F_{(3,110)} = 1.01, p = 0.39$), Factor 3 ($F_{(3,110)} = 1.02, p = 0.39$), Factor 4 ($F_{(3,110)} = 1.18, p = 0.32$), or Factor 5 ($F_{(3,110)} = 0.99, p = 0.40$).

To test Hypothesis 3, which stated that self-esteem may moderate perceptions of infidelity within different attachment styles, tests were conducted within each factor of the cheating scale. To understand how self-esteem moderated the relationship between attachment style and perceptions of infidelity within the composite factors, linear models were constructed to predict composite score including Rosenberg self-esteem scale, attachment style, and their interaction as predictor values. Overall, it was found that self-esteem and attachment style moderated perceptions of infidelity, however, the response was contingent on the type of cheating. For instance, physical cheating (Factor 1) revealed a significant positive relationship between self-esteem and perceptions of infidelity ($F_{(1,110)} = 5.11, p = 0.02$), but a non-significant interaction between self-esteem and attachment style ($F_{(3,110)} = 1.97, p = 0.12$). This revealed that there were no differences between levels of self-esteem and attachment style on perceptions of cheating. However, higher levels of self-esteem did positively influence how one perceived this factor as cheating (See Figure 1).

For Factor 2, which grouped items involved with emotional intimacy and active displays (unequivocal), no differences were found in the perceptions of infidelity based on self-esteem ($F_{(1,110)} = 0.39, p = 0.53$). However, a marginally significant interaction was observed between self-esteem and attachment style ($F_{(3,110)} = 2.48, p = 0.06$). See Figure 2 for this interaction. At low self-esteem, individuals with a secure attachment style were less likely to report unequivocal acts as cheating, however these individuals were more likely to report these acts as cheating with increasing self-esteem, providing modest support for hypothesis 3. Individuals with preoccupied or avoidant attachment styles were more likely to report unequivocal acts as cheating at lower self-esteem but less likely with increasing self-esteem. Anxious attached individuals' perceptions of cheating were not affected by self-esteem.

In Factor 3, which grouped items that related to more passive acts that were ambiguous (equivocal), no differences were found in the perceptions of infidelity based on self-esteem ($F_{(1,110)} = 0.13, p = 0.72$). No interactions were observed between self-esteem and attachment style ($F_{(3,110)} = 1.03, p = 0.38$). Attachment style and self-esteem did not appear to influence perceptions of infidelity, rejecting hypotheses 3.

For Factor 4, which grouped items that related to honesty, no differences were found in the perceptions of infidelity based on self-esteem ($F_{(1,110)} = 0.52, p = 0.47$), rejecting hypothesis 3. However, a significant interaction was observed between self-esteem and attachment style ($F_{(3,110)} = 3.55, p = 0.02$). See Figure 3 for this interaction. At low self-esteem, individuals with a secure attachment style were less likely to report honesty factors as cheating, however, these individuals were more likely to report these acts as cheating with increasing self-esteem. For avoidant attachment individuals, as self-

esteem increased they were less likely to report the acts as cheating, thus supporting hypothesis 3. Anxious and preoccupied attachment individuals' perceptions were not influenced by self-esteem.

For Factor 5, which grouped items involved with technology, no differences were found in the perceptions of infidelity based on self-esteem ($F_{(1,110)} = 2.39, p = 0.12$), again rejecting hypothesis 3. However, a marginally significant interaction was observed between self-esteem and attachment style ($F_{(3,110)} = 2.43, p = 0.07$). See Figure 4 for this interaction. At low self-esteem, individuals with a secure attachment style were less likely to report technology related acts as cheating, however these individuals were more likely to report these acts as cheating with increasing self-esteem. Individuals with anxious or avoidant attachment styles were more likely to report technology related acts as cheating at lower self-esteem but less likely with increasing self-esteem. Preoccupied attachment individuals were more likely to report these acts as cheating as self-esteem increased, thus trending toward supporting hypothesis 3.

Finally, analyses were completed to see if there were any relationships between age, attachment, perceptions of infidelity, and self-esteem. Self-esteem was compared to age to assess whether there were differences across age. Regression analyses were utilized to compare age and attachment style as predictors of perceptions of infidelity in the five factors. Results showed that self-esteem decreased with age, however, it explained very little of the variation in the sample as there were very few responses from older men and therefore, cannot make strong inferences about minimal data points ($r^2 = 0.054, p = 0.007$), thus, rejecting hypothesis 4. For the (physical) cheating factor 1, it was observed that age ($F_{(1,108)} = 2.14, p = 0.15$) and attachment style ($F_{(3,108)} = 2.02, p = 0.11$)

did not influence perceptions of cheating. However, a significant interaction emerged between age and attachment style ($F_{(3,108)} = 2.76, p = 0.04$). For instance, older securely attached individuals are less likely to report physical factors as cheating relative to younger securely attached individuals. This again explained very little of the variation, as the adjusted $r^2 = 0.08$. For factor 2 (emotional/unequivocal), there were no relationships between age ($F_{(1,108)} = 2.15, p = 0.15$) and attachment style ($F_{(3,108)} = 2.02, p = 0.11$) with perceptions of infidelity. Again, a significant interaction emerged between age and attachment style ($F_{(3,108)} = 2.78, p = 0.04$), such that older securely attached individuals are less likely to report unequivocal factors as cheating relative to younger securely attached individuals, with no differences shown among the other attachment styles. This explained very little of the variation again, as the adjusted $r^2 = 0.08$. For factors 3, 4, and 5, there were no relationships between age, attachment style, or self-esteem.

Discussion

Infidelity is a prevalent occurrence in relationships and is associated with several negative outcomes including dissolution, mental health problems and violence. Perceptions of cheating are difficult to measure, and there are limited assessments for this construct. Attachment and self-esteem have shown associations to cheating, and how one perceives cheating. Therefore, the current study aimed to develop a measure to assess for perceptions of cheating, and how attachment style and self-esteem impacted these perceptions among a sample of adult gay males.

Hypothesis 1, which proposed that at least 3 factors related to physical acts, ambiguous and emotional acts, along with deceptive acts, would emerge in the EFA, was supported. Additionally, two unexpected factors emerged that teased apart some

ambiguous acts or was related to technology use. This suggests that our scale development was similar to the PDIS measurement (Wilson, 2011), but the higher number of items in our measure may have contributed to the greater number of factors that appeared. In addition to the larger number of items in our scale, we considered that technology might play a greater role in relationship development, and thus, perceptions of cheating. The way in which the factors clustered together for this population illuminates some uniqueness about perceptions within this group as well. Like the PDIS, factors for this study grouped together in relation to physical acts, emotional acts, and deception, but differed slightly compared to the PDIS. For example, our strongest factor related to physical and explicit acts of infidelity, whereas the PDIS's strongest factor was related to ambiguous acts that had unclear intentions, such as eating or drinking, or going somewhere with another person. Furthermore, the deceptive acts (such as lying and withholding information) were grouped together independently in our measure, where the PDIS grouped these factors in conjunction with fantasizing about another person. This may suggest that physical cheating may have similar connotations for gay men compared to straight men. Still, our results only showed differing perceptions in relation to self-esteem levels, so this is important to consider. What was unique about our scale development is that we considered how technology influences access to other relationships, and how this resource could change how infidelity is perceived in current times. For gay men especially, technology provides a safer outlet for finding sex partners, hook-ups, or other gay men in general with the use of available websites and phone apps that are specifically targeted toward gay men. It would be important to further explore

these outlets in depth to fully understand relationships with gay men, how technology ties into this access, and how it relates to cheating (if at all).

Hypothesis 2 was rejected, which stated that anxiously and avoidantly attached individuals will find more actions to be perceived as infidelity compared to securely attached individuals. However, this hypothesis appeared to have more complexity to the results when considering the interaction with self-esteem that arose. What emerged was that securely attached individuals perceived more actions as cheating compared to anxiously and avoidantly-attached individuals, but only with increased self-esteem. There are several reasons this assumption did not mirror previous research. One reason may be that this study exclusively measured attachment styles among gay males, and we know very little about how they are similar in attachment and perceptions to their straight male counterparts. Another reason being that there is limited research on securely attached males, as they do not typically warrant investigation since there are fewer negative issues surrounding this attachment style. It is curious that individuals with insecure/anxious or avoidant attachment styles did not differ in their perceptions of cheating compared to securely attached individuals, as we would have expected. One explanation for this may relate to Ridge and Feeney's (1998) observation that gay individuals' attachment styles are highly impacted by peer and family rejection during their "coming out" stage. Individuals with anxious/insecure and avoidant attachment styles generally possess low self-worth, and if they experience further rejection and abandonment from others they may carry a generalized perception that people will always betray them. This anticipation of disloyalty may negatively impact their expectations from others in relationships, thus minimizing perceptions about cheating.

Hypothesis 3, which stated that self-esteem may moderate perceptions of infidelity within different attachment styles was supported in factors 1, 2, and 4, but only in individuals with secure attachments. This may be explained by the idea that individuals with higher self-worth or esteem are less tolerant of acts that could negatively impact their sense of self. As Murray (2006) noted, individuals evaluate their romantic relationships more positively as their self-esteem increases. It would be reasonable to assume that these factors would also relate to lower tolerance for cheating and potentially damaging an intimate relationship. Since there is also a correlation between high self-esteem and secure attachment, these factors may allow for greater trust in relationships and therefore, a protective barrier from a desire to cheat or tolerance for cheating (Gorrese & Ruggieri, 2013). Another notable finding was related to Colgan's (1987) early research suggesting that attachment style in gay individuals may be highly influenced by peer relationships, which also relates to self-esteem development. The current study indeed found that older individuals in this study had lower self-esteem compared to younger individuals. This is a curious finding, and may relate to the shift in stigma associated with being gay in our culture. Perhaps younger individuals do not face nearly as much discrimination as the older generations of gay men once did, which would have a significant impact on their development of attachment security and self-esteem. This finding warrants greater investigation into generational differences among gay men in relation to attachment and self-esteem.

Results demonstrated that previous cheating behavior did not influence permissiveness in perceptions of infidelity, which allowed us to control for this factor in the further analysis. Hypothesis 4 was also rejected, as older men reported having lower

self-esteem, and no other interactions were found in relation to perceptions of cheating or attachment. This sample did not follow typical trajectories of self-esteem development, which is a curious component of this sample. As noted before, it has been theorized that gay male attachment is equally influenced by peer relationships and judgment, just as much as parental relationships. We could speculate that older generations of gay males faced greater discrimination growing up, as acceptance around gay identity has only culturally developed in more recent times. Older gay males likely possess higher levels of internalized homophobia, as people in their early years and across their lifespan may have expressed this notion that gayness was wrong and sinful. So, as attachment is also related to self-esteem, we could speculate that their self-esteem did not develop over time due to their negative perceptions of self and even others who are similar to them.

Future Directions

Research should further examine the relationships between perceptions of infidelity, attachment, and self-esteem in gay relationships. Understanding how these components intersect and influence one another may better inform therapy interventions treating infidelity, and communication surrounding cheating in romantic relationships. For example, if we knew that certain attachment styles with varying levels of self-esteem were more likely to participate in infidelity, or be emotionally distressed by cheating, therapists could better tailor their treatment by building greater empathy around these differences. Given that the current study showed differing levels of self-esteem across age, it would be important to better assess for generational experiences that may impact one's development of self-esteem. Understanding age differences that may be due to

negative life experiences for gay males may help therapists build upon empathy in treatment as well.

It would be beneficial to replicate this study and perform confirmatory factor analyses on the Cheating Scale factors. This is a decent measure, as it revealed high Cronbach alpha loadings and grouped items similarly to the PDIS (Wilson, 2011). In order to further validate this measure, we would perhaps need to add more items that would potentially group with each factor. We could not conclude that the factors that emerged were the best fit for this group, or that they explained all components of cheating in gay relationships. Additionally, future research should consider assessing consensual non-monogamy in depth and how this impacts perceptions of infidelity. Future studies may even consider developing a scale that assesses consensual non-monogamy in gay relationships and compare that to attachment, self-esteem, and what is considered infidelity.

Limitations

The current study possessed several strengths such as a large sample size of a marginalized group, high alpha validity on the Cheating Scale factors, and use of other highly validated measures on attachment and self-esteem, but there are also noteworthy limitations. Though the sample size was large, it was a very homogenous group that consisted of primarily young, Caucasian males. A more diverse sample of ethnicity and age may provide better insight into how attachment, self-esteem, and perceptions of infidelity differ across groups. Future research may utilize list-serves to specifically target participants from diverse backgrounds and ages.

Another major limitation of the study is that we examined how attachment and self-esteem were related to perceptions of cheating concurrently with the creation and initial testing of a new measure on perceptions of cheating. This measure was developed in a lab setting and intended to build upon the PDIS, but considered issues that were more relevant to gay men. The lab development of the scale utilized known literature about technology use in gay relationships, and how it may contribute to perceptions of infidelity. Furthermore, two of the factors only had 2-items each within the factor. Some research suggests that any factors with less than 3 items are weak (Fabrigar, et. al., 1999), where other studies state that any factor grouping above a Cronbach alpha level of .8 is valid (Nimon, et. al., 2015). The BIC analysis only allowed for loadings above .8 to be valid, and the data supports that these factors are legitimate. However, the literature does not have a conventional standard on whether 2-item factors can be used or not (Cumming, 2014). As stated in the discussion, future research could add similar items to each factor and perform confirmatory factor analyses with a different sample to see how the items hang together.

Unfortunately, a significant limitation of the study was the lack of measurement for consensual non-monogamy in committed gay relationships, or measurement of internalized homophobia. Since many gay male relationships are reported to be open relationships, this factor would be necessary to assess for this in the future. Open relationships, or consensually non-monogamous relationships, uphold different rules that provide freedom to participate in external relationships, so this would certainly impact the results of this study. If the respondents in this study typically participate in consensually non-monogamous relationships, it could explain why there were no

differences in perceptions of infidelity across attachment styles. Controlling for this factor, and exploring the specific rules that surround open relationships, may reveal much different perceptions of cheating when and if the relationship rules are broken. There is also a significant history of negative stigma directed at gay relationships in the past, but attitudes toward gay individuals have been shifting toward the positive in recent times. It would be critical to assess how these changes in relationships, stigma, and the individual's own perception of their sexual orientation may impact other aspects of relationships, and their self-esteem. Since relationship satisfaction was not measured either, it would be important to see how all of these factors play into relationship health and wellness also.

A further limitation of the study is the lack of knowledge around attachment styles in gay men. Very little is known about preoccupied attachment and we did not make any hypotheses about this group, but some studies suggest that there are more preoccupied attached gay males than other groups (Ramirez & Brown, 2010). Preoccupied attachment individuals were included in the analyses to see how they compared to the other attachment styles, though no significant findings emerged. Additionally, there is a form of secure attachment where one earns this attachment style over time through positive experiences with others (Saunders et. al., 2011). It is unknown how individuals with preoccupied attachments or earned secure attachments may differ in responses, nor was this measured in the current study. Future research might consider measuring and controlling for all of the abovementioned limitations.

Summary

The current study intended to develop a scale that measured perceptions of cheating in gay males, and to investigate how attachment and self-esteem influenced those perceptions. The proposed hypotheses that at least 3 factors would emerge from the Cheating Scale, and that self-esteem may moderate perceptions of infidelity, were supported. Results indicated that individuals with higher self-esteem and who were securely attached were less tolerant of acts of cheating compared to other attachment styles and lower self-esteem. Though other hypotheses were not supported, it is important to continue this research to better understand all of the factors that contribute to relationship wellness in the gay community. Understanding these factors may inform therapy knowledge and a better framework for working with gay couples. Furthermore, this research may add to the limited research about gay men, self-esteem, attachment styles, and infidelity. Future research should improve upon scale weaknesses of the current study through further scale development and confirmatory factor analyses, and measuring consensual non-monogamy in order to provide a more thorough understanding of the unique challenges that are present in gay relationships.

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Appendices

*Table 1.**Descriptive statistics and correlations among the Cheating Scale Factors*

Factor	α	M	SD	1.	2.	3.	4.	5.
1. Physical	.97	5.9	1.7	-	.21	.57*	.26	.23
2. Unequivocal	.89	2.3	1.3		-	.62*	.57*	.67*
3. Equivocal	.85	1.6	.88			-	.69*	.53*
4. Honesty	.96	3.0	1.8				-	.44*
5. Technology	.96	4.8	2.1					-

* $p < .05$

Table 2.

Cheating Scale items and factor loadings according to subscale

Factor	Order Administered	Item	Factor Loading
Physical			
	19	Oral sex	.93
	20	Sending nude photos	.73
	21	Touching over clothes (Dry sex)	.87
	22	Heavy petting or fondling	.89
	23	Making out	.85
	24	Sexual Intercourse	.95
	25	Group Sex	.92
	26	Dating another person	.85
Unequivocal (Active)			
	4	Changing clothes in front of someone	.81
	5	Talking on the phone about personal things	.71
	6	Having a deep emotional relationship	.56
	9	Flirting	.50
	16	Dancing Sexually	.63
Equivocal (Passive)			
	12	Snapchatting	.62
	14	Eating or drinking together	.66
	15	Buying or receiving gifts	.58
	17	Going somewhere together	.87
Honesty			
	7	Lying	.82
	8	Withholding information	.81
Technology			
	10	Sexting	.72
	11	Sending/receiving sexually explicit emails	.73

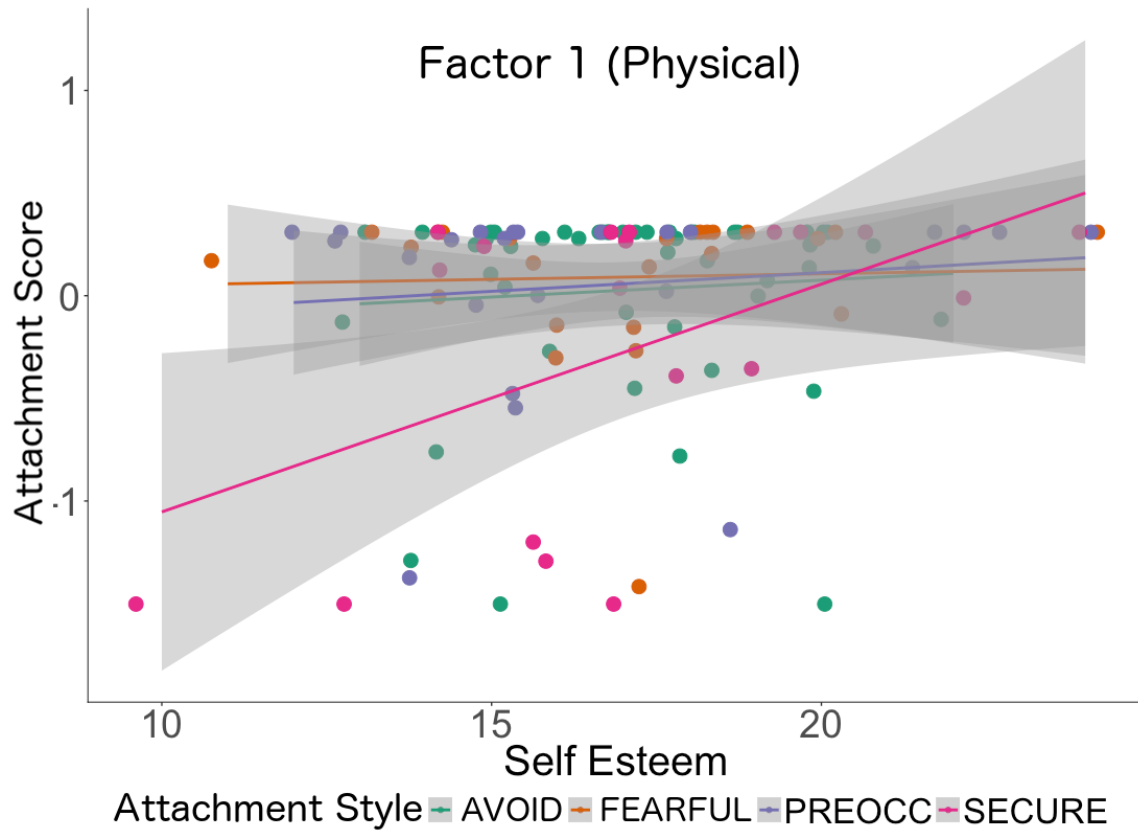


Figure 1.
Attachment and Self-esteem interaction for Factor 1

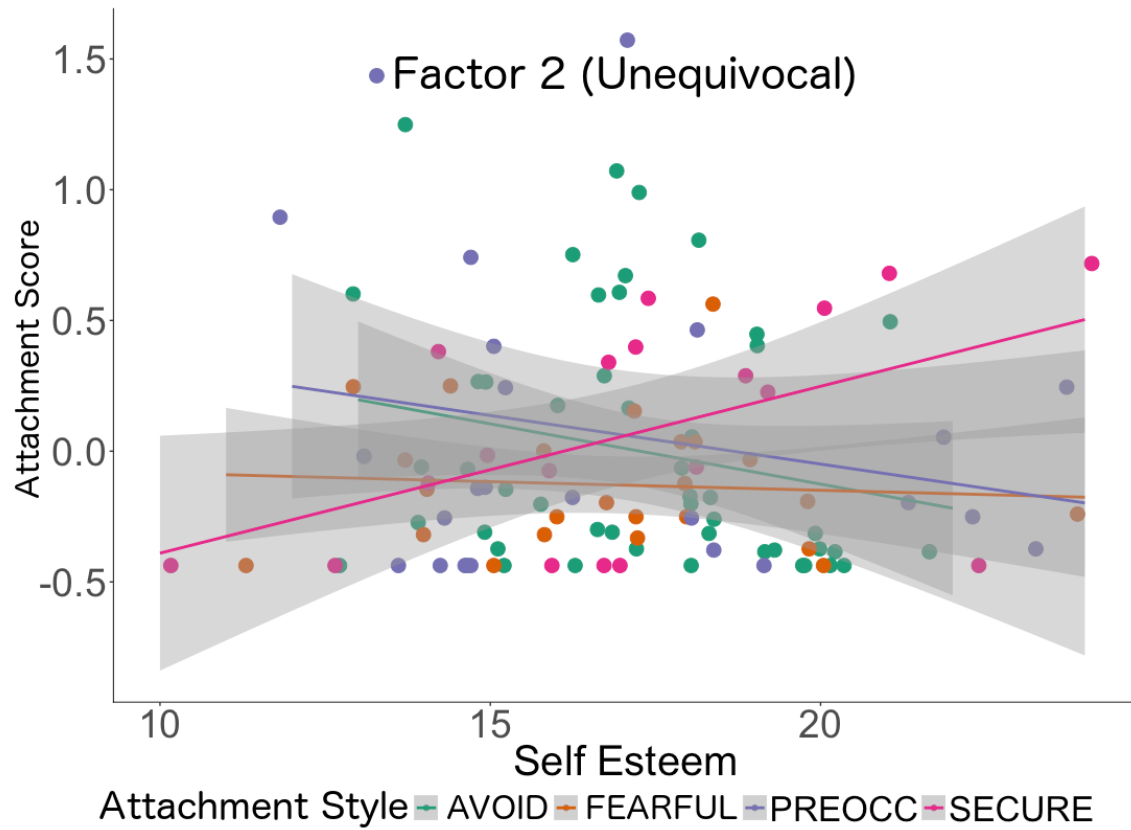


Figure 2.
Attachment and Self-esteem interaction for Factor 2

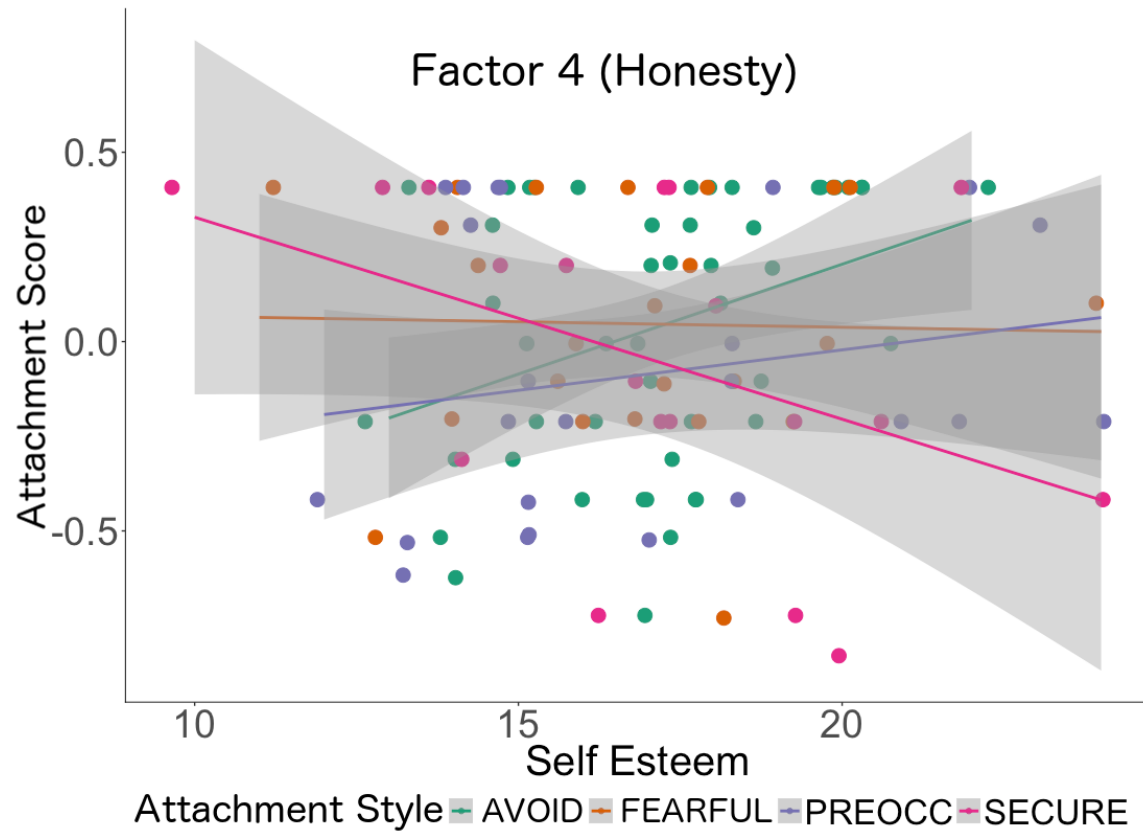


Figure 3.
Attachment and Self-esteem interaction for Factor 4



Figure 4.
Attachment and Self-esteem interaction for Factor 5

Appendix A

Demographic Questionnaire

1. Age: _____
2. Zip Code: _____
3. Gender: Female / Male / _____
4. Are you transgender? Yes / No
5. Are you currently a student? Yes / No
6. What grade level?
 - High School
 - Freshman
 - Sophomore
 - Junior
 - Senior
 - 5th Year Plus
 - Other
7. Are you a full-time student or part-time? Full-time Part-time
8. Member of a Greek Organization? Yes / No
9. Approximate Cumulative GPA: _____
10. How would you describe your current level of education?

No High School Diploma/Equivalent	Bachelor's Degree
High School Diploma/Equivalent	Master's Degree
Some College but no Degree	Doctoral Degree or Equivalent
Associates Degree	Other Degree:
11. Working?
 - Yes Full-time
 - Yes Part-Time
 - No
12. Are you of Hispanic, Latino, or Spanish origin? Yes / No
13. Racial Background: Please select all that apply
 - 1. White/Caucasian
 - 2. Black or African-American
 - 3. Asian-American

4. Native (North, Central, South American)
5. Indian/Middle Eastern
6. Hawaiian/Pacific Islander
7. Other (please list):

14. Religious Background/Affiliation: Circle One
1. Christian
 2. Jewish
 3. Muslim
 4. Buddhist
 5. Hindi
 6. Atheist (do not believe in deities)
 7. Agnostic (no definite belief if God does or does not exist)
 8. Other (please list): _____
15. Family Income Level: Circle One
1. Less than \$10,000
 2. \$10,000 - \$20,000
 3. \$20,000 - \$30,000
 4. \$30,000 - \$40,000
 5. \$40,000 - \$50,000
 6. \$50,000 - \$75,000
 7. \$75,000 - \$100,000
 8. Greater than \$100,000
16. What is your relationship status?
1. Single, not dating anyone right now
 2. Dating but not serious or exclusive
 3. Seriously dating
 4. Engaged
 5. Married/Partnered
 6. Divorced/Widowed
 7. Separated
17. How many total lifetime sexual partners have you had?
18. If you are currently dating someone, engaged or are married, how long have you been with this person?
- Years _____ Months _____
19. Sexual Orientation: Heterosexual / Gay / Lesbian / Bisexual/ Other
- _____

0	Exclusively heterosexual
1	Predominantly heterosexual, only incidentally homosexual
2	Predominantly heterosexual, but more than incidentally homosexual
3	Equally heterosexual and homosexual
4	Predominantly homosexual, but more than incidentally heterosexual
5	Predominantly homosexual, only incidentally heterosexual
6	Exclusively homosexual
X	Non-sexual

Using the Scale above, please answer the following questions:

20. You would describe your level of sexual activity as: ____

21. You would describe your level of sexual attraction as: ____

22. What is the gender of your current partner? Male / Female / Other / NA

23. How many serious romantic relationships have you been involved in throughout your lifetime? ____

24. Why did your last relationship end? (Check all that apply)

Infidelity

Distance

Abuse

Loss of Feelings

Other: _____

N/A

Appendix B

Cheating Scale

1. Have you ever cheated in a romantic relationship? Yes / No
2. Have you ever been cheated on while in a romantic relationship? Yes / No
3. How many instances of cheating are you aware of among your friends? ____
 Parents/Caregivers/Guardian? ____
 Family? ____
4. Please rate the extent to which you consider the following behaviors to be cheating if your partner were to engage in these behaviors with someone other than yourself with persons of the same or opposite sex. Please use the scale provided below.

- 0 = Never cheating
 1 = Extremely low level of cheating
 2 = Low level of cheating
 3 = Moderate level of cheating
 4 = High level of cheating
 5 = Extremely high level of cheating
 6 = Definitely cheating

	Same Sex?	Opposite Sex?
Having friends		
Facebook messaging/online messaging without your knowledge		
Spending alone time with someone		
Changing clothes in front of someone		
Talking on the phone about personal things		
Having a deep emotional relationship		
Lying		
Withholding Information		
Flirting		
Sexting		
Sending/Reading sexually explicit emails		
Snapchatting		
Suggestive language toward someone		
Eating or drinking		
Buying or receiving gifts		
Dancing sexually		
Going Somewhere		
Watching Porn		
Oral sex		
Sending nude pictures		
Touching over clothes (dry sex)		

Heavy Petting or fondling		
Making out		
Sexual Intercourse		
Group sex		
Dating		

Vita

Shannon Bierma was born in Iowa and grew up in Wisconsin. She attended the University of Wisconsin-Oshkosh, where she obtained her Honor's Bachelor of Science degree in Psychology. After graduating, she worked as a research assistant at the University of Tennessee studying substance abuse, IPV, relationship wellness, and genetics under the supervision of Drs. Gordon, Stuart, and Moore. She is pursuing her Ph.D. in clinical psychology under the mentorship of Dr. Todd Moore. Shannon is investigating relationship functioning in sexual minorities, as well as infectious disease transmission and other health consequences related to risky sexual behavior and IV drug use.