Exploring STI Screening Intentions and Behaviors in Relationships: Integrating Individual and Relational Determinants

DISSERTATION

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Abstract

The Center for Disease Control estimates that there are 110 million sexually transmitted infections (STIs) in the United States with nearly 20 million new STIs each year. If left undiagnosed and untreated or unmanaged, STIs threaten an individual’s health in the long term as they can lead to complications with reproductive health, including infertility and ectopic pregnancy, as well as cancer and a general decline in well-being. Empirical work has predominantly focused on preventative behaviors like consistent condom; however, one-third of sexually active young adults report inconsistent use and the National Institutes of Health has found that 20% of those who are infected may delay screening even after symptoms appear. In turn, the current paper offers two manuscripts that explore individuals’ perspectives and beliefs about STI testing.

The first manuscript examines the role of conversations about STIs in close relationships and how those conversations influence an individual’s perception of personal risk. Semi-structured interviews were conducted with 32 undergraduates. Qualitative analysis indicated that participants interpreted conversations about STIs as a turning point in a relationship, such that the participants reported feeling closer to their partners after discussing STI screening and other safer sex practices.
The second manuscript then investigated specific individual and relational determinants that may contribute to intentions to seek and discuss STI testing with a relationship partner. To examine these characteristics, the theory of planned behavior and the investment model were applied. Participants included 327 individuals recruited through Qualtrics and 222 undergraduates recruited using a participant pool. Results indicated that although the relationship variables accounted for a small amount of variance, those same variable were influencing how the TPB variables were related to behavioral intentions.
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Table of Contents

Abstract ......................................................................................................................... ii
Acknowledgments ........................................................................................................ iv
Vita................................................................................................................................. v
List of Tables ............................................................................................................... ix
List of Figures ............................................................................................................. x
Chapter 1: Introduction and Overview ................................................................. 1
Chapter 2: Theoretical Background ..................................................................... 6
Chapter 3: Study 1 ..................................................................................................... 25
  Methods....................................................................................................................... 25
  Data Analysis ............................................................................................................ 27
  Results ....................................................................................................................... 27
  Discussion .................................................................................................................. 36
Chapter 4: Study 2 ..................................................................................................... 39
  Methods....................................................................................................................... 39
Measures ........................................................................................................... 40
Data Analysis ..................................................................................................... 44
Results .............................................................................................................. 45
Replication ......................................................................................................... 53
Discussion ......................................................................................................... 59
Chapter 5: General Discussion .......................................................................... 63
  Theoretical Implications .................................................................................. 66
  Practical Implications ....................................................................................... 70
  Limitations and Future Directions .................................................................. 73
  Conclusion ........................................................................................................ 76
References ......................................................................................................... 78
Appendix A: Qualitative Interview Questions ..................................................... 98
Appendix B: Quantitative Survey Items ............................................................. 100
List of Tables

Table 1. Summary Statistics: Intentions to Seek Testing ........................................ 46
Table 2. Summary Statistics: Intention to Talk about Testing.................................... 47
Table 3. Exogenous-to-Endogenous Path Estimates .................................................. 49
Table 4. Direct Effects of Dependence Variables ....................................................... 51
Table 5. Summary Statistics for Intentions to Test: Student Sample.......................... 54
Table 6. Summary Statistics for Intentions to Discuss Testing: Student Sample ........... 55
Table 7. Direct Effects of Dependence Variables - Student Sample .......................... 56
List of Figures

Figure 1. Conceptual Model ................................................................. 22
Figure 2. Empirical Model: Intentions to Test ............................................. 52
Figure 3. Empirical Model: Intentions to Talk ............................................. 53
Figure 4. Empirical Model: Intentions to Test – Student Sample ................. 57
Figure 5. Empirical Model: Intentions to Talk – Student Sample ................. 58
Chapter 1: Introduction

Sexually transmitted infections (STIs) continue to be a tremendous public health concern in the United States (CDC, 2013; Noar, Carlyle, & Cole, 2008). According to the CDC (2013), nearly 20 million new STIs occur annually in the United States and although treatable, many avoid screening even after symptoms appear (Malek, Chang, Clark, & Cook, 2013). If left undiagnosed and untreated or unmanaged, STIs threaten an individual’s health in the long term as they can lead to complications with reproductive health, including infertility and ectopic pregnancy, as well as cancer and a general decline in well-being. Empirical work has placed greater emphasis on preventative behaviors like consistent condom use rather than STI screening behaviors (Albarracín, Johnson, Fishbein, & Muellerleile, 2001; Barth, Cook, Downs, Switzer, & Fischhoff, 2002; Noar et al., 2008; Sheeren & Taylor, 1999); however, work exploring STI screening must also be encouraged as nearly one-third of sexually active 15 to 24 year olds use condoms inconsistently (Davis et al., 2013; Reed, England, Littlejohn, Bass, & Caudillo, 2014), leaving individuals vulnerable to infection. Given the tremendous costs associated with STIs, research should focus on potential factors that may increase the diagnosis and treatment of STIs.
A possible context to begin examining STI testing behaviors may be in close relationships as romantic partners may actually be more vulnerable to transmission than those opting for casual encounters. Moving from a “developing” to an “established” relationship is associated with a decrease in intentions to use condoms, but this transition can happen in as little as 21 days and partners may be discontinuing their use of condoms before it is safe to do so (Chacko et al., 2006; Fortenberry, Tu, Harezlak, Katz, & Orr, 2002). Further, once couples consider their relationship established, they are less likely to perceive romantic partners as sources of harm (Ito, Kalyanaraman, Ford, Brown, & Miller, 2008), so partners may forego protective behaviors; however, some empirical evidence suggests that romantic partners may also be motivated to protect their partners and in turn, have positive attitudes towards testing (Balfe & Brughe, 2008). As such, exploring how relationship characteristics may be influencing STI testing may help to expand our understanding of the behavior.

The present study seeks to add to the literature on STI screening behaviors by examining sexual health decision making in relationships. Specifically, one study considers the role of conversation about STIs in close relationships and how conversation may influence an individual’s sense of personal risk. The other study examining individual and relational determinants of STI testing behaviors using the theory of planned behavior (TPB; Ajzen, 1985) and the investment model of commitment processes (Rusbult, 1983). Both of these theoretical frameworks have received empirical support separately, but only a limited number of studies have applied both theories to STI testing (Booth, Norman, Goyder, Harris, & Campbell, 2013; Booth, Norman, Harris, &
Goyder, 2014; Boudewyns & Paquin, 2011). Together, these theories can account for individual level factors which may contribute to behavior change as well as acknowledging relationship variables that have the potential to inhibit decision making.

**Close Relationships and STIs**

Media coverage concerning casual sex and risk taking may suggest that high STI rates can be attributed primarily to casual sex (Gilmartin, 2006). Certainly, such risk-taking can increase one’s likelihood of contracting and spreading an STI, but individuals who choose sex in committed relationships rather than casual sex are not necessarily safer. To a degree, close relationships can pose a greater risk for individuals’ health because sex within relationships is less likely to be perceived as dangerous (Misovich, Fisher, & Fisher, 1997). Relational partners are unlikely to perceive one another as potential sources of harm (Pilkington & Richardson, 1988), so sex within relationships is seen as less risky; however, the common trajectory of relationships, particularly for adolescents and young adults, indicates that committed relationships are not any less risky than casual sex.

College-aged individuals and adolescents tend to develop relationships quickly. Adolescents and young adults (age 13-22) in steady relationships have been found to believe that intimacy had been established within 21 days (Fortenberry et al., 2002). The rapid development of these relationships has serious implications for safe sex practices. Notably, condom use declines as relationships progress, and established partners are less likely to use condoms with one another (Cline, 2011; Fortenberry et al., 2002). Further, relational development may outpace the manifestations of STI symptoms, which is
problematic as individuals are less likely to seek testing until after symptoms appear (Backonja, Royer, & Lauver, 2014). Quick relational development may mean partners are discontinuing condom use without verifying that a partner does not have an infection.

Previous work on condom use in relationships has been found to mirror the transition from casual to main partners found by Fortenberry and colleagues (2002). Similarly, Ku, Sonenstein, and Pluck (1994) proposed the sawtooth hypothesis which proposes condom use within relationships will vary over time with usage being highest at the beginning of a relationship as condom use is perceived more negatively over time. Bauman and Berman (2005) suggest the willingness to forego condom use represents an important test of trust, intimacy, and commitment for a relationship. Therefore, discussing condom use in a committed relationship may undermine perceptions of relational well-being (Cline, 2011). Not engaging in safe sex practices becomes an indicator of relationship development and importance, and those with a goal to make the transition from casual to committed relationship may disregard those practices to demonstrate the importance of the relationship. As such, individuals may be willing to risk their physical health to promote relational outcomes.

Another issue is that college-aged individuals are more likely to engage in serial monogamy and have multiple short-term exclusive relationships in succession. Thus, they are still likely to have a high number of sexual partners, placing them at greater risk for STIs (Cline, 2011; Misovich et al., 1997). One survey found individuals in monogamous relationships reported an average of 2.45 partners, whereas those not in relationships reported 1.0 partners over the course of a year (Kelley, Borawski, Flocke, & Keen, 2003).
Additionally, over 20% of monogamous partners report extradyadic sexual activity while in relationships (Vail-Smith, Whetstone, & Knox, 2010). Despite this, individuals in relationships are less likely to perceive their sexual behavior as dangerous, so being serially monogamous may be riskier than originally thought.

Close relationships represent a unique context to explore STI screening behaviors. Though some work has emerged on the association between relationships and STIs (Balfe & Brugha, 2009; Mevissen, Ruiter, Meertens, Zimbile, & Schaalma, 2011; Talib, Silver, Coupey, & Bauman, 2013), limited research has explored the role of relational variables in STI transmission. By examining the role of relationships, research may help to identify ways for encouraging and increasing the number of individuals seeking STI screening.
Chapter 2: Theoretical Background

Social Exchange Theories

Social exchange theories draw a parallel between social interaction and economic exchange (Thibaut & Kelley, 1959). Social interactions and subsequent outcomes related to those interactions are evaluated based on the potential costs and rewards of a particular course of behavior (Kelley, 1979; Thibaut & Kelley, 1959). Costs entail negative or undesirable experiences and rewards any desirable or satisfying experience; together, costs and rewards form outcomes or the “net profit” experienced within a relationship. Individuals use perceptions of costs and rewards to guide decisions about allocating personal resources or investing in interactions; however, social exchange theories do not suggest that individuals are inherently self-serving. Self-interests play an integral part of interactions, but they do not necessarily preclude individuals from acknowledging, or even prioritizing, the interests of others or relationship partners.

Willingness to consider others’ interests highlights the importance of interdependence in social exchange theories. Interdependence means one individual’s costs or rewards are influenced by another’s actions (Stafford, 2008; Thibaut & Kelley, 1959). For example, within interpersonal relationships, individual evaluations of satisfaction or commitment are influenced by each partners’ decisions. Rusbult and colleagues (1994) further suggested interdependence in long-term relationships can be
understood as an individual’s perceived need for a relationship as well as a personal assessment of an individual’s ability to satisfy one’s partner. Interdependence in relationships means the pursuit of personal goals is influenced by relational partners and self-interests may even change to accommodate partners. Interdependent partners evaluate outcomes based on how they impact relationships.

Though social exchange theories emphasize the transactional nature of relationships, not all social exchange theories place the same emphasis upon resources and subsequent allocations. For example, interdependence theory suggests relationships hinge on the control of resources. Equity theory acknowledges the importance of resources, but places greater emphasis on distributive justice or the idea that rewards should be proportionate to one’s effort. As the present study is primarily concerned with how developing relationships alter sexual health decisions, interdependence theory and related concepts are of the most use. The emphasis on the control of resources is useful as sexual health-decision making can be constrained or encouraged by investment of resources including anticipated warmth or emotional closeness and a sense of personal power (DeLamater, 1991; Hill & Preston, 1996).

**Interdependence Theory**

Interdependence theory suggests individuals make decisions based on previous costs and rewards experienced personally, within relationships, and partners’ experiences (Kelley, 1979; Kelley & Thibaut, 1978; Thibaut & Kelly, 1959). As individuals weigh the costs and rewards of an interaction, their evaluations will be understood in terms of the relative level of dependence within the relationship. The dependence level describes
the extent to which interacting partners need their relationship or to what degree the relationship influences a sense of well-being (Agnew, Van Lange, Rusbult, & Langston, 1998). Individuals considering the potential impact of their behaviors and decisions on romantic partners’ outcomes and expectations have a more dependent relationship. Partners who are unwilling or unable to change how self-interests are satisfied have a less dependent relationship. Dependence within relationships can change how personal goals and interests are fulfilled and plays an important role in the occurrence of conflict within relationships.

Such strife, or conflicts of interest, are common as relationships become more interdependent. Notably, conflicts of interest can arise when partners struggle to manage mutually rewarding activities or dislike when pursuing activities the other partner finds rewarding (Kelley, 1979). As such, interdependence theory suggests individuals in relationships attempt to negotiate conflicts of interests; therefore, when relationship partners identify opportunities to engage in behavior rewarding to one’s partner, individuals consider how to adapt their self-interests. Partners can work to broaden their conception of rewards to include decisions and activities which satisfy both partners’ interests, helping to alleviate conflicts of interest. Though partners may work to coordinate self-interests, the potential exists for relational partners to have incongruent relationship outcomes that can foster the reconsideration of satisfaction with the relationship.

Kelley (1979) refers to this shift or change as a transformation of motivation. Lewis and colleagues (2006) state that the transformation of motivation may be the key
mechanism in understanding how relationships can alter behaviors. Some scholars have suggested transformations of motivation are assigned greater meaning because relational partners are accounting for the perspectives and concerns of both parties (Rusbult, Arriaga, & Agnew, 2001). More specifically, partners may have considered relational norms and expectations or how a particular decision would influence perceptions of trust or satisfaction in a relationship (Lewis et al., 2006). Transformations of motivations are integral because those hoping to remain in relationships will consider the partners’ needs and interests. Both partners adjust and adapt their interests to maintain the relationship (Rusbult et al., 2001); unwillingness to modify and align outcomes with a partner can signal the need to reevaluate the rewards and costs of the relationship.

When considering potential health behaviors and decisions, a transformation of motivation may help to clarify how partners may be influencing one another’s behavior. Transformation of motivation occurs when partners cognitively and emotionally ascribe meaning to a particular behavior perceived as important to a relational partner (Agnew et al., 1998; Lewis et al., 2006; Rusbult & Van Lange, 1996). As such, relational partners can have a positive influence on health (Burke & Segrin, 2014), but partners can also discourage or enable poor health behaviors (Homish & Leonard, 2008). Unsafe sex practices that may place individuals at risk for STIs can be motivated by relationship characteristics. A desire to appear trusting to one’s partner and the progression from a “developing” to “established” relationship are associated with a decrease in intentions to use condoms (Fortenberry et al., 2002). This association suggests that sexual health decisions may be driven by the need to validate a burgeoning sense of trust and intimacy.
by forgoing the use of contraceptives. Also, if choosing not to use condoms coincides with the presumed intensifying of a relationship, a partner’s willingness to not use contraceptives may be a means of demonstrating a need for greater intimacy or personal commitment to the relationship. Similarly, willingness to seek an STI test may also demonstrate commitment and intimacy as partners could formally prove they are not a source of potential harm to one another.

Reevaluating costs and rewards within the relationship are ultimately based on perceptions of resource allocation. Determining whether or not a relationship is rewarding is based on the comparison level (CL) and comparison level of alternatives (CLalt). Simply, CL is what an individual believes he or she should be receiving and CLalt is what one believes he or she could be receiving. The CL is the standard for judging outcomes and expectations (Stafford, 2008; Thibaut & Kelley, 1959). Individuals compare those expectations to the present circumstances of their relationship and assess if their expectations are being satisfied. Perceived relational deficiencies can lead individuals to consider the CLalt. Thibaut and Kelley (1959) posit that the CLalt represents the lowest acceptable level of rewards to consider alternative relationships (Stafford, 2008). Calculating one’s CLalt is a means of determining how dependent one feels on a relationship; potentially, an individual surmises that while they may deserve better, they may not be capable of finding another partner who can satisfy that need. Assessments based on these two relational benchmarks influence if a relationship can be maintained or should be terminated.
The assessment of CL and CLalt are then critical components for relational partners evaluating their dependence on each other. These benchmarks help relational partners to evaluate dependence by considering their overall satisfaction with the relationship and that needs are being gratified by a relational partners and alternatives are perceived poorly. If both components are positive, partners are more dependent and more likely to shift their focus from pursuing self-interests and beginning to prioritize the need to accommodate relational partners. These relational benchmarks are linked to positive affect, suggesting that persistence or maintenance of relationships depend upon a positive net gain; however, relationships can persist with limited positive outcomes or even negative outcomes (Katz, Kuffel, & Brown, 2006; Rusbult & Martz, 1995). In turn, the interdependence may be inadequate when considering the possible connections between health-discouraging behaviors and dependence within relationships.

**Investment Model**

Although the investment model has not been applied to STI screening behaviors, it may be a potentially useful framework for exploring the association between sexual health decision-making and relationship characteristics. Building on interdependence theory, Rusbult’s (1983) investment model posits that persistence in and dependence on a relationship is based on more than the positive qualities which attract relational partners. The investment model suggests dependence in romantic relationships is based on three criteria including the assessment of satisfaction and the quality of alternatives. Rusbult’s (1983) third criterion for dependence in a relationship focuses on the size of investment such that high investment is associated with greater dependence. Investment refers to
important resources directly or indirectly linked to the relationship, including co-owned possessions or property as well as support and social networks (Agnew et al., 1998; Rusbult, 1983). Investment represents those resources that would be lost if the relationship were to be terminated. The desire to retain access to or simply maintain these shared resources may help to explain how relationships which lack rewards continue.

Investment may help to explain partners’ willingness to tolerate or engage in risky behavior. Davidovich, De Wit, and Stroebe (2006) found high relational investment was associated with unprotected sex for gay men in long-term, monogamous relationships. The authors suggest this finding contradicts the investment model’s predictions regarding investment as such risky behavior could limit the sustainability of a relationship; however, this suggestion presumes relational partners are not attaching additional meaning to risky behaviors. Moreover, if those risk behaviors have relational value, those behaviors are far less likely to be perceived as risky. Relational investment can reduce individual’s perceptions of risk and vulnerability to STIs because relational concerns are more imperative than health concerns (Cline, 2011; Misovich et al., 1997). Further, a sense of investment is often accompanied by a presumption of monogamy, which can be understood as a means of protecting one’s self against STIs (Noar et al., 2004). An increased sense of investment may motivate individuals to discontinue safe-sex practices before partners have evidence that it is safe to do so.

The investment model further extends work on interdependence through its conception of commitment. Commitment in a relationship suggests that individuals have an intrinsic motivation to continue a relationship, assume a relationship has a future, and
relational partners ultimately influence one another’s emotional states. In turn, commitment is considered a subjective state that relational partners experience daily (Agnew et al., 1998), and is a product of satisfaction, perceived alternatives, and investment. A trajectory for developing a sense of commitment varies and partners may develop a sense of commitment differently (Afifi, 1999), but Rusbult (1983) suggests high satisfaction, low quality of alternatives, and high investment will contribute to greater commitment.

H1a: Satisfaction will be positively associated with commitment.

H1b: Quality of alternatives will be negatively associated with commitment.

H1c: Investment will be positively associated with commitment.

Presumptions about commitment, by one or both relational partners, could have consequences for partners’ health as greater relational commitment means partners are considering the potential outcomes of certain health behaviors. For example, individuals are less likely to use condoms in stable, long-term relationships compared to casual relationships as their use is associated with diminished trust and possibly infidelity (Cline, 2011; Fortenberry et al., 2002; Tucker, Elliott, Wenzel, & Hambarsoomian, 2007). Overall, as commitment increases, partners are less likely to believe partners may threaten their health, leading to a reduction in safe sex practices (Gerrard, Gibbons, & Bushman, 1996). Perceptions of commitment can lead romantic partners to confound a sense of emotional safety with physical safety (Comer & Nemeroff, 2000), leaving partners vulnerable to STIs. As such, commitment may simultaneously encourage
individuals to engage in risky behaviors to reinforce their commitment as well as perceive themselves as invulnerable to STIs.

H2: Commitment will be negatively associated with intentions to discuss STI testing and to seek STI testing.

Finally, the investment model suggests commitment is an intermediary variable between the elements of dependence (e.g., satisfaction, quality of alternatives, and investment) and behavioral outcomes (Lehmiller et al., 2012). Rusbult (1983) further suggested commitment is a more effective predictor of behavioral outcomes than dependence because it is a more proximal antecedent of behavioral outcomes and has greater influence on day-to-day decision-making. Indeed, Bakker and colleagues (1994) found that commitment significantly predicted not engaging in extradyadic sex, and when a partner did have sex outside the relationship, commitment significantly predicted engaging in safe sex practices whereas dependence did not have a direct influence. As such, although the three components of dependence contribute to an individual’s perception of commitment, commitment alone may be more useful for predicting behavioral outcomes.

H3a: Commitment will mediate the relationship between the satisfaction, quality of alternatives, and investment and intentions to seek STI testing.

H3b: Commitment will mediate the relationship between the satisfaction, quality of alternatives, and investment and intentions to discuss STI testing.
Theory of Planned Behavior

The theories of reasoned action (TRA) and planned behavior (TPB) assume human beings are rational actors systematically considering the information available to them (Azjen, 1985; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Ajzen (1985) suggested the TRA was most valuable when considering behavior that was “under volitional control” or behaviors only controlled by one individual. As such, the TRA may be more appropriate for predicting STI testing given engaging in the behavior is solely within the control of one individual; however, individuals within relationships may not necessarily perceive the decision to test as only relevant to themselves and this may alter their perceived behavioral control (PBC), or perceptions about their ability to perform a particular task. The investment model suggests partners begin to consider how decision-making becomes interconnected within relationships and in turn, the decision to test may be tied to concerns for their partner (Kelley, 1979; Kelley & Thibaut, 1959). Studies have found the desire to stop using condoms with a partner or concerns for a current partner motivated seeking STI screening (Balfe & Brugha, 2009; Dixon-Woods et al., 2001), which suggests when considering STI testing for individuals in relationships, the TPB may be more appropriate.

In the TPB, intentions are the primary determinant of behavior (Ajzen & Fishbein, 2005). Attitudes, subjective norms, and perceived behavioral control (PBC) contribute to an individual’s intentions which in turn, contribute to a specific behavior; however, as empirical work and meta-analyses demonstrate, the link between intentions and behavior is debated (Abraham & Sheeran, 2003; Armitage & Conner, 2001; Conner & Armitage,
Although the intention to test may not necessarily correspond with behavior, exploring the attitudes, subjective norms, and PBC related to individuals’ intentions to seek STI testing is crucial to better understanding the behavior.

**Attitudes**

Attitudes are composed of two components: beliefs and evaluations. An individual’s belief about outcomes of performing a certain behavior are weighted by an evaluation of those outcomes (Ajzen & Fishbein, 2005). Positive attitudes result when an individual holds a belief and positively evaluates the outcomes associated with engaging in the behavior. Conversely, negative attitudes are the product of having a belief and negatively evaluating the outcomes of performing that behavior.

Attitudes towards STI-testing have been found to be key barriers to encouraging STI-screening, particularly testing completed in clinics. STI-testing has been found to be associated with negative outcomes including being perceived as promiscuous and irresponsible. Further, individuals were concerned about the potential for gossip, embarrassment, women being judged more stringently than men, and positive test results (Barth et al., 2002; Chacko et al., 2006; Ford et al., 2004). The stigma associated with STI testing has been found to inhibit individuals’ willingness to be tested. Greater levels of perceived stigma towards STIs are associated with lower intentions to test (Cunningham, Kerrigan, Jennings, & Ellen, 2009), but other empirical work suggests that intentions towards testing can be influenced by more than perceptions of STIs.

Though limited, some research suggests being in romantic relationships may influence attitudes towards STI-testing. Banikarim and colleagues (2003) found women
had more positive attitudes towards STI testing when changing partners. Women reported positive attitudes towards screening for chlamydia and gonorrhea after having sex with a new partner (Chacko et al., 2006). Balfe and Brugha (2009) suggested a transitional period, replacing condom use with hormonal birth control, was associated with more favorable perceptions of STI testing. Not using condoms has been associated with escalating intimacy (Fortenberry et al., 2002), so there is the potential that attitudes towards testing in a relationship are more positive because planning to have an STI-test represents increasing intimacy and trust. Empirical evidence further suggests those in monogamous relationships have more negative attitudes towards STI-testing and lower intentions to test (Opt & Loffredo, 2004). In turn, developing relationships may offer a unique time point at which to encourage individuals to reevaluate perceptions regarding STI screening.

**Subjective Norms**

Subjective norms are comprised of an individual’s perceptions about how important referents want them to behave and the individual’s motivation to comply with those perceptions (Ajzen & Fishbein, 2005). Subjective norms play a critical role in evaluations of behaviors, particularly those with social consequences. As such, perceptions of and decisions about sexual health are influenced by subjective norms. Meta-analyses, though, suggest norms have limited influence on behavior compared to other components of the TRA/TPB (Armitage & Connor, 2001). Mixed findings concerning the role of norms in behavioral intentions may be the result of key
methodological issues. Notably, the reliance on important others when considering possible referents for subjective norms may limit the influence of the construct.

Referent others could encompass family members, friends or other members of one’s social network, and medical personnel (Misovich et al., 1997). Empirical work more broadly exploring norms has found these referent others to be less significant in understanding sexual health behavior. Boudewyns and Paquin (2011) and Booth and colleagues (2013, 2014) found subjective norms to be significant predictors of STI screening intentions, but norms were not the best predictors of intentions in their studies. Close relationships, though, can alter the salience of referent others (Corby, Jamner, & Wolitski, 1996). The normative influence of partners should be greater and existing evidence supports this. Corby and colleagues found greater motivation to comply with primary partners, which increased HIV-prevention behaviors. One study compared the normative influence of “important others” and steady partners on monogamy and condom use, finding partners norms to be stronger predictors of both behaviors (Beadnell et al., 2008). Partner norms have also been found to predict short- and long-term prevention behavior (Hood & Shook, 2014; Kashmina, Gallois, & McCamish, 1993; Misovich et al., 1997; Thomas, Shiels, & Gabbay, 2014). As such, this study will focus on the role of partner norms in determining behavioral intentions.

**Perceived Behavioral Control**

The TPB extended the TRA with the inclusion of perceived behavioral control (PBC), an individual’s perceptions of their ability to perform a given behavior (Ajzen, 1985, 1991). Personal volition is a key element in other models concerned with behavior
change including social cognitive theory (Bandura, 1977), health belief model (Rosenstock, 1974), and protection motivation theory (Rogers, 1975). PBC is influenced by beliefs concerning one’s access to potential resources, both material and social, which are then weighted by the potential for those resources to facilitate or inhibit a sense of control. Factors that may inhibit or facilitate behavior are known as control beliefs and they encompass both elements of internal control (e.g., personal ability, skills) and external control (e.g., opportunity, dependence on others, physical or financial barriers). Individuals who perceive they have access to resources with few obstacles are more likely to have a greater PBC, whereas those who perceive fewer resources and greater obstacles will have a diminished sense of PBC. Within the TPB, PBC influences intention and behavior, representing potential constraints on behavior as well as helping to explain why intentions do not consistently predict behavior (Armitage & Connor, 2001).

Much like subjective norms, few studies have explored the relationship between PBC and STI screening behaviors. PBC has been found to be a significant predictor of STI screening intentions (Booth et al., 2013; Booth et al., 2014; Boudewyns & Paquin, 2014). Additionally, PBC has been found to be an important component of other sexual health behaviors. In particular, when considering condom negotiation for women, PBC is an integral variable and has been found to be significant in intentions to request that partners use condoms as well as general intentions to use condoms (Albarracín, et al., 2001; Fazekas, Senn, & Ledgerwood, 2001). Similarly, Bryan, Fisher, and Fisher (2002)
found a significant association between PBC and preparatory behaviors, which included obtaining, carrying, and discussing condoms.

In addition to concerns with partners, there are other potential barriers to screening. Several studies report multiple obstacles to encouraging STI screening including the cost (Balfe & Brugha, 2009), access to services (Dixon-Woods et al., 2001), accurate knowledge about STIs and screening (Noar, Zimmerman, & Atwood, 2004; Uhrig, Friedman, Poehlman, Scales, & Forsythe, 2013), and psychosocial concerns like embarrassment and fears of being stigmatized (Backonja, Royer, & Lauver, 2014; Balfe & Brugha, 2009; Dixon-Woods et al., 2001). As such, PBC should be included for any exploration of STI screening behavior.

**Intentions**

In the TPB and related theories, intentions are the primary determinant of behavior (Ajzen & Fishbein, 2005). According to the TPB, attitudes, subjective norms, and PBC contribute to an individual’s decision to act which in turn, is meant to lead to a specific behavior; however, as empirical work and meta-analyses demonstrate, the link between intentions and behavior is debated (Abraham & Sheeran, 2003; Armitage & Conner, 2001; Conner & Armitage, 1998; Conner & Godin, 2007). Webb and Sheeran (2006) suggested the difference between health-protective and health-risk behaviors may help to explain the varied results concerning intentions and behaviors. Health-protective refers to deliberate behaviors entailing some degree of planning and health-risk behaviors are typically unconscious and carry a sense of social consequence if not enacted. In turn,
health-risk behaviors are reactionary and are typically enacted in a social environment, which may interfere with behavioral intentions.

Although the intention to test may not necessarily correspond with behavior, exploring variables that increase individuals’ intentions to seek STI testing is crucial to increasing the behavior. Studies have found a sense of obligation towards one partner influences an individual’s intentions to test (Balfe & Brugha, 2014; Boudewyns & Paquin, 2011; Mevissen et al., 2011), indicating relationship-oriented variables may clarify our understanding of screening behavior. Relationships are perceived as a means to protect against STIs (Noar et al., 2004) and can increase a sense of invulnerability (Millstein & Halpern-Felsher, 2002). In turn, as this study is primarily concerned with testing in relationships, considering the individual-level variables of the TPB and relationship variables of the investment model may increase our understanding of what factors may influence STI screening behavioral intentions. See Figure 1 for a summary of hypotheses.

H4a: Attitudes, partner norms, and PBC will be positively associated with intentions to seek STI testing.

H4b: Attitudes, partner norms, and PBC will be positively associated with intentions to discuss STI testing.
Figure 1. Conceptual model. Indirect effects for H3a and H3b tested, but are not depicted.

**Sexual Risk-Taking and Romantic Relationships**

The CDC suggests the best way to prevent the transmission of sexually transmitted infections (STIs), if abstinence is not a possibility, is to be in a long-term, mutually monogamous relationship with an uninfected relationship partner (CDC, 2016). For this solution to be viable, partners must seek testing to confirm that partners are uninfected; however, this can be difficult for partners as discussing and seeking testing for STIs remains taboo (Cline, 2011; Misovich, Fisher, & Fisher, 1997). Further, romantic partners do not typically perceive one another as possible sources of risk and
they may also be concerned about how discussing STIs will impact their relationship. (Hammer, Fisher, & Fisher, 1996; Pilkington & Richardson, 1988). Relationship partners may not actively address safe sex practices, including STI testing, and concerns about relationship development or stability may be decreasing the likelihood individuals will discuss STIs with partners or seek testing to confirm infection status for themselves and partners (Noar, Atwood, & Zimmerman, 2004). In turn, examining how being in a relationship influences decisions to discuss STIs and seek testing may offer unique insight into understanding sexual health decision-making for young adults.

Finally, a critical component in making effective choices about safe sex practices with partners is honest dialogue. There is limited research considering how partners specifically discuss STIs and testing, but other literature concerning conversations about other safe sex practices offer important insights. Conversations alone cannot protect individuals, but conversation about previous partners and use of contraceptives is important for establishing safe relationships. Unfortunately, these conversations happen infrequently. Desiderato and Crawford (1995) found nearly half of partners did not disclose information about previous partners. Lucchetti (1999) found one-third of participants did not disclose information about previous partners and Horan (2015) found 20% of participants never discussed previous relationships with current partners. Anderson and colleagues (2011) identified four potential reasons why individuals may avoid these conversations. Their analysis suggested topic avoidance could primarily be linked to possibly destabilizing a new relationship because direct conversations could upset current partners by sparking jealousy or inadvertently creating doubt about the
relationship. This kind of relationship-oriented topic has been found to be taboo in close relationships, so individuals may be avoiding these topics because they are perceived as risky and possibly damaging (Baxter & Wilmot, 1985). As such, further study of how conversations about safe sex and STIs and testing in is needed, so the following research questions were offered.

RQ1: How do individuals evaluate their personal risk?

RQ2: What role do conversations about STIs play in close relationships?
Chapter 3: Study 1

Method

This study used a cross-sectional design using qualitative methods to investigate individuals’ perceptions of their personal risk (RQ1) and what role conversations about STI-testing may have in close relationships (RQ2) in a sample of undergraduates. When participants arrived at the lab, the researcher explained the study and participants then received and signed the consent form. The interviews averaged 25 minutes in length and took place in a private room on campus. All interviews were conducted by the researcher. After the interview, participants completed a questionnaire asking about general demographic information, previous sexual behaviors including number of sexual partners and condom usage, and information related to their current relationship or their previous relationship experiences.

Participants

After IRB approval was obtained, thirty-two semi-structured interviews were conducted with college students at a large, Midwestern university. The students were recruited using a participant pool composed of students from undergraduate communication courses. A description of the study was provided via the participant pool interface. This description focused on discussions of difficult topics in romantic relationships, so there was no explicit mention of STIs in the study description with the
intent of minimizing selection bias in the sample. In exchange for participation in the study, individuals received course credit. Experiences of individuals in relationships were primarily sought, but those who were not currently in relationships were not excluded given their capacity to contribute relevant information. As such, this study relied on a combination of purposeful and convenience sampling, so there is the possibility that the sample lacked maximum variability as some participants may have chosen not to participate based on the study’s description; however, this method still allowed for the purposeful recruitment of participants in relationships while also recruiting those not in relationships who may have had perceptions that differed from those in relationships.

Although there is no specific standard for establishing sample size in qualitative work (Sandelowski, 1995; Tuckett, 2004), in the present study, interviews were conducted until saturation was reached and no new information emerged. Saturation is a subjective determination by the researcher that additional data will not result in new information, themes, or categories (Corbin & Strauss, 2008; Glaser & Strauss, 1965). The final sample was composed of 53.1% women and 43.8% men. The participants’ ages ranged from 18 to 26 ($M = 19.65, SD = 1.06$). Of the interviewees, 75% were White, 15.6% African-American, 3% Central Asian, and 3% Hispanic or Latino/a. All participants identified as heterosexual, with 71.9% currently in a relationship. Initial prescreening identified two additional participants as being in a relationship, but by the time of the interview the participants had ended a relationship. Finally, 37.5% indicated that they had sought STI testing at some point.
Data Analysis

The data were analyzed using content analysis. Interviews were audio-recorded with the interviewee’s consent and later transcribed by a commercial transcription service and were checked for accuracy while reviewing each interview. Transcribed interviews were read and analyzed by the author using the constant comparative method (Corbin & Strauss, 2008; Glaser & Strauss, 1965). In the early stages of analysis, open coding was used to group data into codes. Axial coding was then used to group the first level codes into themes and to explore the relationships among the themes. As each transcript was read, it was constantly compared to previously analyzed interviews, which allowed data to be grouped into categories or themes. Additionally, this approach ensured that themes arising in later interviews were tested against earlier transcripts. For the final presentation of results, all participants were assigned pseudonyms.

Results

Individuals used conversation as a way to assess threat to both their physical health as well as potential relationships; however, the existence of a relationship frequently dictated how directly concerns about STIs and testing were addressed. As such, the analysis will be split into two sections with one considering the use of conversations prior to forming a relationship and the other focusing on conversations after a relationship has been established. This division is important as the perceptions held outside of a relationship carry over into the establishment of a relationship and these same perceptions can impact how an individual evaluates his or her own risk to infection, which have the potential to negatively impact the health of a relationship partner.
Outside of a Relationship

Before a relationship was established, individuals reported using conversations as a means of assessing the general safety of their partners, but these conversations tended to be more indirect and rarely involved asking about STIs or previous testing. Participants indicated having two primary strategies, derived from conversations, which were used to assess their potential risk: “knowing” and “being selective.” It is important to note that while knowing and being selective were mentioned separately they frequently co-occurred and often reinforced one another, such that knowing a partner made someone selective and being selective meant partners probably knew each other.

“Knowing.” Participants repeatedly emphasized the importance of knowing and how knowing one’s partner was critical to protecting oneself. Knowing a partner meant being able to assess the risk of a potential partner, but there was no formal means of verifying the accuracy of these assessments. Further, the parameters or benchmarks for knowing are relatively fluid with some respondents suggesting that a friend or other close contact knowing a particular person may be enough for them to know a partner. Mike, who reported wanting to be abstinent until marriage, stated: “Thing is, I think most people that are having sex they know each other basically.” Although this participant may not have direct experience, he presumed partners have exchanged information at some point. Other participants offered similar thoughts. Leah suggested unprotected sex with an unfamiliar person was riskier than unprotected sex with someone you know: “A lot of people go around and do what they want with people they don’t know very well, and I feel like that’s very risky compared to waiting for a relationship.” Knowing the other
person contributed to participants considering themselves safe from infection: knowing one’s partner was often treated as a proxy for trust. More importantly, though, participants did not generally consider themselves to be at risk for the transmission of STIs.

Another key element of knowing is how individuals understand their own risk. Generally, respondents indicated their behaviors were not risky and protected them from infection, even when they acknowledged engaging in potentially dangerous behaviors. Sara, who had not been tested, indicated she and her current partner had not discussed STIs and did not consistently use condoms: “We weren’t using condoms, but I’m on birth control . . . I mean it was not as smart as it should have been.” She recognizes the potential issues, but goes on to say she and her partner do practice safe sex. Other participants echoed a similar sentiment, that unprotected sex with someone familiar is inherently safer than unprotected sex with an unfamiliar person. As such, instances of unprotected sex are not necessarily considered unsafe and may contribute to an inaccurate evaluation of one’s vulnerability to transmission.

“Be selective.” Based on the knowledge previously gathered, individuals then strive to be selective with their choice of partners. Several participants reported the importance of “being selective” with partners, but determining the relative safety of a potential partner was often based on otherwise ancillary information because participants indicated a general unwillingness to discuss STIs and testing with someone who was not a partner. As such, being selective was based on personal presumptions about safety. Several participants indicated that having sex in a relationship was inherently safer even
if partners had not verified their STI status. Leah, who had not been tested, indicated “I had boyfriends mostly; I’m more of a person who’s always had a boyfriend so I know the relationships of people I’ve had sexual relationships with. I’ve never really been at risk.” Opting to have sex only in relationships meant that individuals had been selective, so they did not need to be concerned about their health or safety.

Other participants, predominantly male, also indicated using presumptions about appropriate behavior as helpful in being selective. For example, John indicated that if a partner had volunteered information about their sexual history, they would be more likely to reject or avoid that person: “I would appreciate the honesty, but it would be red flags.” The relative willingness to discuss STIs and safe sex practices would be interpreted negatively. He felt that a direct conversation about safer sex practices, particularly from a woman, would make him uncomfortable and suggest the other person likely had reasons to be concerned about their health. Moreover, he and other participants, both male and female, suggested that if the other person was willing to provide that information early in an interaction or relationship, he or she likely had reasons to be concerned about their health and should be avoided.

**Developing Relationships**

Once in a relationship, individuals were more willing to have direct conversations with partners. In turn, participants considered two key issues when discussing STIs and testing as well as other safe sex practices with their partners: relationship expectations and timing.
**Relationship Expectations.** Participants indicated conversations about safe sex practices, but particularly discussing STIs, were inherently risky in relationships because of how such a conversation could influence the dynamics of the relationship. Specifically, having conversations about STIs signaled that partners were ready to intensify the relationship: “It [the conversation] can mean that it’s getting pretty serious. That you probably want to think about things long-term with the person or get to know them better. I feel like that’s a big step in making a serious relationship” (Tina). Similarly, another participant indicated the conversation may further develop a romantic relationship because it may help to establish boundaries in the relationship:

I feel like it [conversation] makes a relationship stronger and it definitely progresses how you feel with each other. . . That you’re becoming more exclusive with that person. Um, I mean, it was brought in mine, for example, because we were starting to develop more of a relationship and having more of a bonding and liking for each other. And it kind of initiated exclusiveness. (Emily)

Other participants also referred to having conversations about STIs and testing to be a turning point in a relationship. Sara indicated that having these conversations adds depth to the relationship: “meaningful relationships create safety for the people in them.” Further, a willingness to such a conversation indicated a level of care and concern demonstrative of a committed relationship.

Contrary to this, one participant reported having the conversation was not a means of intensifying her relationship. Emma indicated the conversation did not hinder the development of the relationship but also did not increase feelings of closeness: “it [the
conversation] wasn’t a big deal, I guess.” The same participant, though, indicated if her partner had been unwilling to have this conversation that it would have been problematic for her relationship: “If I would have gotten a different response, then I probably I would have been quick to leave, I guess, and more closed in after I gave that information, if I found he was acting funny, or something like that. I don't know really.” Another participant, Kelly, echoed this concern: “If someone didn't want to get tested and they had multiple sexual partners or something before a relationship, they don't want to get tested, I think that would definitely create a trust thing like why not [get tested].” Although having a conversation about STIs and testing may not always further develop a romantic relationship, being unwilling or reluctant to have the conversation can be a deterrent to further developing a relationship. Refusing to be tested could be interpreted as an indication of the person being untrustworthy.

Potentially in reaction to this perception about relationship expectations and discussing STIs, some participants indicated an unwillingness to have a conversation about STIs and testing if they were not interested in a long-term relationship. One participant indicated he would avoid having a conversation about STIs and testing as well as safe sex because of how the conversation may change the relationship dynamic:

Having this conversation would be very difficult for me because it would almost be equivalent of talking to a girl about, you know long term plans, like I want to have kids, I want to get married, I want to live here. Those kind of conversations are right there with safe sex, I would think. So, to have this conversation means that you are opening up to her, letting her know that you like her and that can be
very awkward to guys especially when they are on fence on whether they want to
date this girl or they just enjoy hanging out with her every once in a while. I mean
it’s like a serious conversation. (Jake)

Willingness to have conversations about STIs with a partner were dependent on how
serious individuals felt about their partners. In turn, participants indicated short-term
relationships or those with more casual partners did not warrant these conversations.
Some further indicated given the perceived seriousness of discussing STIs that they
would not discuss the topic because “people have different expectations for a
relationship” and did not want to inadvertently misrepresent their intentions for the
relationship.

Individuals may have developed this perception that discussing STIs and testing
intersects with commitment due to the personal risks associated with the discussion.
Typically, participants did not indicate much concern about their personal physical
health, but rather how this conversation may make them feel exposed. One participant
suggested this may be the case because of the vulnerability of discussing one’s body with
a partner:

A willingness to be very vulnerable with your partner demonstrates commitment.
This is a very conscious decision, so these conversations seldom happen in a
vacuum. . . it also means that they are comfortable with the partner knowing
everything about their body and if they do have something then they are OK
[participant emphasis] with the partner knowing or if they don’t they are happy to
show the partner that nothing is wrong. (Tim)
Many respondents echoed this as well as noting that discussing and seeking testing left them open to being labeled as “dirty.” Revealing is difficult, so the willingness to discuss a difficult topic with a partner was considered demonstrative of intentions to continue the relationship. Further, discussing STIs and testing carries with it the potential for a partner to reveal or receive information about someone’s positive status. In turn, willingness to have the discussion was also the willingness to potentially take on the burden of any associated stigma for their partner. It is important to note, though, that although participants felt these conversations could contribute to the development of a relationship, few reported having sought testing after the conversation.

**Timing**

Timing of the conversation is inherently intertwined with how relationship expectations may change. There was consensus about the importance of having such conversations as well as the potential outcomes of that conversation, but many of these perceptions were related to when the conversation occurred in the development of the relationship. A well-timed conversation could strengthen a relationship and possibly increase stability. Conversely, poor timing could easily jeopardize the development of a relationship and even inadvertently push a partner away. Concern about the timing of the conversation was linked to how intimate a relationship was. Given the potential impact on a relationship, participants repeatedly indicated conversations about STIs and STI-testing would not be possible if partners did not have some degree of trust. One participant indicated “I feel like if people don't have the intimate relationship with someone, like close relationship they probably won't [have the conversation]” (John).
Another participant indicated “once you get to a level it gets easier. Whenever you hit that, it is like a good time to talk about it” (Dan). Trust makes it easier to have a conversation about STIs, but many participants indicated that a sense of trust did not develop until after having sex with a partner. As such, individuals may have already placed themselves at risk by the time the conversation occurs.

Generally, participants agreed the conversations would be easier to have if trust had been established, but they also indicated having the conversation early in the relationship was important. As such, participants were concerned about mistiming the conversation and having a partner misunderstand their intentions. For example, Sarah suggested having the conversation too early may inadvertently signal a greater emphasis on the potential physical aspects of their relationship: “Well, I think that if you talk about it right off the bat after you first met then it definitely gives a signal that the person is more into the physical part of the relationship [rather than] the actual talking and feelings and the emotional part of it.” Concurrently, participants indicated discussing STIs and testing may be inherently insulting or accusatory, leading to anger or hurt feelings, so having the conversation too soon may intensify a partner’s reaction. Tasha recalled asking a previous partner early in their relationship to be tested, indicating that her partner did respond negatively: “It [the conversation] didn’t go so good, he felt that I didn’t trust him. That’s when we first started talking about getting tested. It wasn’t something easy, it wasn’t easy at all.”

Although it may seem natural for concerns with physical health to be part of these conversations, participants did not indicate much conversation about physical health;
however, several participants suggested emphasizing physical health or safety was an effective way to begin a discussion about STIs and testing without having concerns about having the conversation too soon. Nathan stated “if you lead in with that and you just say I want to be on the safe side, it is nothing about you or who you had been with in the past then I think it can take a lot of the, lessen a blow I guess, to the person being asked to be checked or be tested.” Emphasizing physical health may help to minimize potential damage to the relationship because it potentially shifts the focus of the conversations from the partner’s possible infection status to the individual asking. Sara suggested that discussing STIs may be inherently insulting: “I feel like guys would kind of be offended. Girls would probably be too. Just like, thinking that when you talk about STDs people usually think that, like, you’re having sex with a lot of people and it’s unprotected.” Addressing health is important, but it is secondary to concerns about damaging the relationship or offending a partner.

**Discussion**

The purpose of the present study was to examine what role conversations about STIs and testing have in relationships. Participants consistently indicated conversations played an integral role in how they evaluated both their personal risk and relational stability. Conversations helped participants to feel secure in their decisions regarding their choice of partner and subsequent decisions about sex. In turn, few participants felt they were not vulnerable to the transmission of infection. Unfortunately, few participants indicated verifying their partner’s information and, with limited exceptions, participants did not explicitly consider whether or not a partner had been honest in these discussions.
The results of this study suggest individuals may be aware of the importance of having conversations about STIs and testing and may be willing to have such conversations with partners, but these conversations may be occurring after sex and there may be limited motivation to confirm the accuracy of those conversations.

The most important finding of the study is concerned with how discussions of STIs and testing are linked to the development of a committed relationship. Nearly all participants, whether they were in a relationship or not and whether or not they had ever had sex, suggested that the willingness to have a conversation about STIs and testing meant a relationship was intensifying. Further, for the few respondents who stated a conversation about STIs did not progress their relationship, they did indicate that a refusal to have the conversation would have halted any further development of their current relationship. Overall, though, individuals reported having discussions about previous partners and experiences with testing and perceived the conversations positively and have value in their relationships because it suggests a partner’s care and intent to continue in the relationship.

One key issue not addressed by participants of this study is honesty. Several studies have documented how frequently partners may be dishonest about their sexual history with both casual and committed partners (Horan, 2015; Lehmiller, VanderDrift, & Kelly, 2014; Luchetti, 1999). Only one participant suggested any concern that a partner may try to lie: “I don’t trust men; we need to lookout for ourselves.” The same participant indicated that when she and a romantic partner sought testing they would go together to
“keep it honest.” Overall, though, participants did not indicate that they were skeptical or suspicious of the information provided by their partners.

**Future Directions**

The findings of this study suggest that as commitment develops individuals may be more willing to seek and discuss STI testing. Participants noted, though, waiting too long to have the conversation can negatively impact the relationship and may be less willing to engage in those same behaviors after they believe commitment is more established. Concurrently, there were also participants who suggested that they would be unwilling to seek or discuss testing outside of a relationship. In turn, commitment seems to be an important construct to better understand STI behaviors. As such, the next study considers the role of commitment on STI testing behaviors.
Chapter 4: Study 2

Purpose

Study 2 was designed to investigate individual and relational determinants of STI screening behaviors proposed in the hypotheses. Specifically, the TPB and investment model were used to explore the relationships between individual and relationship characteristics and intentions to seek and discuss STI testing.

Method

Participants (N = 327) were recruited through Qualtrics. Participants were screened for relationship status, such that they had to be in committed relationships but not married. In turn, 110 participants reported that they had been in a relationship for less than six months, 108 reported being in a relationship between 6-12 months, and 109 reported being in a relationship for over 12 months. No participants reported being previously married. The final sample was 70.8% female with 68.8% identifying as white, 18.7% as African-American, 10.5% as Hispanic or Latino/a, and 2% as multiracial with a mean age of 30.37 (SD = 8.40; range: 26-52). Eighty-five percent of participants identified as heterosexual, 10% as bisexual, 3% as homosexual, and 2% declined to answer.
Measures

**Investment model.** Items developed by Rusbult, Martz, and Agnew (1998) were used to measure investment, satisfaction, quality of alternatives, and commitment. All items were measured using a fully-labeled scale (0 = *do not agree at all*, 8 = *agree completely*).

**Satisfaction.** Satisfaction was measured using five items. Example items included “my relationship is close to ideal” and “my relationship is much better than others’ relationships” (α = .92; M = 3.32, SD = .74).

**Quality of alternatives.** Quality of alternatives was measured with five items. Example items included “the people other than my partner with whom I might become involved are very appealing” and “my alternatives are attractive to me (dating another, spending time with friends, or on my own etc.)” (α = .95; M = 2.13, SD = 1.02).

**Investment.** Investment was also measured with five items. Example items included “I have put a great deal into our relationship that I would lose if the relationship were to end” and “I feel very involved in our relationship – like I have put a great deal into it” (α = .85; M = 3.24, SD = .69).

**Commitment.** Commitment was measured with seven items. Example items included “I am committed to maintaining my relationship with my partner” and “I want our relationship to last forever” (α = .89; M = 7.02, SD = 1.54).

**Theory of planned behavior.** Items developed by Fishbein and Ajzen (2010) were used to measure attitudes, partner norms, PBC, and behavioral intentions. Items were adapted to fit the context of the study (e.g., discussing STD testing and intentions to
seek STD testing). Additionally, for quantitative items, the acronym STD was used for clarity because participants in study one indicated being less familiar with the STI acronym.

**Attitudes.** Attitudes towards discussing STI testing and STI testing were both measured using seven semantic-differential scales using seven-point scales. Items were coded, so that higher number represented more positive attitudes. For discussing STI testing, responses to the statement, “for me, discussing STI screening with my romantic partner in the next 3 months would be: (bad-good, harmful-beneficial, easy-difficult, etc.).” For STI testing, participants were asked to consider the statement “for me, getting tested for STDs in the next 3 months would be” with the same scale endpoints. The seven items were averaged for both discussing STI testing ($\alpha = .87, M = 5.01, SD = 1.36$) and STI testing ($\alpha = .84, M = 4.82, SD = 1.37$).

**Partner norms.** Partner norms were assessed with three items each for discussing testing and seeking testing, using a fully labeled five-point scale ($1 = they think I probably should not, 5 = they think I probably should$). For discussing testing, an example item is, “how much does your romantic partner think you should or should not talk about being tested for STDs, if you are sexually active?” For testing, an example items is, “how much does your romantic partner think you should or should not get tested for STIs every year, if you are sexually active?” The three items were averaged to create a partner norms scale for discussing testing ($\alpha = .88; M = 3.49, SD = .93$) and STI testing ($\alpha = .87; M = 3.45, SD = .91$).
**Perceived behavioral control.** PBC for having a discussion about STIs was measured with two items, using a fully labeled five-point scale (1 = *strongly disagree*, 5 = *strongly agree*). The items were “I am confident that if I wanted to, I could have a conversation about STD screening with my romantic partner in the next 3 months” and “My having a conversation about STD screening with my most recent romantic partner in the next 3 months is completely in my control.” The mean value of the two items was used for analysis (M = 4.07, SD = .83). PBC for STI testing was measured using three items, using a fully labeled five-point scale (1 = *strongly disagree*, 5 = *strongly agree*). An example item is “My getting tested for STDs in the next 3 months is completely in my control.” The items were averaged to create a composite score for PBC related to STI testing (α = .80; M = 4.21, SD = .70).

**Intentions.** Intentions for both discussing and seeking STI testing were measured using five items. The response scale for three of the items ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The other two items also used five-point scales. One used the endpoints 1 (*very unlikely*) and 5 (*very likely*) for “how likely is it that you will have a discussion with your romantic partner about being tested/be tested for STIs in the next 3 months?” The other used 1 (*very unwilling*) and 5 (*very willing*) for “How willing are you to have a conversation about seeking STD testing in the next 3 months?/how willing are you to seek STD testing in the next three months?” The five items were then averaged for discussing STI testing (α = .90; M = 3.09, SD = 1.06) and seeking STI testing (α = .92; M = 3.05, SD = 1.13).
Control variables

**Number of sex partners.** Participants were asked to estimate the number of sex partners they have had in their lifetime. Participants reported an average number of 8.85 ($SD = 6.00$) partners for vaginal sex, 7.89 ($SD = 3.40$) partners for oral sex, and 3.71 ($SD = 1.42$) partners for anal sex.

**Prior safe sex behaviors.** Participants were asked about their behavior with their current partners. Participants were asked about their condom usage with their current partner on a 12-point scale (1 = never, 2 = 1-10%, 3 = 11-20%, 4 = 21-30%, 5 = 31-40%, 6 = 41-50%, 7 = 5-60%, 8 = 61-70%, 9 = 71-80%, 10 = 81-90%, 11 = 91-99%, 12 = 100% always). Nearly half of participants, 49% reported that they never use condoms with their partners ($M = 4.75, SD = 4.52$). Participants were also asked about their previous testing experience with 66% indicating they had been tested in their lifetime. Sixteen participants, or 4.5%, reported having been diagnosed with an STI.

**Partner communication scale.** The partner communication scale is a five-item scale that assesses the frequency of communication with a sex partner (Milhausen, Sales, & DiClemente, 2007). The scale was modified to refer to participants’ current romantic partner. Participants are asked if they have discussed STDs, HIV/AIDS, condom use, and their partner’s sex history using a four-point scale (1 = never, 2 = 1-3 times, 3 = 4-6 times, 4 = 7 or more times). Reliability for the scale was adequate and items were averaged to form a composite score ($\alpha = .88; M = 2.02, SD = .82$).

**Expected relationship duration.** One item was used to assess how long individuals thought they would remain in their current relationships. Participants
responded to “How much longer do you expect the relationship with this person to last?” using a five-point scale (1 = *a few more days*, 2 = *a few more weeks*, 3 = *more than one month but less than a year*, 4 = *several years*, 5 = *lifetime*). The majority of participants, 54.3%, indicated that they intended to remain with their current partner for a lifetime, 29% reported several years, 12% reported more than one month but less than a year, 2% a few more weeks, and 2% a few more days.

**Additional demographics.** Participants were also asked to report their annual income and education level. For annual income, participants answered using a 7-point scale (1 = *less than $25,000*, 2 = $25,000 – $34,999, 3 = $35,000 - $49,999, 4 = $50,000 - $74,999, 5 = $75,000 - $99,999, 6 = $100,000 - $149,999, 7 = *more than $150,000*; M = 3.00, SD = 1.62). Education was measured using a 9-point scale (1 = *some high school*, 2 = *high school graduate*, 3 = *completed some college*, 4 = *trade/technical/vocational training*, 5 = *associate’s degree*, 6 = *bachelor’s degree*, 7 = *completed some postgraduate work*, 8 = *Master’s degree*, 9 = *other advanced degree beyond Master’s*; M = 4.00, SD = 1.95).

**Analysis**

Structural equation modeling (SEM) was used to evaluate the hypotheses and two models were tested: one with intentions to seek testing as the criterion variable and the other with intentions to discuss testing as the criterion variable. The endogenous portion of the model includes the investment model (e.g., satisfaction, quality of alternatives, investment, and commitment) and TPB (e.g., attitudes, partner norms, and PBC). Direct paths were specified from satisfaction, quality of alternatives, and investment to
commitment and from the TPB variables and commitment to intentions. See Figure 1 for summary of hypotheses.

Results

Bivariate correlations of the TPB and investment model constructs are shown in Tables 1 and 2. There were three significant predictors of intentions to seek testing. How long individuals were planning to remain in their current relationship \((b = -.17, p = .002)\), prior testing experience \((b = -.15, p = .01)\), and prior partner communication about safe-sex topics \((b = .31, p = .001)\) were significantly related to testing intentions, accounting for 20.3% of its variance. Similarly, previous testing experience \((b = -.11, p = .03)\), partner communication \((b = .34, p < .001)\), and how long individuals intended to remain in their current relationships \((b = -.14, p = .01)\) were significantly related to intentions to discuss STI testing. These variables accounted for 20.6% of the variance in intentions to discuss testing.

Other demographic variables including sex \((b = .17, p = .44)\), race, annual income \((b = .05, p = .27)\), and education level \((b = .02, p = .41)\) were examined, but none were significant. Additionally, number of lifetime sex partners \((b = .01, p = .43)\), frequency of sex with current partner \((b = .06, p = .56)\), and use of contraception with current partner \((b = .03, p = .10)\) were also considered and found not be significantly related to the criterion variables. Finally, relationship length (e.g., 1-6 months, 6-12 months, more than 12 months) was examined, but there was no significant effect of length on behavioral intentions \((b = .002, p = .88)\). In turn, only prior testing behavior, prior partner
communication behavior, and expected relationship duration were used as control variables. These variables were entered as exogenous in the final structural models.

Table 1

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<td>.66**</td>
<td>.48**</td>
<td>.19**</td>
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</table>

*Note. QA = quality of alternatives, PBC = perceived behavioral control. ** p < .01, *p < .05. Numbers on diagonal are Cronbach’s alpha.
Table 2

Summary Statistics for Intentions to Discuss Testing

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<td>6. Partner Norms</td>
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<td>8. Intentions to Disc</td>
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<td>.15**</td>
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<td>-.07</td>
<td>.57**</td>
<td>.47**</td>
<td>.19**</td>
<td>.89</td>
</tr>
</tbody>
</table>

*Note.* QA = quality of alternatives, PBC = perceived behavioral control. **p < .01, *p < .05. Numbers on diagonal are Cronbach’s alpha.

Structural Equation Model

**Model fit.** Amos 23 was used for the estimation of the model. The analysis was estimated using maximum likelihood estimation procedure. Hypotheses were evaluated using the standardized path coefficients, with a p-value of .05 or less as an indicator of statistical significance. Several indices of fit were also evaluated to determine the fit of structural models. The comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) were examined to assess model fit. Values greater than .90 for CFI indicate good fit while a cutoff value close to .08 for SRMR was considered acceptable (Hu & Bentler, 1999). RMSEA estimates less than .05 indicate close model fit, values between .05 and .08
indicate reasonable fit, and values greater than .10 suggest poor fit (Browne & Cudeck, 1993). The hypothesized model for intention to seek testing fit the data poorly ($\chi^2 = 202.93, df = 24, p < .001, \text{RMSEA} = .15, 90\% \text{ C.I.} [.14, .18], \text{CFI} = .81, \text{SRMR} = .09$). The model for intentions to discuss testing with a partner also fit the data poorly ($\chi^2 = 230.62, df = 24, p < .001, \text{RMSEA} = .17, 90\% \text{ C.I.} [.15, .19], \text{CFI} = .79, \text{SRMR} = .10$). While model fit may be poor, using SEM to investigate the individual path estimates still offers important benefits. Notably, path analysis is a multivariate technique that allows for variables to be both independent and dependent, which is important for considering the role of commitment (Hu & Bentler, 1999).

**Path analysis.** As the hypotheses are concerned with the theoretical models, the results summary will focus on the endogenous to endogenous paths. Coefficients for the exogenous to endogenous paths are presented in Table 3.
Table 3

Exogenous-to-Endogenous Path Estimates

<table>
<thead>
<tr>
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<th>Relationship Expectations</th>
<th>Partner Communication</th>
<th>Prior Testing Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
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<td>.22**/ -</td>
<td>.01/ -</td>
</tr>
<tr>
<td>QA</td>
<td>-.30**/ -</td>
<td>.15*/ -</td>
<td>.13*/ -</td>
</tr>
<tr>
<td>Investment</td>
<td>.32**/ -</td>
<td>.25**/ -</td>
<td>-.09/ -</td>
</tr>
<tr>
<td>Attitudes</td>
<td>-.02/.07</td>
<td>.25**/.26**</td>
<td>-.21**/ -.24**</td>
</tr>
<tr>
<td>Partner Norms</td>
<td>-.04/.002</td>
<td>.31**/.38**</td>
<td>-.05/ -.09</td>
</tr>
</tbody>
</table>
| PBC              | .10/.07                   | .17**/.19**            | -.22**/ -.24**         

Note. QA = quality of alternatives, PBC = perceived behavioral control. Standardized coefficients are reported. Bolded values represent relationships for the intentions to talk model. **p < .01, *p < .05

First, to assess H1, the relationships between the dependence variables and relationship commitment were examined. Consistent with the model and previous research, satisfaction (b = .35, se = .09, p = .001), quality of alternatives (b = -.28, se = .06, p = .001), and investment (b = .40, se = .10, p = .001) were significantly related to commitment, explaining 53.8% of the variance in relational commitment. Thus, H1 was supported. Next, we examined if commitment was significantly associated with intentions to seek STI testing and discuss STI testing. Commitment was significantly related to intentions to seek STI testing (b = -.14, se = .04, p = .02) and intentions to discuss STI testing (b = -.19, se = .04, p = .002), supporting H2. H3 considered if commitment mediated the relationship between the dependence variables and intentions. For intentions to seek testing, commitment significantly mediated the relationship between two of the
three dependence variables. Satisfaction ($b = -.05, p = .04, 95\% CI [-.08, -.02]$) and investment ($b = -.06, p = .04, 95\% CI [-.10, -.03]$) each had an indirect effect on intentions to seek testing. The indirect effect for the quality of alternatives was approaching significance ($b = .04, p = .053, 95\% CI [0.001, .05]$). When considering intentions to talk, commitment mediated the relationship between satisfaction ($b = -.07, p = .01, 95\% CI [-.09, -.01]$) quality of alternatives, ($b = .05, p = .01, 95\% CI [.001, .04]$), and investment ($b = -.08, p = .01, 95\% CI [-.10, -.02]$). Thus, H3b was supported.

Though not hypothesized in this study, prior work has examined the direct associations between the dependence variables and safer sex behaviors (de Vroome, Stroebe, Sandfort, de Wit, & van Griensven, 2000). In turn, those relationship were investigated and one significant relationship was found. There was significant and direct relationship between the quality of alternatives and intentions to seek STI testing ($b = .13, se = .05, p = .004$), suggesting that individuals who believe they have high quality options also reported greater intentions to seek STI testing. This relationship was not found when considering intentions to discuss STI testing with a partner ($b = .13, se = .05, p = .004$). Further, neither satisfaction nor investment had a significant, direct association with either intentions. See Table 4 for summary of coefficients.
Table 4

Direct Effects of Dependence Variables

<table>
<thead>
<tr>
<th></th>
<th>Intentions to Seek STI Testing</th>
<th>Intentions to Talk about STI Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>.03</td>
<td>.07</td>
</tr>
<tr>
<td>QA</td>
<td>.13*</td>
<td>.08</td>
</tr>
<tr>
<td>Investment</td>
<td>.08</td>
<td>-.002</td>
</tr>
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</table>

*Note. QA = quality of alternatives. Standardized coefficients are reported. **p < .01*

Theory of Planned Behavior

**STI testing.** H4 was concerned with the relationship between the TPB variables and behavioral intentions. These relationships were considered using the same structural model as the investment model variables. The paths for attitudes and partner norms were both in the anticipated direction. Attitudes had the strongest association ($b = .59, se = .03, p < .001$). Partner norms were also significant ($b = .26, se = .05, p < .001$), so positive attitudes and positive partner norms were associated with intentions to seek testing. Conversely, PBC was not significant ($b = -.05, se = .05, p = .43$). Overall, H4a received partial support and the model explained 47.9% of the variance in testing intentions. See Figure 2 for summary of path estimates.
Discussing STI testing. Behavioral intentions to discuss STI testing were then considered using the TPB variables. Many of the associations in this model were similar to those found when considering intentions to seek testing. The paths for attitudes and partner norms were again in the anticipated direction and significant. Attitudes had the strongest association ($b = .52, se = .03, p < .001$). Partner norms were also significant ($b = .31, se = .05, p < .001$). PBC was again not significantly associated with intentions to discuss testing ($b = -.06, se = .05, p = .20$). H4b received limited support with the model accounting for 42.9% of the variance in discussion intentions. See Figure 3 for a summary of path estimates.
Figure 3. Empirical model for intentions to talk about STI testing. ** $p < .01$, * $p < .05$.

Replication Study

The possibility exists that these results may pertain only to the specific sample. In turn, a second study was run with a separate sample from a large, Midwestern university that completed the study online. A total of 256 undergraduates in relationships enrolled in communication courses received course credit for their participation. As the study was administered online, concerns existed about participant attentiveness. In turn, five attention checks were included in the survey. For example, participants were asked to “please answer very unhappy.” If a participant failed more than one of the attention
checks, than those participants were removed from the final dataset, resulting in the removal of 34 participants. Participants who missed just one attention check did not differ from participants who did not fail any attention checks; however, data for participants who failed one attention check was checked manually to ensure there were no irregularities in the data. The final sample ($N = 222$) were primarily women (58.6%) with a mean age of 20.06 ($SD = 1.49$). A majority of the sample identified as White ($n = 166$; 74.8%), 6.3% as African-American, 4.5% as Hispanic or Latino/a, 11.7% as Asian or Asian-American, and 2.7% as multiracial. Over half ($n = 133$) had not sought testing for STIs. All participants identified as heterosexual. Summary statistics are presented in Tables 5 and 6.

Table 5

<table>
<thead>
<tr>
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<td>.01</td>
<td>.40*</td>
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<td>.13</td>
<td>.59*</td>
<td>.42*</td>
<td>.09</td>
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Note. QA = quality of alternatives, PBC = perceived behavioral control. ** $p < .01$, * $p < .05$. Numbers on diagonal are Cronbach’s alpha.
Table 6

Summary Statistics for Intentions to Discuss Testing: Student Sample

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<td>.50**</td>
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<td>.68**</td>
<td>-.36**</td>
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<td>.82</td>
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<td>.18**</td>
<td>-.08</td>
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<td>.03</td>
<td>-.05</td>
<td>-.11</td>
<td>.62**</td>
<td>.41**</td>
<td>.16*</td>
<td>.85</td>
</tr>
</tbody>
</table>

Discuss

Note. QA = quality of alternatives, PBC = perceived behavioral control. ** p < .01, * p < .05. Numbers on diagonal are Cronbach’s alpha.

Again, the investment model was assessed. Consistent with the model and the non-student sample, satisfaction (b = .47, se = .10, p = .001), quality of alternatives (b = -.11, se = .07, p = .02), and investment (b = .35, se = .11, p = .001) were significantly related to commitment. Commitment was not significantly related to intentions to seek STI testing (b = -.06, se = .06, p = .46) or intentions to discuss STI testing (b = -.04, se = .06, p = .56). Unlike the non-student sample, there was no evidence suggesting that commitment mediated the relationship between the satisfaction (b = -.03, p = .46, 95% CI [-.11, .05]), quality of alternatives (b = .01, p = .40, 95% CI [-.01, .04]), and investment (b = -.02, p = .46, 95% CI [-.09, .04]) and intentions to seek testing. Similar results were found between satisfaction (b = .03, p = .42, 95% CI [-.10, .06]), quality of alternatives (b
and intentions to discuss STI testing.

With this sample, given the significant, direct relationship between quality of alternatives and intentions to seek testing in the prior sample, the relationship was examined with the student sample. Unfortunately, the finding could not be replicated with the student sample when considering the relationship between the quality of alternatives and testing intentions \((b = .01, se = .06, p = .82)\) or discussion intentions \((b = .06, se = .06, p = .25)\). Additionally, there were no significant, direct relationships between satisfaction or investment on intentions for either behavior. See Table 7 for summary of coefficients.

### Table 7

<table>
<thead>
<tr>
<th></th>
<th>Intentions to Seek STI Testing</th>
<th>Intentions to Talk about STI Testing</th>
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</thead>
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<td>Satisfaction</td>
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<tr>
<td>QA</td>
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<td>.06</td>
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<tr>
<td>Investment</td>
<td>.02</td>
<td>-.04</td>
</tr>
</tbody>
</table>

*Note. QA = quality of alternatives. Standardized coefficients are reported.*

Next, the TPB relationships were examined. Intentions to seek testing were examined first. The paths for attitudes and partner norms were both in the anticipated direction. Attitudes were significant \((b = .54, se = .04, p < .001)\) as were partner norms \((b = .02, p = .45, 95\% CI [-.01, .03])\) and investment \((b = .02, p = .45, 95\% CI [-.07, .04])\) and intentions to discuss STI testing.
PBC was significant in this model, but was not in the anticipated direction ($b = -.12, se = .06, p = .02$). Similar to the non-student sample, we found support for the investment model and partial support for the TPB framework. The model accounted for 39.4% of the variance in intentions to seek STI testing. See Figure 4.

---

**Figure 4.** Empirical model for intentions to seek STI testing for the student sample. **p** < .01, *p* < .05.

Finally, behavioral intentions to discuss STI testing were then considered using the TPB variables. These associations were similar to those found in the previous model.
using the non-student sample. Attitudes had the strongest association with intentions ($b = .61, se = .04, p < .001$). Partner norms were also significant ($b = .23, se = .04, p < .001$). As with testing intentions, PBC was significant and negatively associated with intentions for the student sample ($b = -.17, se = .06, p = .01$). This model accounted for $47.4\%$ of the variance in intentions to discuss STI testing with one’s partner. See Figure 5 for summary of path estimates.

**Figure 5.** Empirical model for intentions to talk about STI testing for the student sample.

** $p < .01$, * $p < .05$. 

58
**Additional Analysis**

Although, the present study was interested in investigating the role of partner norms in STI testing behaviors, both friend and family norms were also collected. Overall, similar patterns were found. For the Qualtrics sample, both friend norms ($b = .15, se = .06, p = .01$) and family norms ($b = .11, se = .05, p = .04$) were significantly related to behavioral intentions to test. Similarly, friend ($b = .20, se = .06, p < .001$) and family ($b = .12, se = .05, p = .02$) norms were also significantly associated with intentions to discuss testing. Efficacy remained non-significant when these norms were considered. Findings were similar for the student sample. Both friend ($b = .25, se = .06, p < .001$) and family ($b = .13, se = .05, p = .01$) norms were significantly related to intentions to test. Finally, friend ($b = .20, se = .05, p < .001$) and family ($b = .13, se = .04, p = .002$) norms were also significantly associated with intentions to discuss testing. For the student sample, efficacy remained negatively associated with both behavioral intentions when considering friend and family norms.

**Discussion**

The present study adds to the literature on STI testing and demonstrates that the TPB and investment model may be useful frameworks for considering sexual health behaviors in couples. Overall, the TPB accounted for more variance in intentions to seek STI testing and discuss testing with a partner than the relational determinants, but there were key differences between the two samples examined. Notably, the student sample was roughly ten years younger and far fewer participants in that sample reported having been tested (37.5%) compared to the non-student sample (66%). Since the non-student
sample had more experience with STI testing and were all currently in relationships, they may have felt that seeking and discussing STI screening was less important for them. Similarly, the student sample reported fewer lifetime sex partners ($M = 3.05$) and subsequently perceived these behaviors to be less relevant to their relationships. Additionally, student-aged individuals are more likely than other age groups to experience high relationship turnover. In turn, relationships or related characteristics may not be associated with seeking and discussing STI screening. Overall, though, the results for both samples indicate that research needs to consider individual and relational characteristics when considering individuals in close relationships.

**Theory of Planned Behavior**

This study found mixed support for the performance of the TPB. As with previous work on STI testing behaviors (Beadnell et al., 2008; Boudewyns & Paquin, 2011), attitudes were found to be strongly associated with behavioral intentions to seek STI testing and discuss STI testing for the non-student and student sample. More positive attitudes STIs was associated with greater intentions to seek or discuss STIs. Similarly, partner norms were found to be significant for both intentions to discuss and seek STI testing for both samples. The present study is similar to prior work considering partner norms and sexual health behaviors (Beadnell et al., 2008; Thomas, Shiels, & Gabbay, 2014).

An unanticipated finding in this study was the varied performance of PBC across models. This finding was significant for the student sample, but not for the non-student sample. In other work considering STI testing, the performance of PBC has been mixed.
One study specifically examining intentions to seek STI testing found that PBC was not significantly related to testing intentions (Boudewyns & Paquin, 2011). Conversely, PBC was found to be significant when evaluating an intervention aimed at increasing the number of young adults seeking testing for gonorrhea and chlamydia (Booth et al., 2013, 2014), but neither of these studies considered close relationships. A large body of literature demonstrates the effectiveness of the TPB in predicting a variety of health behaviors including safe sex practices, focusing on those in close relationships may have altered the performance of PBC and requires further investigation.

**Investment Model**

Mixed support was found for the investment model. Satisfaction and investment were positively related to commitment and quality of alternatives was negatively associated with commitment. Also, as with previous work, satisfaction consistently had the strongest relationship with commitment for both samples (Rusbult et al., 1998; Vanderdrift, Lehmiller, & Kelly, 2012); however, the subsequent role of commitment on behavioral intentions was more variable. For the student sample, commitment was not a significant mediator and was not significantly associated with intentions to seek or discuss STI testing. Conversely, for the non-student sample, commitment significantly mediated all relationships but one (e.g., quality of alternatives and intentions to seek STI testing). Instead, a significant, direct relationship was found between the quality of alternatives and intentions to seek testing and this relationship was not significant for the student sample. Possibly, alternatives were more salient for the non-student participants.
because they may have fewer options compared to students who may feel they have more alternatives on a college campus.

Although this study provides general support for the investment model, the relational determinants accounted for a limited amount of variance. For intentions to test and to discuss testing, the relational variables accounted for 3-6% of the variance, but this finding is in line with previous work. Vroome and colleagues (2000) applied the investment model to homosexual couples and found that the investment model variables accounted for 4-10% of the variance for several behaviors including condom use and abstaining from anal sex with casual partners. As such, continuing to examine relationship characteristics may further clarify how sexual health behaviors are negotiated in close relationships.
Chapter 5: General Discussion

The role of relationships in health outcomes has been well established. Individuals who have more social relationships tend to live longer than those with fewer connections (House, Landis, & Umberson, 1988). As such, relationship partners can have an impact on one another’s health status and health decision making both positively (e.g., encouraging one another to eat better and exercise) and negatively (e.g., enabling addiction; Burke & Segrin, 2014; Lewis et al., 2006). Romantic partners can influence one another’s overall health and sense of well-being and as partners become more dependent on one another this can intensify. The findings of the two studies presented here further underscore the importance of considering the role of close relationships in health behaviors as well as the TPB variables. Further, the presented studies suggest that relationship characteristics may actually be altering how the variables may be functioning.

Findings

Findings of the first study suggest that relationships are an important context for the investigation of STI screening behaviors as well as other safer sex practices. Notably, participants indicated that the willingness to discuss STIs and testing indicated a relationship was becoming more stable. Some respondents, though, stated that conversation about STIs did not progress their relationship, but did indicate that a refusal
to have the conversation would have stalled or even ended the relationship. In turn, discussions of STI screening behaviors were perceived positively. Similarly, in the quantitative study, participants generally reported positive attitudes and norms about discussing and seeking STI testing and both attitudes and norms were significantly associated with intentions to discuss and seek STI testing. In general, individuals had positive evaluations of these behaviors.

Even though they reported positive evaluations, participants frequently reported having these discussions after having sex with their romantic partner. They also reported being unwilling to have this conversation until they developed a more stable relationship with that partner. Some participants even suggested that they would not seek testing if they were not in a relationship. Talking about and seeking testing for STIs demonstrates investment in the relationship and individuals are unwilling to do either without some indication that a partner would be willing to reciprocate. It is important to note, though, that there is a point of diminishing return for discussing safer sex practices. Although these conversations may signal investment in the relationship or burgeoning trust, these conversations are only able to do so within a certain period of time. Though a definite timeline is not readily apparent, participants agree that once a sense of commitment has developed, conversations about STI testing and safer sex practices are more likely to cause stress or tension in the relationship. In turn, sense of commitment may then become a barrier to engaging in safer practices.

Indeed, the findings of the quantitative study do suggest that a developed sense of commitment may negatively influence safer sex behaviors. For the student sample,
commitment was not significantly related to intentions to perform either behavior, but there was a significant, negative association between commitment and intentions for both behaviors. Individuals in more established relationships may no longer feel they need to take precautions with their partners or even if they have concerns, they may be less likely to voice those concerns to protect the stability of their relationships. Moreover, if the concerning behaviors have relational value, those behaviors are far less likely to be perceived as risky. Taken together, the results of these two studies suggest there may be a period of time when partners may be more receptive to discussing and seeking STI testing. This period of time is after partners have transitioned into a more formal, committed relationship, but the relationship is still relatively new and specific habits for the relationship have not yet been established.

Another way commitment may act as a barrier to safer sex behaviors is in its possible interaction with PBC. The TPB framework was not supported in this study for either sample. PBC was not significant for the non-student sample and it was significant, but negative for the student sample. As all participants were in relationships, it is possible that they did not perceive themselves to be at risk and they may in turn, have reported that they believed they could perform the behavior but had no intentions of doing so. Conversely, there is also the possibility that the sense of commitment they felt was entwined with other concerns. Interdependence theory suggests that as relationships intensify individual partners tend to consider the impact of their behaviors on the other person. As such, a personal evaluation of their ability to perform the behavior becomes dependent on perceptions of their partner. Some participants in the qualitative reported
being unwilling to seek testing if they were not in a relationship. An individual’s motivation to perform a particular behavior may be ultimately constrained by their relationship or their perceptions of how that behavior may impact their relationship.

**Theoretical Implications**

As noted earlier, the investment model variables accounted for a limited amount of variance when compared to the TPB variables; however, the presented work suggests that although the TPB variables may account for more variance, the relationship variables may have been impacting how the determinants performed. As such, the investment model may improve the investigation of STI testing and related behavior for two reasons.

First, these findings demonstrate relational determinants have influence independent from the TPB variables and, in turn, are influencing sexual health behaviors. When we consider behaviors within relationships, it is important to consider how the development and maintenance of a particular relationship may alter how individuals, whether consciously or subconsciously, evaluate certain behaviors. In turn, relationship characteristics may alter decisions about sexual health behaviors and may have influenced how PBC performed in Study 2. More specifically, PBC was consistently correlated with investment and commitment, suggesting, an individual’s evaluation of personal confidence in performing a particular behavior was considered alongside evaluations of the current relationship.

In committed relationships, a diminished sense of PBC may be related to what the behavior may mean for the relationship. In addition to creating tension in the relationship, individuals struggle with balancing safety and semantic evaluations of behaviors
especially if partners are uncertain about one another’s commitment to the relationship. Unprotected sex has been associated with emotional connectedness and feelings of love, loyalty, honesty, and trust (East, Jackson, O’Brien, & Peters, 2007). Further, partners in committed relationships report feeling incapable of denying a partner’s request to not use condoms because requesting their use communicates a lack of trust or possibly infidelity (Hammer et al., 1996; Umphrey & Sherblom, 2007), suggesting individuals may believe they are compromising their partner’s satisfaction with the relationship or personal investment in the relationship if they try to discuss safe sex practices. Relational concerns can override concerns about health, compromising partners’ PBC about enacting certain behaviors.

In addition, although individuals may be prioritizing relational rather than physical health, general experience may also be influencing perceptions of PBC for STI testing behaviors. Though age was not significant in the presented studies, it is possible that differences in individual experiences with close relationships and even having had more opportunities to cultivate close relationships influenced the performance of PBC. As such, the non-student sample may have had more experience negotiating safer sex practices in relationships, so PBC may have been less important to considering STI testing in their current relationships. Conversely, the student sample have likely had fewer relationships and fewer experiences with STI testing, so STI testing may have been less relevant for them and their relationships. Possibly, for those with more relationship experiences, decisions about STI testing may not necessarily hinge on evaluations of
personal competence, while those with fewer relationship experiences may not find the behavior relevant to them.

Second, future work may be improved by considering the investment model variables alongside the TPB variables. As partners develop a sense of commitment to one another, they begin to consider one another’s perspectives and concerns. They consider how relational norms and expectations would influence perceptions of trust or satisfaction in a relationship (Lewis et al., 2006). In turn, individuals assess whether or not particular behaviors will further a relationship and work to identify behaviors that can increase commitment to a relationship. Commitment is more likely to be associated with positively evaluated behaviors because those behaviors suggest a partner is prioritizing the relationship and concern for one’s partner rather than personal interests (Wieselquist et al., 1999). Although no studies identified at this time have examined the influence of commitment on STI screening, research on couple-based interventions indicates commitment to a relationship plays an important role in shaping attitudes towards prevention behaviors. Notably, a study examining the willingness of gay male couples to participate in couples-based voluntary HIV counseling and testing (CVCT) found those with greater commitment were more likely to have positive attitudes towards CVCT than those reporting less commitment (Mitchell, 2014; Wagenaar et al., 2012). Similarly, committed partners were more likely to have positive attitudes towards CVCT with partners indicating participation in the intervention increased their sense of commitment (Stephens et al., 2013). Work on CVCT interventions suggests commitment plays an important role in shaping attitudes towards prevention behavior including STI testing. So,
relationship characteristics may not have profound influence on behavioral intentions, but they can influence other aspects of behavior. Considering the investment model and TPB together can then help to increase our understanding of risky behaviors within relationships.

Finally, an unexpected finding in this study was the significant and positive relationship between the quality of alternatives and intentions to seek STI testing among the non-student sample. Previous work has found a significant, but negative relationship between the quality of alternatives and behavioral intentions (Vroome et al., 2000), such that fewer alternatives were associated with greater intentions to engage in safe sex practices like condom use with casual partners. It is important to note that Vroome and colleagues’ (2000) study examined negotiated safety for gay men in committed relationships. Negotiated safety refers to an agreement between partners in an open relationship in which they agree to use safe sex practices with casual partners. As such, they may have found a negative association because partners were already able to seek additional partners. Although some heterosexual couples may have open relationships, negotiated safety is a less common practice among heterosexuals (Corbett, Dickson-Gomez, Hilario, & Weeks, 2009; Warr, 2001). In turn, if those in the non-student sample think they have quality alternatives, then they recognize the importance of STI testing in marking the end or beginning of a relationship.

When considering periods of transitions into or out of relationships, there is evidence to suggest testing may be more likely. For example, early in relationships, as commitment intensifies, partners report more positive attitudes towards STI screening
These positive attitudes tended to coincide with the contraceptive switch, which refers to the period when heterosexual partners agree to transition from condoms to hormonal birth control (Fortenberry et al., 2002). Transitioning between forms of birth control encouraged partners to consider STI screening behaviors with participants, citing the need to prove their investment in the relationship (Backonja et al., 2014; Balfe & Brughe, 2009). One study found mutual testing, or both partners agreeing to be tested, could actually increase intimacy between partners (Hammer et al., 1996). STI screening may be perceived more positively by new romantic partners because it is a formalized means of demonstrating trust and intimacy. Additionally, screening, unlike condom use, may represent a means of accounting or atoning for previous behavior, so becoming more dependent on a relationship may encourage more positive attitudes towards the behavior.

Practical Implications

Some previous work has found that romantic partners may not be having these conversations or avoid more direct discussions concerning risks (Bolton McKay, & Schneider, 2010; Faulkner & Mansfield, 2002). In line with previous work (Faulkner & Mansfield, 2002; Reynolds-Tylus et al., 2015), participants indicated having the conversation could be difficult and uncomfortable, but they wanted to discuss STIs with their romantic partners. Transitioning into a committed relationship presents a unique opportunity for intervention as partners may be particularly motivated to discuss STIs and testing, but the effectiveness of such interventions hinges on changing when discussions of safe sex practices occur. Future interventions need to continue focusing on
encouraging discussion of safe sex before sexual activity, with any partner, and helping individuals to develop strategies to discuss safe sex practices.

Given the mixed results for PBC in this study, couple-based interventions may be useful for increasing the occurrence of these conversations, but also adherence to safer sex practices. Couples-focused interventions have been found to be more successful in creating sustainable behavior change and partner involvement has also been shown to improve individual efficacy across a variety of behaviors (El-Bassel et al., 2005; Robinson, Turrisi, & Stapleton, 2007). This improvement in efficacy may be possible for several reasons. First, a couple-based approach does not make one individual responsible for changing the couple’s behavior. Second, including both partners increases knowledge because one partner is not responsible for passing on information or solely responsible for starting conversations about particular behaviors. Third, targeting both partners is more likely to create a supportive environment, encouraging partners to be have more direct and honest discussions about their previous relationships or other behaviors that may impact a partner’s health.

Couples-based interventions may be important for another key reason: honesty. Honesty was not addressed in the quantitative portion of the study, but participants in the qualitative study did not indicate concerns about honesty when considering conversations with their partners. Several studies have documented how frequently partners may be dishonest about their sexual history with both casual and committed partners (Horan, 2015; Lehmiller, VanderDrift, & Kelly, 2014; Luchetti, 1999). Only one participant suggested any concern that a partner may try to lie: “I don’t trust men; we need to look
out for ourselves.” The same participant indicated that when she and a romantic partner sought testing they would go together to “keep it honest.” Conversely, another participant in the qualitative study indicated that a partner’s willingness to have that conversation actually made him uncomfortable and wary of being in a relationship with that person. Given the taboo nature of these topics, partners may feel that having conversations about STIs means they may inadvertently be stigmatized. As such, the willingness to engage with these taboo topics may be perceived as evidence of safety. A partner would not broach the topic if he or she had something to hide, so individuals may not be making a formal distinction between the willingness to have the conversation and the willingness to be tested. As such, couples-based intervention may help to not only encourage discussion between partners, but also encourage that couples verify their infection status by getting tested.

Another important consideration for this context is the ultimate goal of the intervention. An intervention focused on increasing the number of individuals simply seeking testing, the presented studies suggest that focusing on relationship characteristics may be useful in such interventions; however, emphasizing relationship characteristics may increase the rate of testing, but may not increase the likelihood that individuals will seek testing before having sex with romantic partners. Conversely, if the goal is to increase the occurrence of testing before individuals have placed themselves at risk, than relationship characteristics may be less important. Though not necessarily relevant to the present studies, participants in the qualitative study provided some information that may be useful for designing interventions that hope to increase the amount of testing prior to
Notably, several participants reported associating STI testing with maturity and that the behavior was important as the transitioned into college. As such, emphasizing norms concerning maturity may prove useful for encouraging testing before sex, particularly for young adults.

Finally, when considering sexual behaviors in relationships, future work should begin to more closely examine the role of norms within relationships. As STI testing and related behaviors can occur early in relationships, there may not yet be a relational norm for partners to follow, so individuals may rely on the expectations they had for previous partners. Indeed, the sawtooth hypothesis suggests that individuals engage in similar safer sex practices across partners (Ku et al., 1994). There is also the possibility, though, given the taboo nature of STI testing and the potential relational expectations that a discussion of STIs may imply, that prior norms or experiences may not be sufficient for this context. Further, Baxter and Wilmot (1985) suggested that explicit discussions of the relationship’s status or taboo behaviors in the relationship were frequently avoided. As such, future work should begin considering how individuals develop both personal and relationship-specific norms for safer sex practices.

Limitations and Future Directions

A key limitation of the presented studies is the homogeneity of the sample. Samples for each study were predominantly white and heterosexual. STI testing remains a relatively under researched behavior, so the presented studies still offer useful findings for understanding the behavior, but caution should be used when applying these findings to other populations. For example, existing research suggests that men who identify as
homosexual approach the discussion of STI testing and other safer sex practices differently, such that conversations are more direct and occur sooner in the relationship when compared to other groups (Mitchell, 2014). When considering other LGBTQ groups, there is a relative dearth of empirical work and future work needs to explore how lesbians, bisexuals, and other queer identifying individuals may approach discussions about safer sex practices and testing. Future work also needs to consider the role of race or ethnic identity in STI testing behaviors. The CDC (2013) reports that African-Americans, Hispanic or Latino/a, and other ethnic minority populations continue to bear a greater burden of disease compared to white populations. Potentially, different structural factors are contributing to a high burden of disease, but there is the possibility that different interpersonal processes may also be contributing to this and future work will need to explore those processes.

Related to the homogeneity of the samples, it is important to note that recruitment of participants is also a limitation of the presented studies as it may have influenced results. Two of the three samples were students; their perceptions and beliefs may not adequately reflect the perspectives of other individuals and cannot be generalized beyond this subset of college students. Further, the method of recruitment for the student samples may also be a limitation. Students were recruited using a participant pool and the description for both studies did not mention STI testing or safer sex practices to avoid selection bias, but there is the possibility this recruitment method impacted the individuals who did and did not participate. Future work would likely benefit from recruiting non-student participants; however, college students fall within the demographic
that most impacted by STIs (CDC, 2013), so work using student samples may still be useful for better understanding STI screening behaviors. Additionally, though relationship length was not significant in the presented studies and could not be examined via SEM due to small sample size across the relationship lengths, continuing to examine the role of relationship length may offer useful insight into how interventions may better target relationships. Further, future work may want to consider more subjective assessments of relationship time as time-based measures may not adequately reflect how the investment model variables develop and change over time.

Both quantitative studies relied on cross-sectional surveys that were administered online. In turn, no causal inferences about the data can be made and the primary outcome variables relied on self-report, so there is the possibility that participants over-reported intentions to seek and discuss STI testing. Additionally, the surveys were administered online, so there was limited control over the environment in which the survey was taken; however, given the sensitive nature of the questions asked, an online survey may have helped to maximize feelings of anonymity and honesty with such topics (Joinson, 2001). In an effort to minimize irregularities in the data, though, five attention checks were included in the survey. Participants who missed more than one of those attention checks were then removed for the final analysis.

Despite these limitations, the present studies add to the literature investigating STI screening behaviors as well as how relationship characteristics may be influencing safer sex practices. Notably, more work needs to explore how relationship characteristics may be influencing individuals’ PBC. PBC was consistently correlated with investment and
commitment for intentions to screen and discuss STIs. As such, a sense of efficacy in a
relationship may be depend on the type of partner, whether causal or committed (Wise et
al., 2006). Further, Study 1 and 2 suggest one’s own sense of confidence in performing a
particular behavior may not be the only factor to consider in behaviors within a
relationship. Related to that, future work should place greater emphasis on partner norms
rather than using “important others” as the referent. In established couples, a partner’s
perceived willingness or approval of condom use was associated with its use (Thomas,
Shiels, & Gabbay, 2014). These studies highlight that norms specific to one’s partner
likely have greater influence over sexual health behavior and general measures of norms
have limited use when considering behaviors involving individuals in close relationships.

Conclusion

STIs continue to be a key public health issue with the CDC indicating there has
been an increase in the number of reported cases for the first time since 2006 (CDC,
2015). As few studies have examined STI-screening behaviors, the presented studies
were interested in better understanding how individuals use conversation as a tool for
understanding personal risk for and perceive discussions of STIs and testing with
relationship partners. In turn, examining both individual and relational determinants of
behavior can help to clarify psychosocial factors that may motivate individuals to seek
and discuss screening.

Recent work found that romantic partners often initiated a sexual relationship
before establishing a romantic relationship and were unlikely to have discussed safer sex
practices until after transitioning into a committed relationship (Bolton et al., 2010;
Reynolds-Tylus et al., 2015). This investigation suggests that these discussions may not be happening until it is too late because individuals were concerned about the stability of a romantic relationship. Additionally, relationship characteristics and a sense of commitment may have also been altering how variables like PBC performed. Indeed some evidence suggests that it may be important to consider how relationship stage impacts sexual health. Participants in this study suggested that these discussions represent a “turning point” in their relationship that may contribute to perceiving discussions of testing more positively. Other empirical work indicates that early in relationships, when individuals are still developing a sense of dependence and commitment, partners feel a moral obligation to seek testing to protect the health of steady partners and STI screening is perceived more positively by individuals in developing relationships than those in established relationships (Balfe & Brugha, 2009; Banikarim et al., 2008; Buunk & Bakker, 1997; Noar et al., 2004; Talib et al., 2013). In turn, such investigations may help to identify possible points of intervention to increase testing and these studies represent a critical first step in further developing a line of work that further examines the relationship between relationship characteristics and sexual health behaviors.
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Appendix A: Study 1 Interview Questions

1. Tell me about the feelings or thoughts that you associate with STD testing?
2. What do you think of individuals who have had an STD test?
3. What do you think motivates someone to have a test done?
4. Are there specific situations when you think testing is more important than others?
   a. Why? What makes those situations important or more distinct than others?
   b. Do you think discussing STIs makes people uncomfortable? Why?
   c. Do you think there is a way to make those conversations more comfortable? Why or why not?
5. Consider others in your life? Do you think they think STD testing is important?
   a. Friends
   b. Family
   c. Romantic partners
6. Consider others in your life? Do you think they think STD testing is necessary?
   a. Friends
   b. Family
   c. Romantic partners
7. Do you think testing is necessary in a relationship?
   a. Does it have a positive/negative impact on a relationship?
   b. What do you think requesting an STI test means for a relationship?
8. Is there a point when people in a relationship should be tested?
   a. What do those moments in a relationship look like?
9. Has a partner asked you to be tested?
   a. If yes: how did you respond to your partner? Were you tested after being asked?
   b. If no: how do you think you would have responded?
10. Have you ever asked a partner to be tested?
    a. If yes: what were your reasons for making the request?
       i. Did you think it was difficult or easy to ask your partner? Why?
    b. If no: what are your reasons for not making such a request?
11. Have you ever been tested for an STD?
    a. Were the results positive or negative?
    b. If positive, have you disclosed to partners?
c. If so, how did you communicate your status with partners?
d. If no, would you be willing to be tested? Why or why not?

12. Have you ever had a partner disclose symptoms, positive test, or STD?
   a. When did this occur (e.g. before or after first sexual encounter with this
      person)?
   b. How did you react?
   c. Were there any changes to the relationship?

13. Do you think it’s easy to be tested?
   a. If yes: why do you think that?
   b. If no: why do you think that?
      i. Do you think there are ways to change this?
Appendix B: Quantitative Survey Items

Investment Model

**Satisfaction Level Facets**
Please indicate the degree to which you agree with each of the following statements regarding your current relationship.
(1 = don’t agree at all, 2 = agree slightly, 3 = agree moderately, 4 = agree completely)
1. My partner fulfills my needs for intimacy (sharing personal thoughts, secrets, etc.)
2. My partner fulfills my needs for companionship (doing things together, enjoying each other’s company, etc.)
3. My partner fulfills my sexual needs (holding hands, kissing, etc.)
4. My partner fulfills my needs for security (feeling trusting, comfortable in a stable relationship, etc.)
5. My partner fulfills my needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.)

Global items. (0 = do not agree at all, 4 = agree somewhat, 8 = agree completely)
6. I feel satisfied with our relationship
7. My relationship is much better than others’ relationships.
8. My relationship is close to ideal.
9. Our relationship makes me very happy.
10. Our relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

**Quality of Alternatives - Facet items**
(1 = don’t agree at all, 2 = agree slightly, 3 = agree moderately, 4 = agree completely)
11. My needs for intimacy (sharing personal thoughts, secrets, etc.) could be fulfilled in alternative relationships
12. My needs for companionship (doing things together, enjoying each other company, etc.) could be fulfilled in alternative relationships.
13. My sexual needs (holding hands, kissing, etc.) could be fulfilled in alternative relationships.
14. My needs for security (feeling trusting, comfortable in a stable relationship, etc.) could be fulfilled in alternative relationships.
15. My needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.) could be fulfilled in alternative relationships.
Global items (0 = do not agree at all, 4 = agree somewhat, 8 = agree completely)
16. The people other than my partner with whom I might become involved are very appealing.
17. My alternatives to our relationship are close to ideal (dating another, spending time with friends or on my own, etc.).
18. If I weren’t dating my partner, I would do fine – I would find another appealing person to date.
19. My alternatives are attractive to me (dating another, spending time with friends or on my own, etc.).
20. My needs for intimacy companionship, etc., could easily be fulfilled in an alternative relationship.

Investment Size - Facet items
(1 = don’t agree at all, 2 = agree slightly, 3 = agree moderately, 4 = agree completely)
21. I have invested a great deal of time in our relationship
22. I have told my partner many private things about myself (I disclose secrets to him/her).
23. My partner and I have an intellectual life together that would be difficult to replace.
24. My sense of personal identity (who I am) is linked to my partner and our relationship.
25. My partner and I share many memories.

Global items
(0 = do not agree at all, 4 = agree somewhat, 8 = agree completely)
26. I have put a great deal into our relationship that I would lose if the relationship were to end.
27. Many aspects of my life have become linked to my partner (recreational activities, etc.), and I would lose all of this if we were to break up.
28. I feel very involved in our relationship – like I have put a great deal into it.
29. My relationships with friends and family members would be complicated if my partner and I were to break up (e.g., partner is friends with people I care about).
30. Compared to other people I know, I have invested a great deal in my relationship with my partner.

Commitment Level Items
(0 = do not agree at all, 4 = agree somewhat, 8 = agree completely)
31. I want our relationship to last for a very long time.
32. I am committed to maintaining my relationship with my partner.
33. I would not feel very upset if our relationship were to end in the near future.
34. It is likely that I will date someone other than my partner within the next year.
35. I feel very attached to our relationship – very strongly linked to my partner.
36. I want our relationship to last forever.
37. I am oriented toward the long-term future of my relationship (for example, I imagine being with my partner several years from now).
Theory of Planned Behavior [partner = most recent romantic partner]

Attitudes
1. For me, getting tested for STDs in the next 6 weeks/3 months/6 months
   a. Harmful – beneficial [7-point scale]
   b. Pleasant – unpleasant [7-point scale]
   c. Good – bad [7-point scale]
   d. Worthless – valuable [7-point scale]
   e. Easy – difficult [7-point scale]
   f. Painless – painful [7-point scale]
   g. Inconvenient – convenient [7-point scale]

2. For me, discussing STI screening with my most recent romantic partner in the next 6 weeks/3 months/6 months
   a. Harmful – beneficial [7-point scale]
   b. Pleasant – unpleasant [7-point scale]
   c. Good – bad [7-point scale]
   d. Worthless – valuable [7-point scale]
   e. Easy – difficult [7-point scale]
   f. Painless – painful [7-point scale]
   g. Inconvenient – convenient [7-point scale]

Subjective Norms
1 = strongly disagree
2 = disagree
3 = neither agree nor disagree
4 = agree
5 = strongly agree
1. When it comes to getting tested for STDs, how much do you want to do what your best friend(s) think(s) you should do?
2. When it comes to getting tested for STDs, how much do you want to do what your most recent romantic partner(s) think(s) you should do?
3. When it comes to getting tested for STDs other than HIV, how much do you want to do what your best friend(s) think(s) you should do?
4. When it comes to getting tested for STDs other than HIV, how much do you want to do what your recent romantic partner partner(s) think(s) you should do?

1 = They think I definitely should NOT
2 = They think I probably should NOT
3 = They are neutral
4 = They think I probably SHOULD
5 = They think I definitely SHOULD
5. How much do these people think you should or should not get tested for STDs every year, if you are sexually active?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

6. How much do these people think you should or should not get tested for STDs every year, if you are sexually active with a new partner?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

7. How much do these people think you should or should not get tested for STDs other than HIV every year, if you are sexually active?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

8. How much do these people think you should or should not get tested for STDs the next time you become sexually involved with a steady partner?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

9. How much do these people think you should or should not get tested for STDs other than HIV the next time you become sexually involved with a new steady partner?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

10. How much do these people think you should or should not get tested for STDs other than HIV the next time you become sexually involved with a new casual partner?
    a. Family members
    b. Best Friends
    c. Most recent romantic partner

11. When it comes to talking about STD testing, how much do you want to do what your best friend(s) think(s) you should do?

12. When it comes to talking about STD testing how much do you want to do what your most recent romantic partner(s) think(s) you should do?

13. When it comes to talking about being tested for STDs other than HIV, how much do you want to do what your best friend(s) think(s) you should do?

14. When it comes to talking about being tested for STDs other than HIV, how much do you want to do what your most recent romantic partner(s) think(s) you should do?
1 = They think I definitely should NOT
2 = They think I probably should NOT
3 = They are neutral
4 = They think I probably SHOULD
5 = They think I definitely SHOULD

15. How much do these people think you should or should not talk about being tested for STDs, if you are sexually active?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

16. How much do these people think you should or should not talk about being tested for STDs, if you are sexually active with a new partner?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

17. How much do these people think you should or should not talk about being tested for STDs other than HIV every year, if you are sexually active?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

18. How much do you these people think you should or should not talk about being tested for STDs other than HIV the next time you become sexually involved with a new steady partner?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

19. How much do these people think you should or should not talk about being tested for STDs other than HIV the next time you become sexually involved with a new casual partner?
   a. Family members
   b. Best Friends
   c. Most recent romantic partner

Perceived Behavioral Control
1 = strongly disagree
2 = disagree
3 = don’t know/neither agree nor disagree
4 = agree
5 = strongly agree

1. I am confident that if I wanted to, I could get tested for STDs in the next 6 weeks/3 months.
2. My getting tested for STDs in the next 6 weeks/3 months is completely in my control.
3. I am confident that I can reduce my risk of exposure to STDs, if I want to.
4. I am confident that if I wanted to, I could have a conversation about STD screening with my most recent romantic partner in the next 6 weeks/3 months.
5. My having a conversation about STD screening with my most recent romantic partner in the next 6 weeks/3 months is completely in my control.

Intentions (uses strongly disagree to strongly agree unless otherwise noted).
1. How likely is it that you will get tested for STDs in the next 6 weeks/3 months/6 months?
   a. 1 = very unlikely, 2 = somewhat unlikely, 3 = not sure/neither unlikely nor likely, 4 = somewhat likely, 5 = very likely
2. I expect to get tested for STDs in the next 6 weeks/3 months/6 months.
3. I want to get tested for STDs in the next 6 weeks/3 months/6 months.
4. I intend to get tested for STDs in the 6 weeks/3 months/6 months.
5. How willing are you to get tested for STDs in the next 6 weeks/3 months/6 months?
   a. 1 = very unwilling, 2 = somewhat unwilling, 3 = not sure/neither willing nor unwilling, 4 = somewhat willing, 5 = very willing
6. How likely is it that you will have a discussion with your most recent romantic partner about being tested for STDs in 6 weeks/3 months/6 months?
   1 = very unlikely, 2 = somewhat unlikely, 3 = not sure/neither unlikely nor likely, 4 = somewhat likely, 5 = very likely
7. I expect to have a discussion with my most recent romantic partner about being tested for STDs in the next 6 weeks/3 months/6 months.
8. I want to have a discussion with my most recent romantic partner about being tested for STDs in the 6 weeks/3 months/6 months.
9. I intend to have a discussion with my most recent romantic partner about being tested for STDs in the 6 weeks/3 months/6 months.
10. How willing are you to have a conversation about having STD testing in the next 6 weeks/3 months/6 months?
    b. 1 = very unwilling, 2 = somewhat unwilling, 3 = not sure/neither willing nor unwilling, 4 = somewhat willing, 5 = very willing

Partner Communication Scale

1 = Never
2 = Sometimes (1-3 times)
3 = Often (4-6 times)
4 = A lot (7 or more times)

1. During the past six months, how many times have you and your most recent romantic partner discussed
   a. How to prevent pregnancy
   b. How to use condoms
   c. How to prevent the AIDS virus
   d. How to prevent STDs
   e. Your partner’s sex history

Demographics

Sex:
- Male (1)
- Female (2)

Age How old are you?

Race/ethnicity (please choose all that apply)
- African/African-American/Black (1)
- American Indian (2)
- Asian/Asian-American (3)
- Caucasian/European/European-American/White (4)
- Central Asian/Central Asian-American (e.g. Indian, Pakistani) (5)
- Latino/a (6)
- Middle Eastern/Middle Eastern-American (7)
- Pacific Islander (8)
- Other (9) ____________________

Education What is the highest level of education you have completed?
- Some high school (1)
- High school graduate (2)
- Completed some college (3)
- Trade/technical/vocational training (4)
- Associate degree (5)
- Bachelor's degree (6)
- Completed some postgraduate work (7)
- Master's degree (8)
- Other advanced degree beyond a Master's degree (9)

Income What was your total household income before taxes during the past 12 months?
- Less than $25,000 (1)
- $25,000 to $34,999 (2)
- $35,000 to $49,999 (3)
- $50,000 to $74,999 (4)
- $75,000 to $99,999 (5)
- $100,000 to $149,999 (6)
- $150,000 or more (7)
Are you currently:
- Employed for wages (1)
- Self-employed (2)
- Out of work and looking for work (3)
- Out of work but not currently looking for work (4)
- A homemaker (5)
- A student (6)
- Military (7)
- Retired (8)
- Unable to work (9)
- Other: please explain (10) ____________________

How do you identify?
- Heterosexual (attracted to the opposite sex) (1)
- Homosexual (attracted to the same sex) (2)
- Bisexual (attracted to both sexes) (3)
- Asexual (no strong attraction to either sex) (4)
- Other (5) ____________________
- Decline to answer (6)

Have you ever had oral, vaginal, or anal sex?
- Yes (1)
- No (2)

With about how many people in total have you had vaginal sex in your life? Please enter your number of partners.

With about how many people in total have you had oral sex in your life? Please enter your number of partners.
- Male (1) ______________
- Female (2) ______________

With about how many people in total have you had anal sex in your life? Please enter your number of partners.
- Male (1) ______________
- Female (2) ______________
Consider your current romantic partner, about how often do you have oral sex with this person?
☐ Once a day or more (1)
☐ 3 to 6 times a week (2)
☐ Once or twice a week (3)
☐ 2 to 3 times a month (4)
☐ Once a month or less (5)

Considering your current romantic partner, when did you first engage in oral sex?
☐ One month into the relationship (1)
☐ Two to three months into the relationship (2)
☐ Four to six months into the relationship (3)
☐ Six months to a year into the relationship (4)
☐ Over a year into the relationship (5)
☐ Has not yet occurred in this relationship (6)

Consider your current romantic partner, about how often do you have vaginal sex with this person?
☐ Once a day or more (1)
☐ 3 to 6 times a week (2)
☐ Once or twice a week (3)
☐ 2 to 3 times a month (4)
☐ Once a month or less (5)

Considering your current romantic partner, when did you first engage in vaginal sex?
☐ One month into the relationship (1)
☐ Two to three months into the relationship (2)
☐ Four to six months into the relationship (3)
☐ Six months to a year into the relationship (4)
☐ Over a year into the relationship (5)
☐ Has not yet occurred in this relationship (6)

Consider your current romantic partner, about how often do you have anal sex with this person?
☐ Once a day or more (1)
☐ 3 to 6 times a week (2)
☐ Once or twice a week (3)
☐ 2 to 3 times a month (4)
☐ Once a month or less (5)
Considering your current romantic partner, when did you first engage in anal sex?
- One month into the relationship (1)
- Two to three months into the relationship (2)
- Four to six months into the relationship (3)
- Six months to a year into the relationship (4)
- Over a year into the relationship (5)
- Has not yet occurred in this relationship (6)

How much longer do you expect the relationship with this person to last?
- A few more days (1)
- A few more weeks (2)
- More than one month but less than a year (3)
- Several years (4)
- Lifetime (5)

About how often do you use a condom when you had oral, vaginal, or anal sex with your current romantic partner
- 0 - Never (1)
- 1-10% (2)
- 11-20% (3)
- 21-30% (4)
- 31-40% (5)
- 41-50% (6)
- 51-60% (7)
- 61-70% (8)
- 71-80% (9)
- 81-90% (10)
- 91-99% (11)
- 100% - Always (12)

Have you been tested for STDs?
- Yes. If yes, how many times? (1) ____________________
- No (2)

If you have been tested for STDs, when was the last time you were tested for STDs?
- Within the last week (1)
- Within the last month (2)
- Within the last 6 months (3)
- Within the last year (4)
- Over a year ago (5)
- I have never been tested for STDs. (6)
If you have been tested for STDs, did the result indicate that you had a STD?
- Yes. If yes, what was your diagnosis? (1) ____________________
- No (2)
- I have never been tested for STDs. (3)

Was the STD test a routine pap smear/gynecological exam?
- Not applicable - I am male (1)
- Yes (2)
- No (3)
- I have never been tested for STDs. (4)
  a. Unable to work
  b. Other: please explain

Screening Questions for Qualtrics participants
Are you in a relationship?
- Yes (1)
- No (2)
If No Is Selected, Then Skip To End of Block

Are you currently married?
- Yes (1)
- No (2)
If Yes Is Selected, Then Skip To End of Block

If you are in a relationship, how long have you and your current partner been together?
- less than 6 months (1)
- 6-12 months (2)
- 1 year or more (3)

Attention Checks [these items are used to check participants’ attention over the course of the survey. Participants are not penalized for the results of these questions, but this information is helpful to the researcher]
Recent research on decision making shows that choices are affected by context. Differences in how people feel, their previous knowledge and experience, and their environment can affect choices. To help us understand how people make decisions, we are interested in information about you. Specifically, we are interested in whether you actually take the time to read directions; if not, some results may not tell us very much about decision making in the real. To show that you have read the instructions, please ignore the question below about how you are feeling and instead check only the "none of the above" option as your answer.

Please check all the words that describe how you are currently feeling.
- Interested
- Hostile
- Nervous
Distressed  Enthusiastic  Determined
Excited  Proud  Attentive
Upset  Irritable  Unfocued
Strong  Alert  Active
Guilty  Ashamed  Afraid
Scared  Inspired  None of the above

Please answer "very unhappy"

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<th>Very unhappy</th>
<th>Unhappy</th>
<th>Somewhat Unhappy</th>
<th>Neither Happy nor Unhappy</th>
<th>Somewhat Happy</th>
<th>Happy</th>
<th>Very Happy</th>
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I have never heard of Facebook.

Strongly disagree  Disagree  Neither Agree nor Disagree  Agree  Strongly Agree

If you live in the United States, please select strongly agree.

Strongly disagree  Disagree  Neither Agree nor Disagree  Agree  Strongly Agree

Who is the president of the United States?

- Joe Biden
- Andrew Cuomo
- Harry Reid
- Barack Obama