

Georgia State University
ScholarWorks @ Georgia State University

Communication Dissertations

Department of Communication

12-17-2015

Seeking Sexual Health Information from Romantic Partners: Testing an Application and Extension of the Theory of Motivated Information Management

Michael Tannebaum

Follow this and additional works at: http://scholarworks.gsu.edu/communication_diss

Recommended Citation

Tannebaum, Michael, "Seeking Sexual Health Information from Romantic Partners: Testing an Application and Extension of the Theory of Motivated Information Management." Dissertation, Georgia State University, 2015.
http://scholarworks.gsu.edu/communication_diss/65

This Dissertation is brought to you for free and open access by the Department of Communication at ScholarWorks @ Georgia State University. It has been accepted for inclusion in Communication Dissertations by an authorized administrator of ScholarWorks @ Georgia State University. For more information, please contact scholarworks@gsu.edu.

SEEKING SEXUAL HEALTH INFORMATION FROM ROMANTIC PARTNERS: TESTING
AN APPLICATION AND EXTENSION OF THE THEORY OF MOTIVATED
INFORMATION MANAGEMENT

by

MICHAEL TANNEBAUM

Under the Direction of Holley Wilkin, PhD

ABSTRACT

Young adults are at disproportionately high risk for sexually transmitted infections (STIs). Research suggests individuals who discuss sexual health issues with romantic partners may engage in more responsible sexual health decision-making, thereby lowering their risk of acquiring STIs. To date, relatively little is known about how young adults seek sexual health information from romantic partners. This study applies and tests an extension of the Theory of Motivated Information Management (TMIM) to understand the contexts in which individuals seek sexual health information directly from romantic partners or from mediated information channels and the determinants that underlie these decisions.

Two online surveys, separated by three weeks, were administered to undergraduate students. A total of 313 students with romantic partners completed the first survey with 200 of them also completing the second survey. At the outset of the Time 1 (T1) survey, half of participants were randomly assigned to read a sexual health narrative intended to increase their uncertainty and anxiety about their knowledge of their partner's sexual health. The other participants served as a control group and read a narrative unrelated to sexual health. All participants then answered questions about their perceived efficacy to obtain sexual health information from romantic partners and the outcomes they expected would arise. For the survey administered at Time 2 (T2), all participants reflected on the extent to which they sought sexual health information from their partners and from mediated information channels between T1 and T2.

Findings suggest the sexual health narrative influenced uncertainty discrepancy and anxiety for individuals who related to the main character in the narrative. In addition, the TMIM predicted individuals' information management efforts within the context of seeking sexual health information from romantic partners. Finally, this study found encouraging results for incorporating a measure of mediated information seeking into the TMIM. Specifically, lower efficacy to obtain sexual health information directly from a romantic partner was positively associated with seeking sexual health information from mediated channels.

INDEX WORDS: Health information seeking, Interpersonal communication, Sexual communication, Sexual health, Sexually transmitted infections, Theory of motivated information management

SEEKING SEXUAL HEALTH INFORMATION FROM ROMANTIC PARTNERS: TESTING
AN APPLICATION AND EXTENSION OF THE THEORY OF MOTIVATED
INFORMATION MANAGEMENT

by

MICHAEL TANNEBAUM

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

in the College of Arts and Sciences

Georgia State University

2015

Copyright by
Michael Adam Tannebaum
2015

SEEKING SEXUAL HEALTH INFORMATION FROM ROMANTIC PARTNERS: TESTING
AN APPLICATION AND EXTENSION OF THE THEORY OF MOTIVATED
INFORMATION MANAGEMENT

by

MICHAEL TANNEBAUM

Committee Chair: Holley Wilkin

Committee: Cynthia Hoffner

Erin Ruel

Ann Williams

Electronic Version Approved:

Office of Graduate Studies

College of Arts and Sciences

Georgia State University

December 2015

TABLE OF CONTENTS

LIST OF TABLES	x
1 INTRODUCTION.....	1
2 LITERATURE REVIEW	10
2.1 Preview of Literature Review.....	10
2.2 Sexual Health	10
2.3 Communication About Sexual Health.....	14
2.4 Interpersonal Communication Theories of Uncertainty	20
<i>2.4.1 Uncertainty Reduction Theory.....</i>	<i>22</i>
<i>2.4.2 Anxiety Uncertainty Management Theory</i>	<i>24</i>
<i>2.4.3 Predicted Outcome Value Theory</i>	<i>25</i>
<i>2.4.4 Problematic Integration Theory.....</i>	<i>25</i>
<i>2.4.5 Uncertainty Management Theory.....</i>	<i>27</i>
<i>2.4.6 Summary</i>	<i>28</i>
2.5 Prompting Uncertainty Discrepancy	28
<i>2.5.1 Uncertainty-Identity Theory.....</i>	<i>29</i>
2.6 Theory of Motivated Information Management	31
<i>2.6.1 Interpretation Phase</i>	<i>33</i>
<i>2.6.2 Evaluation Phase.....</i>	<i>34</i>
<i>2.6.3 Decision Phase.....</i>	<i>38</i>

2.7	Seeking Sexual Health Information from Mediated Sources.....	41
2.8	Study Overview	44
2.9	Research Question and Hypotheses.....	46
3	Method	55
3.1	Research Design.....	55
3.2	Recruitment	56
3.3	Enrollment	58
3.4	Participants	58
3.5	Procedures.....	59
3.6	Survey Measures	61
3.6.1	<i>TMIM Variables Measured at T1</i>	<i>62</i>
3.6.2	<i>Demographics and Narrative Identification Measured at T1.....</i>	<i>64</i>
3.6.3	<i>Sexual Health Perceptions and Practices Measured at T1.....</i>	<i>64</i>
3.6.4	<i>TMIM Variables Measured at T2</i>	<i>66</i>
3.7	Data Analyses.....	68
4	RESULTS	69
4.1	Demographic Analyses.....	69
4.2	Sexual Health Perceptions and Practices	71
4.3	Effect of Narrative on Uncertainty Discrepancy and Anxiety (RQ1)	75
4.4	Preview of TMIM Model Testing	78

4.4.1	<i>Sample size, model estimation, and model descriptions</i>	79
4.4.2	<i>Model Fit Indices</i>	82
4.5	Sexual Health Information Management (H1-H7)	84
4.5.1	<i>Information Management from Romantic Partners</i>	85
4.5.2	<i>Information Management from Romantic Partners and Media</i>	86
4.5.3	<i>Summary of TMIM’s Ability to Predict Information Management</i>	88
4.6	Mediated Relationships as Predicted by the TMIM (H8-H10)	91
4.6.1	<i>Uncertainty Discrepancy, Anxiety, and Efficacy (H8)</i>	92
4.6.2	<i>Uncertainty Discrepancy, Anxiety, and Outcome Expectancies (H9)</i>	93
4.6.3	<i>Uncertainty Discrepancy, Anxiety, Information Seeking Intent (H10)</i>	94
4.7	Issue-related Anxiety and Information Seeking Intentions (H11)	96
4.8	Summary of Study Results	98
5	DISCUSSION	98
5.1	Influencing Uncertainty Discrepancy and Anxiety	99
5.2	Performance of the TMIM	103
5.2.1	<i>Sexual Health Information Seeking from Romantic Partners</i>	104
5.2.2	<i>Sexual Health Information Seeking from Mediated Channels</i>	107
5.3	TMIM-based Mediation Predictions	111
5.4	Issue-related Anxiety	113
5.5	Practical Considerations	114

5.5.1	<i>Issue Importance: The Sexual Health of Romantic Partners</i>	115
5.5.2	<i>Accuracy of Perceived Knowledge about Partner's Sexual Health</i>	115
5.5.3	<i>Sexual Health Behaviors and STI Screening Histories</i>	118
5.6	Limitations	120
5.6.1	<i>Limitations of Sample</i>	120
5.6.2	<i>Limitations of Measures</i>	121
5.6.3	<i>Limitations of Research Design</i>	121
5.7	Future Research	122
5.7.1	<i>Sexual communication</i>	122
5.7.2	<i>Theoretical advancement</i>	124
5.7.3	<i>Health messages to influence uncertainty discrepancy and emotion</i>	128
5.8	Conclusion	130
REFERENCES		133
APPENDICES		173
Appendix A		173
Appendix B		175
Appendix C		178
Appendix D		186

LIST OF TABLES

Table 1. Demographic Information at T1 for Study Sample and Excluded Participants	59
Table 2. Research Question and Hypotheses	69
Table 3. Demographic Characteristics of Participants.....	70
Table 4. Participants' Sexual Perceptions and Practices	71
Table 5. Participants' STI Screening and Diagnoses History	72
Table 6. Frequency of Discussion about Sexual Health Topics with Romantic Partner	73
Table 7. Means and Standard Deviations for Sexual Health Information Seeking Variables	73
Table 8. TMIM Variable Means and Cronbach's Alphas	74
Table 9. Correlations among Study Variables	75
Table 10. Effect of Sexual Health Narrative on Uncertainty Discrepancy and Anxiety	76
Table 11. Effect of Sexual Health Narrative on Uncertainty Discrepancy and Anxiety based on Ability to Relate to Main Character.....	77
Table 12. TMIM Variable Means, Standard Deviations, and Cronbach's Alphas.....	81
Table 13. Correlations for TMIM Variables.....	81
Table 14. Sexual Health Information Seeking from Media between T1 and T2.....	87
Table 15. Fit Indices for Structural Equation Models.....	89
Table 16. Theory of Motivated Information Management Hypothesized Pathways.....	89
Table 17. Correlations for Uncertainty Discrepancy, Anxiety, and Efficacy.....	92
Table 18. Correlations for Uncertainty Discrepancy, Anxiety, and Outcome Expectancies.....	94
Table 19. Correlations for Uncertainty Discrepancy, Anxiety, and Information Seeking Intent .	94
Table 20. Regression Predicting Information Seeking Intent from Issue-related Anxiety Controlling for the TMIM Variables	96

Table 21. Regression Predicting Information Seeking Intent from Issue-related Anxiety	
Controlling for TMIM Variables and Additional Co-variates	97
Table 22. Summary of Support for Hypotheses.....	98

LIST OF FIGURES

Figure 1. The theory of motivated information management model.	33
Figure 2. TMIM predicting sexual health information seeking from romantic partners.	50
Figure 3. TMIM predicting sexual health information seeking from romantic partners and the media.	51
Figure 4. Proposed mediation between uncertainty discrepancy and efficacy by anxiety.	52
Figure 5. Proposed mediation between uncertainty discrepancy and outcome expectancies by anxiety.	53
Figure 6. Proposed mediation between uncertainty discrepancy and information seeking intent by anxiety.	54
Figure 7. TMIM for seeking sexual health information from romantic partners.	85
Figure 8. TMIM for seeking sexual health information from romantic partners and the media. .	88
Figure 9. Anxiety mediating the relationship between uncertainty discrepancy and efficacy.	93
Figure 10. Anxiety mediating the relationship between uncertainty discrepancy and information seeking intentions.	95

1 INTRODUCTION

In the United States, most sexually active people will have a sexually transmitted infection (STI) at some point in their lives (Satterwhite et al., 2013). STIs are bacterial, viral, or parasitic infections, which spread primarily through sexual contact and may affect sexual and reproductive organs or cause widespread infection in other parts of the body (U.S. Department of Health & Human Services, 2012; World Health Organization, 2014). Recent estimates suggest there are currently about 110 million STIs among men and women across the nation (Centers for Disease Control, 2013a). Approximately 20 million new STI cases present in the U.S. annually, about half of which occur among the country's youth (CDC, 2013a). Sexually active teenagers and young adults comprise 25% of the sexually active population, yet account for nearly half of new STI cases due to a combination of behavioral, biological, and cultural factors (CDC, 2011, 2014a; DiClemente, Salazar, Crosby, & Rosenthal, 2005). STI rates among young adults are on the rise (Pflieger, Cook, Niccolai, & Connell, 2013) with the most common STI among this age group, human papillomavirus, affecting about one-third of teenagers (CDC, 2011). STIs may lead to serious health consequences such as cancer and pregnancy complications (Aral, 2001; Mosciciki, 2005), psychological trauma (Weinstock, Berman, & Cates, 2004), and self-reported diminished quality of life (Barnack-Tavlaris, Reddy, & Ports, 2011). Youths with STIs are also at increased risk for contracting human immunodeficiency virus (HIV), a type of STI, in part, because some STIs such as gonorrhea and herpes may cause immune responses that raise HIV risk (CDC, 2010b; Mayo Clinic, 2015).

The use of some contraceptives (e.g., condoms, dental dams) reduces exposure to most STIs, yet young adults often fail to engage in safe sex practices (Caico, 2014; Gavin et al., 2009; Manlove, Welti, Wildsmith, & Barry, 2014; Wyatt & Oswalt, 2014), especially those who

perceive themselves to have more serious partners, as opposed to casual partners (Hock-Long et al., 2013). In addition to primary prevention of STIs (e.g., promoting abstinence, safe sex, and monogamy), secondary prevention efforts seek to disrupt disease transmission, in part, by encouraging STI screening. Nevertheless, many adolescents and young adults are not screened for STIs. For example, one study of sexually active 15-24 year olds found 37% of males and 70% of females were screened for an STI in the past year (Cunningham, Kerrigan, Jennings, & Ellen, 2009). With antibiotics, common STIs such as gonorrhea and chlamydia can usually be treated and cured; however, these infections are often asymptomatic (Farley, Cohen, & Elkins, 2005) and, when left untreated, may result in health complications such as infertility in women, cancer, chronic pelvic pain, and may facilitate HIV infection (CDC, 2013a; Fleming & Wasserheit, 1999). For viral STIs, such as herpes, no effective cure exists (de Visser, 2005).

Sexual behaviors typically occur between two individuals and thus understanding the communication dynamics of sexual interactions and the role communication plays in the context of sexual decision-making is crucial to understanding sexual health (Noar, Carlyle, & Cole, 2006; Noar & Edgar, 2009; Warren, Harvey, & Agnew, 2012). Adolescent and young adults' sexual communication with their partners remains underexplored (Widman, Welsh, McNulty, & Little, 2006; Parker & Ivanov, 2013). The field of communication may be particularly well-suited to help stem the tide of STIs. Manning (2014) writes, "given its focus on messages, meaning, and interaction, prevention of and education about sexual diseases are research areas that communication studies is especially well equipped to handle" (p. 265).

Improving the quality and frequency of partner communication may increase the likelihood of safe sex among young adults, thereby reducing risk of STI transmission and other negative consequences (DiClemente, Salazar, & Crosby, 2007; Hicks, McRee, & Eisenberg,

2013; Manlove, Ryan, & Franzetta, 2004, 2007; Sales et al., 2012; Scott et al., 2011; Stoner et al., 2003; Wang, 2013). Moreover, individuals confident in their ability to discuss safe sex with partners and who expect these conversations to have positive outcomes may be more likely to initiate these discussions and to practice safe sex (DiIorio, Dudley, Lehr, & Soet, 2000; Dillow & LaBelle, 2014; Shoop & Davidson, 1994). Knowledge of infection and notifying one's sexual partners may help reduce the prevalence of STIs and increase partner's awareness and perception that medical care is needed (Golden et al., 2005; Wilson et al., 2009). However, young adults are often uncomfortable discussing sexual health issues with intimate partners (Rickert, Sanghvi, & Wiemann, 2002; Trieu, Modeste, Marshak, Males, & Bratton, 2010).

Interventions to encourage safe sex often aim to promote partner communication through activities such as role-playing, providing education about assertive communication, and teaching individuals how to negotiate risk reduction strategies with partners (e.g., Sales et al., 2012; Whitaker, Miller, May, & Levin, 1999). Despite the aforementioned third-party efforts to improve partner communication, little is known about how individuals actively seek sexual health information from intimate partners (Afifi & Weiner, 2006). The theory of motivated information management (TMIM) provides a framework with which to better understand the psychological and social determinants that underlie this process.

The TMIM is a framework that focuses exclusively on active information management that occurs within interpersonal contexts (Afifi & Weiner, 2004). Information is all environmental stimuli that contribute to an individual's knowledge or beliefs (Brashers, Goldsmith, & Hsieh, 2002). Thus, information management refers to "communicative and cognitive activities such as seeking, avoiding, providing, appraising and interpreting those environmental stimuli" (Brashers et al., 2002, p. 259). The theory proposes that when someone

has uncertainty about an issue of perceived importance, his or her intentions to seek information are determined by factors such as the relationship between the amount of uncertainty the individual has about the issue and the amount of uncertainty the individual desires (known as “uncertainty discrepancy”), the emotions stemming from the uncertainty discrepancy, expectations about the outcomes that would result from seeking information, and perceived self-efficacy to obtain the desired information from the individual in possession of the information (Afifi & Weiner, 2004).

Applications of the TMIM have examined individuals’ decisions to seek or avoid information and discussions with interpersonal contacts (e.g., family, friends, romantic partners) about topics such as sexual health and family health history (Afifi & Weiner, 2006; Rauscher & Hesse, 2014). Tests of the theory often suggest individuals who most want information about an issue of perceived importance may actually be least likely to seek information (e.g., Afifi & Weiner, 2006). This can be attributed, at least in part, to the anxiety that stems from the thought of acquiring more (and potentially undesirable) information, which leads to negative outcome expectancies and lower efficacy perceptions. In other words, individuals may prefer to remain in a state of uncertainty about an issue rather than acquire more information if they perceive additional information would have negative consequences.

Three central parameters underlie the TMIM and guide its application: an emphasis on interpersonal communication, a focus on active information seeking, and the assumption that people behave rationally (Afifi & Weiner, 2004). The emphasis on interpersonal contexts focuses attention on the distinctive characteristics that define interpersonal communication such as immediacy and feedback (Afifi & Weiner, 2004). Interpersonal communication is also unique, in part, because these communicative acts are often characterized by heightened intimacy and

awareness of others' needs (Johnson & Case, 2012). However, as is later discussed, expanding the scope of the TMIM to account for information seeking from mediated information channels may have practical benefits for health professionals and provide insight into the extent to which an individual's mediated information seeking behavior can be predicted from their perceived efficacy to obtain information and cope with expected outcomes from a direct information search. The second parameter of the TMIM, the focus on active information seeking, acknowledges the impracticality of capturing an individual's acquisition of accidental information (Afifi & Weiner, 2004), which often occurs due to media saturation (Brashers et al., 2002). In regard to sexual health information, for example, individuals often unintentionally or incidentally come across information about sexual health issues and relationships (e.g., Katz, Krieger, & Roberto, 2011; Powell, 2008). The final parameter of the TMIM is the assumption individuals generally behave as rational beings, yet emotional and cognitive factors limit this rationality (Afifi & Weiner, 2004).

The TMIM proposes an iterative three-phase process of information management that a potential information-seeker goes through in deciding a course of action: interpretation phase, evaluation phase, and decision phase (Afifi & Weiner, 2004). Each phase is discussed briefly here and in greater detail in the literature review. The first phase, *interpretation phase*, is characterized by an individual's awareness that his or her uncertainty about an issue of perceived importance differs from his or her desired uncertainty about the issue. This uncertainty discrepancy is proposed to lead to uncertainty discrepancy-related anxiety¹ (hereafter labeled anxiety). The proposed relationship between uncertainty and anxiety is consistent with research on information seeking (e.g., Case, Andrews, Johnson & Allard, 2005). Anxiety is said to

¹ Recent refinement of the TMIM has replaced "anxiety" with "emotion." This is discussed in greater detail in this section as well as the literature review.

motivate individuals to assess their information-management options (e.g., seeking, avoiding), which leads to the second phase, the evaluation phase.

The second phase, the evaluation phase, consists of two assessments: outcome expectancies and efficacy. *Outcome expectancies* reflect beliefs about the outcomes of a particular information management process. Here, the individual weighs the process- and outcome-related costs and benefits associated with seeking information from a particular individual and the expected resulting outcomes. The TMIM proposes these outcome assessments are partially mediated by efficacy perceptions, of which there are three: communication efficacy, coping efficacy, and target efficacy. *Communication efficacy* refers to an individual's sense that he or she has the ability to successfully seek information from the target source (i.e., the individual who is in possession of the information). *Coping efficacy* reflects an individual's judgments as to whether he or she has the capacity to manage the outcomes of a particular information strategy. *Target efficacy* refers to beliefs about whether the target individual has access to the desired information and would be forthcoming with this information. Taken together, outcome expectancies and efficacy are expected to predict the likelihood of information seeking (Afifi & Weiner, 2004).

The third and final phase, the decision phase, involves selecting from three information management strategies. First, *seeking relevant information* refers to seeking information from the target directly (e.g., asking the individual), indirectly (e.g., observation of the individual, asking third parties), or through manipulation of the environment to assess how the target responds. Second, *avoidance of relevant information* is when individuals choose to avoid pertinent information. Avoidance may be active or passive. Active avoidance refers to circumventing situations or individuals who may offer relevant information, whereas passive avoidance

concerns individuals' decisions to refrain from active information seeking. That is, individuals let the issue unfold without trying to expand their knowledge of the issue. Finally, *cognitive reassessment* is when an individual seeks to “manage anxiety by making psychological adjustments that change the mechanisms that activated the original need for information” (Afifi & Weiner, 2004, p. 183). Thus, rather than attempt to adjust uncertainty discrepancy with the procurement of new information, for example, an individual adjusts his or her perceptions of issue importance or desired level of uncertainty.

The TMIM is among the latest in a line of theoretical frameworks that attempt to predict and/or explain how individuals manage uncertainty. Although the TMIM draws heavily on assumptions set forth by these theories (many of which are discussed in the literature review), the TMIM was developed due, in part, to perceived limitations across these frameworks. In introducing the theory, Afifi and Weiner (2004) suggested four limitations exist among extant uncertainty frameworks. First, many models assume applicability across diverse contexts when, in actuality, seeking information via interpersonal exchanges may present unique opportunities and challenges (e.g., feedback, immediacy). Second, uncertainty frameworks often fail to acknowledge the complexity of uncertainty as a motivating force. That is, individuals may, at times, purposefully seek increased uncertainty or accept elevated uncertainty. For example, an individual may experience symptoms of an illness that he or she cannot identify, yet elect to accept this uncertainty rather than seek a diagnosis from a physician for any number of reasons (e.g., cost, time). Third, models of information seeking often provide simplistic measures of efficacy or negate the concept altogether. As noted, the TMIM integrates three efficacy components. Fourth and finally, models of information seeking often fail to sufficiently account for the information provider in the information seeking process.

Since the proposal of the TMIM, the theory's developers have acknowledged theoretical refinement may improve the predictive power of the model. Specifically, the role of emotion in the information management process remains underexplored (e.g., Afifi, 2009; Afifi & Morse, 2011). Whereas the TMIM initially suggested uncertainty discrepancy leads to anxiety, recent applications of the theory have shifted from anxiety as the sole emotional response to explore a greater range of possible emotions that may prompt or inhibit information seeking in interpersonal contexts. Emotions, such as fear and guilt, have been shown to influence individuals' willingness to seek health information (Dunne, 2002; Matthews, Sellergreen, Manfredi, & Williams, 2002). In regard to sexual health, specifically, "the emotions associated with the issue ... are likely to impact the information seeking process in a manner not yet adequately considered in the TMIM framework" (Afifi & Weiner, 2006, p. 51).

One unique feature of the TMIM is the potential of the framework to be applied in practical contexts. Specifically, the model may offer health communication professionals a framework with which to influence the information management strategies an individual adopts as a means to manage his or her uncertainty. Specifically, if health communication professionals can influence the uncertainty discrepancy an individual has about a health issue (and/or the emotions that stem from the uncertainty discrepancy), this could in turn influence the cognitive assessments (i.e., outcome expectancies, efficacy) thought to predict direct information seeking. To test this possibility, the current project uses a fictional narrative about partner communication about STIs in an attempt to influence participants' uncertainty discrepancy about (and anxiety over) their knowledge of the sexual health of a romantic partner.

To date, scholars have applied the TMIM exclusively within interpersonal contexts. However, this project argues that scholars may benefit from testing the model's ability to

account for information seeking via mediated channels as well. Examining both interpersonal and mediated information sources is important, in part, because information management, the primary means by which someone may attempt to either adjust or maintain one's level of uncertainty, often occurs across both contexts (Brashers, 2001). Moreover, in regard to the topic of this specific project, sexual health is a sensitive issue for which individuals often actively look to mediated channels for information (e.g., Lim, Vella, Sacks-Davis, & Hellard, 2014). Although the type of sexual health information obtained from mediated information channels will not provide the partner-specific information that may be obtained from communication with romantic partners (e.g., sexual histories), this information is valuable in its own right because it could increase knowledge about a variety of sexual health issues such as STI screening recommendations, ways to protect against STIs, and the importance of safe sex.

In sum, this study had three central objectives. First, this study sought to use the TMIM as a framework with which to understand sexual health information seeking from romantic partners. Second, this study examined the potential of a sexual health narrative to affect individuals' uncertainty discrepancy and anxiety in regard to their knowledge of their partner's sexual health. Third and finally, the extent to which the TMIM could account for active sexual health information seeking from mediated information channels was examined. Specifically, this study examined whether a relationship exists between individuals' efficacy to obtain sexual health information directly from romantic partners and their propensity to seek sexual health information from mediated information channels.

Chapter 2, the literature review, proceeds in four sections. The first section discusses young adults' sexual health and their sexual communication perceptions, beliefs, and behaviors. The second section traces the history and evolution of interpersonal communication theories of

uncertainty, provides a detailed overview of the TMIM, and outlines the theoretical rationale that guided the development of the narrative used to attempt to influence uncertainty discrepancy and anxiety. The third section provides rationale for testing an application of the TMIM that accounts for sexual health information seeking via mediated information channels. The fourth and final section provides a project overview followed by the hypotheses and research questions that guided this study. Chapter 3, the method section, explains the research design, how variables were measured, and data analyses procedures. Chapter 4 presents the study's findings. Chapter 5 offers a discussion of results, theoretical and practical implications of findings, study limitations, future research, and a conclusion.

2 LITERATURE REVIEW

2.1 Preview of Literature Review

The central objectives of this literature review are to: (1) discuss sexual health disparities experienced by the young adult population and the importance of sexual communication so as to demonstrate the need to better understand young adults' motivations to seek (or not seek) sexual health information from romantic partners, (2) trace the development of the TMIM and provide a detailed overview of the theory, (3) discuss how influencing uncertainty discrepancy and anxiety could ultimately influence one's desire to seek information, and (4) provide rationale for examining the extent to which the TMIM may account for information seeking from mediated channels. I begin with a discussion of sexual health with a focus on the sexual health of young adults.

2.2 Sexual Health

Sexual health can broadly be defined as "a state of physical, emotional, mental and social well-being in relation to sexuality" (WHO, 2014, para. 7). In the U.S., individuals engage in

sexual behaviors at progressively earlier ages (Buhi & Goodson, 2007). About half of U.S. high school students have had sexual intercourse and 15% have had sexual intercourse with four or more persons (Eaton et al., 2012). About 40% of individuals aged 15-19 have had multiple sex partners (Malhotra, 2008) and 75% of the U.S. population has sex prior by age 20 (Finer, 2007).

Young adults often engage in risky sexual behaviors such as having unprotected sex, multiple sexual partners, one-time sexual encounters, and sex after drug usage or excessive alcohol consumption (Benotsch, Snipes, Martin, & Bull, 2013; Owen & Fincham, 2011; Santelli, Brener, Lowry, Bhatt, & Zabin, 1998). Although contraceptive use among youths has increased in recent decades, contraceptives are often used inconsistently (Johnson, Sieving, Pettingell, & McRee, 2015; Wyatt & Oswalt, 2014) and not all contraceptives protect against STIs (CDC, 2010a).

STIs are frequently acquired shortly after sexual initiation and individuals who first have sex at an earlier age are particularly likely to have a history of STIs (Forhan et al., 2009; Sandfort, Orr, Hirsch, & Santelli, 2008). The prevalence of many STIs is highest in young adulthood (Park, Mulye, Adams, Brindis, & Irwin, 2006). For example, among individuals aged 15-24, nearly one million cases of chlamydia were reported in 2013, which represented 68% of chlamydia cases (CDC, 2014b). Troublingly, research has found discrepancies between young adults' self-reported sexual behavior and laboratory-confirmed STI status and thus, "a substantial number of missed cases of [STIs] will go undiagnosed, untreated, and spread to future sex partners" (DiClemente, Sales, Danner, & Crosby, 2011, p. 212). STI rates among young adults are on the rise (Pflieger et al., 2013) with the most common STI among this age group, human papillomavirus, affecting about one-third of teenagers (CDC, 2011).

Although some individuals delay sexual intercourse, in part, due to concerns about STIs and their potential ramifications (Rosengard, Adler, Millstein, Gurvey, & Ellen, 2004), others have little knowledge about STIs and grossly underestimate possible consequences and personal susceptibility (de Visser, 2005; Ethier, Kershaw, Niccolai, Lewis, & Ickovics, 2003; Ford, Jaccard, Millstein, Bardsley, & Miller, 2004; Ingledue, Cottrell, & Bernard, 2004; Toews & Yazedjian, 2012). That young adults underestimate their risk of STI exposure is somewhat surprising, in part, because most believe that at least one of their sexual partners has had other sexual partners within the past year (Staras, Cook, & Clark, 2009). Many young adults with STIs believe their chances of having an STI are low and this “disconnect between a person’s perceived risk and actual health could heighten an individual’s risk of spreading infection” (Kaestle & Waller, 2011, p. 162).

In addition to sexual abstinence, long-term mutually monogamous relationships, and vaccinations² for certain STIs prior to sexual activity, the use of some contraceptives such as condoms and dental dams reduces one’s chance of exposure to most STIs (Mayo Clinic, 2014). Still, teenagers and young adults often do not use contraceptives. For example, Frost, Lindberg, and Finer (2012) found 36% of men and women aged 18-29 expected to have unprotected sex in the next three months. Another study found among young adults aged 18-29 in sexual relationships, 18.5% did not use any contraceptive method in the previous month (Higgins, Popkin, & Santelli, 2012). In addition to increasing the likelihood of exposure to STIs, failure to use contraception may have additional consequences such as unintended pregnancy, which is related to a host of negative health, economic, and social outcomes (e.g., Amato & Maynard, 2007; Basch, 2011; Hofferth & Reid, 2002; Leathers & Kelley, 2000).

² For adolescents, vaccinations that protect against STIs such as HPV often require the consent of parents, some of whom may not approve of the vaccine (e.g., Davis, Dickman, Ferris, & Dias, 2004).

As noted, early initiation of sexual intercourse is strongly correlated with risk of acquiring an STI (Kaestle, Halpern, Miller, & Ford, 2005). At the time of first intercourse, adolescents and young adults may have no knowledge of their partner's sexual history (Ingham, Woodcock, & Stenner, 1991), which puts them at increased risk for an STI. This is problematic because youths with STIs are at risk for serious subsequent health consequences such as cancer and pregnancy complications (Aral, 2001; Mosciciki, 2005; Newbern et al., 2013), psychological trauma and depression (Shrier, Harris, & Beardslee, 2002; Weinstock et al., 2004), and social stigma (Newton & McCabe, 2005). In addition, individuals infected with an STI are at least two to five times more likely than uninfected individuals to acquire HIV infection if exposed to the virus through sexual contact (CDC, 2010b). Specifically, in the U.S., people who contract gonorrhea, syphilis, and herpes are more likely to have HIV or contract HIV in the future (CDC, 2010b).

Antibiotics can usually treat and cure common STIs such as gonorrhea and chlamydia, yet they are often asymptomatic (Farley et al., 2005; Tilson et al., 2004). To help identify asymptomatic STIs, the CDC has screening recommendations, which vary depending on an individual's risk factors (e.g., gender, age, sexual behaviors). For example, all sexually active females aged 25 and younger should be screened for chlamydia annually (CDC, 2013b). Among young adults, STI screening rates vary. For example, one study of 15-24 year-olds found 37% of males and 70% of females were screened for an STI in the past year (Cunningham et al., 2009). Screening is essential, in part, because infected persons who are asymptomatic can still transmit the infection and remain at risk for STI-related complications (Farley et al., 2005).

In addition to exhibiting no symptoms of infection, other barriers to STI screening are a lack of knowledge about infections and available testing services, fear of learning test results,

social stigma, perceived vulnerability, shame, little desire to comply with others' wishes for testing, and issues related to confidentiality and partner trust (Barth, Cook, Downs, Switzer, & Fischhoff, 2002; Chacko et al., 2008; de Visser & O'Neill, 2013; Tilson et al., 2004). Individuals may also fail to accurately assess the risk behaviors of their partners (e.g., number of previous partners), which may increase potential exposure to STIs (Drumright, Gorbach, & Holmes, 2004; Stoner et al., 2003). Knowledge of infection and sharing this information with one's sexual partners may help reduce the prevalence of STIs and increase partners' awareness and perception that medical care is needed (Golden et al., 2005; Wilson et al., 2009). Still, notification that one's partner has an STI does not in and of itself always motivate an individual to access clinical services for himself or herself due to psychological barriers such as fear of receiving a positive STI test or environmental barriers such as lack of transportation to a testing site (Reed et al., 2015; Stekler et al., 2005).

Scholars have suggested that investigating the circumstances under which young adults seek information from romantic partners about their sexual health and history (and the outcomes that result from this behavior) remains an important line of research (e.g., Noar et al., 2006; Parker & Ivanov, 2013; Widman et al., 2006). The next section defines sexual communication, discusses the potential benefits of this practice, and explores the reasons young adults do not always converse with romantic partners about sexual health issues.

2.3 Communication About Sexual Health

Sexual communication is the exchange of "verbal and nonverbal messages in a mutual effort to co-create meaning about sexual beliefs, attitudes, values or behavior" (Warren & Warren, 2014, p. 186). This study is primarily concerned with sexual health information seeking and communication about STIs and safe sex; however, sexual communication encompasses a

broad range of topics including but not limited to reproduction, desire, satisfaction, infidelity, and the process by which someone selects potential partners for sexual relations (Davis et al., 2006; Metts & Spitzberg, 1996; Metts, Sprecher, & Regan, 1998). Parents often serve as the first individuals with whom children communicate about sex (DiIorio, Kelley, & Hockenberry-Eaton, 1999; Warren & Warren, 2014). Effective parent-child communication about sex is positively related to children's subsequent discussion of sex with dating partners (Warren & Warren, 2014). Compared with adolescents who do not discuss sexual health issues with their parents, most research has found adolescents who have these discussions are more likely to delay sexual onset, engage in safe sex behaviors, have fewer sexual partners, and have greater perceived efficacy to discuss sex communication with their partners (e.g., DiIorio et al., 1999, 2000; Hadley et al., 2009; Hutchinson, Jemmott, Jemmott, Braverman, & Fong, 2003; Richardson, 2013). In addition, parent-adolescent communication moderates unhealthy peer influence on adolescents' sexual behavior such that peer norms are more strongly related to sexual behavior among adolescents who do not discuss sex or condoms with a parent (Whitaker & Miller, 2000). Still, research on parent-adolescent communication about sexual health has not demonstrated this practice to have uniformly beneficial outcomes. For example, Somers and Paulson (2000) found parent-child sex communication to be correlated with increased sexual behavior, which they suggested may be due to these conversations occurring after the onset of sexual behaviors rather than before. In addition, Huebner and Howell (2003) found parent-child communication to have no effect on sexual risk taking, which they ascribed to methodological limitations of their study. Another possible explanation for the aforementioned contradictory findings is that parents may be more likely to discuss certain sexual health issues such as contraception or the menstrual cycle (with female children) than to discuss STIs when talking with their children about sexual

health issues (Ancheta, Hynes, & Shrier, 2005). Whereas parents often serve as adolescents' initial information source about sex-related issues, friends and dating partners usually become young adults' primary information source about sex (Rutledge, Siebert, Chonody, & Killian, 2011; Warren & Warren, 2014).

In the U.S., the high prevalence of STIs is a major public health concern and “the uncertainty around the risk of contracting HIV/AIDS and other STIs has made the desire to know the sexual histories of current and prospective sexual partners more salient than ever before” (Lo, Zea, & Poppen, 2009, p. 254). Indeed, youths are more concerned about sexual health issues than any other health issue and wish they knew more about preventing and recognizing STIs (Hoff, Greene, & Davis, 2003). Many adolescents and young adults also wish to learn how to communicate more effectively with sexual partners (Hoff et al., 2003).

Approximately half of teenagers discuss contraception or STIs with their first sexual partner prior to having sex for the first time (Ryan, Franzetta, Manlove, & Holcombe, 2007). The reasons for young adults' infrequent sex communication with partners are multi-faceted and complex. Many young adults consider sexual health to be an inappropriate or uncomfortable topic to discuss with sexual partners (Cleary, Barhman, MacCormack, & Herold, 2002; Coleman & Ingham, 1999; Parker & Ivanov, 2013). Thus, they may not communicate about important sexual health issues (e.g., Trieu, et al., 2010) despite STIs being among the sexual health issues for which young people most desire information (e.g., Forrest, Strange, & Oakley, 2004).

Additional reasons for inadequate partner communication include lack of sexual experience, general communication apprehension, concern over partners' reactions, underestimating one's vulnerability to STIs, social expectations, and fear of raising sex-related issues (Coleman & Ingham, 1999; Crosby et al., 2002; Ethier et al., 2003; Goldman, Martin,

Bryand, DiClemente, & Ditrinco, 2014; Marston & King, 2006; Troth & Peterson, 2000; Whitaker et al., 1999; Wright, Randall, & Hayes, 2012). Relationship type may also play a role, as individuals in casual sexual relationships may communicate about sex less frequently than individuals in committed sexual relationships (Lehmiller, VanderDrift, & Kelly, 2014). Individuals may also overestimate their knowledge of partner's sexual health due to feelings of emotional safety, trust, and familiarity (Lo et al., 2009). Finally, when asking a partner about his or her sexual history, a person may invite questions about his or her own sexual health and history and may thus be less willing to seek information that they themselves would be reticent to reveal (Lo et al., 2009).

In regard to gender differences, young women, in particular, may perceive themselves as not having certain sexual rights such as asking a partner if he has been examined for STIs (Rickert et al., 2002). Indeed, "although talking about sex is an important behavior, it is not a simple one" (Whitaker, Miller, May, Levin, 1999, p. 117). Even after receiving an STI diagnosis, some young women may still not attempt to negotiate condom use with subsequent sexual partners, thereby putting themselves and their partners at risk (East, Jackson, O'Brien, & Peters, 2011).

Communicating with one's sexual partner is a beneficial self-protective health behavior. Partner communication predicts more consistent contraceptive use (e.g., Davies et al., 2004) and may help an individual learn about a partner's prior sexual behavior and current state of sexual health, which could presumably lead to safer sexual decisions (Stoner et al., 2003; Whitaker et al., 1999). Without this information, individuals' decisions about the safety of potential sexual encounters may be based on "less valid indicators" (Whitaker et al., 1999, p. 117). These may include risk-irrelevant factors such as the attraction or personality of a partner/prospective

partner and unsupported assumptions that the individual poses little or no sexual risk (e.g., Agocha & Cooper, 1999; Clark, Miller, Harrison, Kay, & Moore, 1996; Knäuper, Kornik, Atkinson, Guberman, & Aydin, 2005; Mosher, Chandra, Jones, 2005; Regan & Dreyer, 1999). For example, in their study of dating couples, Swann and Gill (1997) found that as relationship length increased and involvement deepened, individuals became more confident in their impressions of their partner's sexual history, yet these impressions were often inaccurate. In addition, young adults may feel comfortable discussing sexual health issues with partners, but elect to forego these discussions if they consider them unnecessary. For example, in a study of sexually active female college students, Hickey and Cleland (2013) found nearly 9 in 10 reported that they would be comfortable discussing STI risk reduction with partners; however, many perceived themselves to be at no risk of contracting an STI, especially if they had only one sexual partner. The belief that one is not at risk for STIs may be inaccurate depending on the sexual history of one's partner (Hickey & Cleland, 2013).

As noted, sexual communication skills and partner communication have repeatedly been shown to influence individuals' adoption of protective behaviors such as the use of condoms and other contraceptives (e.g., Davies et al., 2004; Halpern-Felsher, Kropp, Boyer, Tschann, & Ellen, 2004; Scholly, Katz, Gascoigne, & Holck, 2005; Stone & Ingham, 2002; Widman et al., 2006; Widman, Choukas-Bradley, Helms, Golin, & Prinstein, 2014). Young adults who expect positive outcomes to result from discussing safe sex with their partners are likelier to engage in these discussions (DiIorio et al., 2000). Preliminary research also suggests sexually active adolescents who use technology to communicate (e.g., text messaging, private messages on social media) with partners about sexual health issues are likelier to consistently use condoms (Widman, Nesi, Choukas-Bradley, & Prinstein, 2014). However, as with parent-adolescent sex

communication, some research has found communication with sexual partners may lead to negative outcomes. For example, Guzmán et al. (2003) found comfortable sex communication with dating partners to be related to less intention to delay intercourse and not predictive of intentions to use contraceptives, which may increase likelihood of STI contraction and/or early pregnancy. In addition, interventions to improve individuals' communication skills regarding safe sex practices do not always lead to behavioral change. For example, Tulloch, McCaul, Miltenberger, and Smyth (2004) tested an intervention to improve partner communication and increase condom use among college couples. They found that despite acquiring the necessary skills during the intervention, post-intervention analyses revealed participants failed to change their communication and condom use behaviors (Tulloch et al., 2004).

Scholars have stressed the importance of understanding the communication dynamics that precede sexual activity (Campo, Askelson, Spies, & Losch, 2012; Noar et al., 2006; Noar & Edgar, 2009; Warren et al., 2012). Improving the quality and frequency of partner communication may increase the likelihood of safe sex and contribute to more informed sexual decision-making, thereby lowering one's risk of STI acquisition and transmission (Manlove, Ryan, & Franzetta, 2004, 2007; Scott et al., 2011; Stoner et al., 2003; Wang, 2013). Individuals may use a number of communication strategies to discuss sexual health issues with intimate partners (Broaddus, Morris, & Bryan, 2010). One strategy is to directly ask one's partner about his or her sexual health and history. The TMIM may be a useful framework to understand the factors that motivate an individual to engage in this communication strategy (e.g., Afifi & Weiner, 2006). Whereas most models of health behavior (e.g., the Health Belief Model) have slighted the role of communication and/or focused predominantly on information providers rather than information seekers (Johnson & Case, 2012), the act of communication is central to

the TMIM. Interpersonal communication theories of uncertainty are a necessary introduction to the TMIM because they provide the foundation on which the theory is premised. Thus, the next section offers a brief definition of uncertainty, a look at how uncertainty is conceptualized and studied within interpersonal contexts, and a review of several interpersonal communication theories of uncertainty on which the TMIM draws.

2.4 Interpersonal Communication Theories of Uncertainty

Uncertainty is conceived as intrinsic to the human experience and, over the past several decades, communication scholars have increasingly sought to understand how individuals manage uncertainty (e.g., Goldsmith, 2001; Hogan & Brashers, 2009). Uncertainty is “virtually a synonym for describing the gaps that often trigger information seeking” (Johnson & Case, 2012, p. 126). Because uncertainty largely reflects one’s belief in his or her ability to derive meaning, “a person who believes himself or herself to be uncertain is uncertain” (Brashers, 2001, p. 478). Individuals experience uncertainty when “details of situations are ambiguous, complex, unpredictable, or probabilistic; when information is unavailable or inconsistent; and when people feel insecure in their own state of knowledge or the state of knowledge in general” (Brashers, 2001, p. 478).

Uncertainty and communication are closely intertwined and often influence one another (Brashers, 2007). For example, comfortable sexual communication may reduce an individual’s uncertainty about the sexual health of his or her partner, whereas an individual who is uncertain about how to act on a first date may find his or her communication constrained. In the context of interpersonal communication, uncertainty concerns “the way that humans negotiate meanings, identity, and relationships through person-to-person communication” (Braithwaite & Baxter, 2008, p. 4). Within interpersonal milieus, uncertainty is one’s perception that he or she is unable

to make attributions or predictions about others or the environment (Ni & Wang, 2011).

Uncertainty is examined within myriad interpersonal settings, but may be particularly worthy of attention within the context of romantic relationships and courtships due to the dyadic involvement and fluctuations in ambiguity that often characterize these relationships (Emmers & Canary, 1996; Knobloch & Carpenter-Theune, 2004; Theiss & Solomon, 2008). Relational uncertainty, defined as “the degree of confidence people have in their perceptions of involvement within an interpersonal relationship” arises from uncertainty about one’s participation in the relationship, their partner’s involvement in the relationship, and/or the relationship itself (Knobloch & Solomon, 1999, p. 264).

Early theories of uncertainty operated under the assumption that people have an innate drive to reduce uncertainty so as to make their world more predictable (e.g., Berger & Calabrese, 1975). To reduce uncertainty, individuals may seek information to learn relevant facts about an issue in order to increase certainty and subsequently reduce tension (Case et al., 2005; Johnson & Case, 2012). Although information may reduce uncertainty by helping people grasp the relative likelihood of a particular outcome of interest, information may also increase uncertainty if this knowledge leads individuals to recognize additional possible outcomes or changes their assessment of the likelihood of a given outcome (Johnson & Case, 2012). More recent theories of uncertainty assume individuals may indeed be driven to reduce uncertainty, yet may also wish to maintain or even increase uncertainty (e.g., Afifi & Afifi, 2009b; Babrow, Kasch, Ford, 1998; Bradac, 2001; Brashers, 2007). This is because maintaining or increasing uncertainty, “can play an important role in preserving and establishing psychological well-being in some circumstances” (Brashers et al., 2000, p. 64).

The TMIM draws on a number of interpersonal communication theories of uncertainty³, which have been developed and refined over the past four decades, in an attempt to predict and explain how individuals address uncertainty. Prior to an examination of the propositions that underlie the TMIM, a brief review of five theories on which the TMIM draws is provided so as to establish the foundation on which the TMIM is predicated. The following theories are discussed: uncertainty reduction theory, predicted outcome value theory, anxiety uncertainty management theory, problematic integration theory, and the theory of communication and uncertainty management.

2.4.1 Uncertainty Reduction Theory

Uncertainty reduction theory (URT; Berger & Calabrese, 1975) represents the earliest theorizing about the role of uncertainty in relationship development and was initially proposed to explain how individuals attempt to reduce uncertainty when communicating with a new acquaintance. Predicated on the assumption that people have an innate drive to reduce uncertainty about oneself and others during initial interactions, URT put forth a series of axioms and theorems, which collectively sought to detail the interrelations between uncertainty, amount of communication, and information seeking, among other characteristics of a communicative act (Berger & Calabrese, 1975). According to URT, three sources of uncertainty exist within interpersonal relationships: (1) self uncertainty, which is when an individual is not able to predict or explain his or her own attitudes or behaviors; (2) partner uncertainty, which is when an individual cannot predict or explain the attitudes or behaviors of his or her partner; and (3) relationship uncertainty, which is when an individual experiences uncertainty about the status of the relationship (Berger & Bradac, 1982; Berger & Calabrese, 1975).

³ Many key theories on which the TMIM draws are discussed here. Additional theories that ultimately contributed to the development of the TMIM can be found in Afifi and Weiner (2004).

A central tenet of URT is that when an individual is engaged in an initial interaction with a new acquaintance, his or her inability to predict and explain the other individual's actions is the central motivating force that guides behavior (Berger & Calabrese, 1975). That is, the theory assumes that lack of knowledge about others leads to attempts to reduce uncertainty, which is conceived as having exclusively negative repercussions in the context of relationships. Berger (1995) suggests an individual may seek to reduce uncertainty about another person through several strategies including passive approaches (e.g., unobtrusive observation), active approaches (e.g., asking a common acquaintance about the individual), or interactive approaches (e.g., engaging the individual directly).

As an individual acquires additional information about the person with whom he or she has begun interacting, the information is thought to reduce uncertainty (Berger & Calabrese, 1975). This replacement or reduction in uncertainty is required for clear, productive interactions to occur and for individuals to have a sense of control over their environment (Goldsmith, 2001). Importantly, URT does not predict differences based on the valence of information (i.e., positive vs. negative), but rather assumes that regardless of valence, the same quantity of information would reduce the same amount of uncertainty (Yoo, 2009). In 1979, Berger revised URT as an acknowledgement that uncertainty reduction in initial interactions may not always be one's goal. Rather, certain conditions (e.g., expectations of future interaction) need to be present (Berger, 1979). Several years after the introduction of URT, additional interpersonal communication theories of uncertainty were put forth to explain how factors such as cultural differences between individuals may impact initial interactions and how individuals in new interactions may wish to accomplish objectives beyond reducing uncertainty.

2.4.2 *Anxiety Uncertainty Management Theory*

Developed by Gudykunst (1983), anxiety uncertainty management (AUM) theory incorporates many elements of URT and extends the theory. Whereas URT focuses on intracultural relationships, AUM examines the influences of intercultural relationships, communication apprehension, and relationship type on communication effectiveness (Gudykunst, 1995). The theory assumes that in an intercultural encounter, at least one person is a stranger. That is, AUM conceives two people from different cultures/ethnicities communicating as akin to strangers from the same culture communicating (Neulip, 2012).

Situated within the context of understanding face-to-face communication, AUM theory suggests that during initial interactions, individuals experience heightened anxiety and uncertainty, which hinders effective communication (Gudykunst, 1993, 1995). A key difference between URT and AUM is that whereas URT is concerned exclusively with efforts to reduce uncertainty, AUM suggests that individuals wish to *manage* uncertainty and anxiety (Gudykunst, 1993, 1995). Of this conceptual shift in understanding uncertainty, Neulip (2012) writes, “To be sure, during initial intracultural and initial intercultural encounters the primary motive is to reduce uncertainty. Once a certain amount of uncertainty has been reduced, interactants then move to manage uncertainty . . .” (p. 3). AUM theory differentiates between uncertainty, which is viewed as cognitive, and anxiety, which is perceived primarily as affective and refers to the apprehension about potential negative outcomes (Gudykunst & Hammer, 1988). In sum, AUM theory suggests that a reduction of both uncertainty and anxiety mediates the relationship between causal variables (e.g., cultural dissimilarity) and communication outcomes (Gudykunst, 1995).

2.4.3 Predicted Outcome Value Theory

Predicted value theory (POV) was developed as a critique that URT adopts a limited approach to understanding human communication. POV theory suggests individuals' primary motivation during initial interactions is to maximize the outcomes of future interactions with said individuals (Sunnafrank, 1986, 1990). That is, whereas URT posits that communication decisions are a product of individuals' desire to reduce uncertainty and maximize predictability in initial interactions, POV theory suggests these initial exchanges ultimately seek to maximize the potential of the relationship in the future (Sunnafrank, 1986, 1990). Thus, POV suggests that when positive outcomes are expected to result from continued interactions with a relational partner, individuals seek to prolong the interaction, increase the likelihood of future contact, and develop the relationship (Sunnafrank, 1986). Conversely, when an individual expects negative relational outcomes to ensue, he or she is less likely to try and pursue a relationship (Sunnafrank, 1986). In short, "people are constantly striving to predict their outcome of communication interactions in order to assess whether to engage further or to disengage altogether" (Young, Kelsey, & Lancaster, 2011, p. 373). POV theory and the aforementioned interpersonal communication theories of uncertainty are largely concerned with efforts to reduce and manage uncertainty in initial interactions. However, as is next discussed, several frameworks exist to explain how individuals manage uncertainty in circumstances in which uncertainty is not necessarily about another individual, but rather about an unfamiliar situation.

2.4.4 Problematic Integration Theory

Problematic integration (PI) theory is a framework concerned with message reception and processing that seeks to explain how individuals make sense in situations that are not easily understood (Babrow, 1992). PI theory suggests people form both probabilistic and evaluative

orientations of their world, and that these orientations are integrated with one another (Babrow, 1992, 2001; Babrow, Kline & Rawlins, 2005). Probabilistic orientations, which refer to an individual's perceptions of the likelihood that something will happen, may change based on an individual's exposure to relevant information (Babrow, 1992, 1995). Bradac (2001) provides the following example: If an individual catches someone repeatedly lying, the individual will assume that person is likely dishonest. Evaluative orientations concern perceptions as to whether the event, characteristic or outcome is positive, negative, or neutral (Babrow, 2003).

Probabilistic and evaluative orientations are said to be integrated in three unique, yet interrelated ways (Babrow, Hines, & Kasch, 2000). These include (1) reciprocal influence; (2) when connected with probabilities and evaluations of other things; and (3) when connected with ongoing intentions or behaviors (Babrow et al., 2000). Importantly, the integration of the probabilistic and evaluative orientations is not always problematic. For example, Bradac (2001) suggests an individual who perceives himself or herself to be at very low risk for acquiring a negative health outcome is unlikely to devote much cognitive energy to thinking about said outcome. However, integration is said to be problematic when probabilistic and evaluative orientations create tension or conflict, which may present in many forms such as anxiety or ambivalence (Babrow, 1992, 1995). Importantly, PI theory suggests that while communication may be a source of conflict, communication also has the potential to help individuals further integrate probabilistic and evaluative orientations, thereby helping to resolve conflict (Babrow, 1995). As an example of the theory's practical application, Cohen (2009) used PI theory to examine how African American women's worries about breast cancer and their perceptions of the impact breast cancer would have on their lives influence the ways in which they communicate about the disease.

2.4.5 *Uncertainty Management Theory*

Derived from PI theory, uncertainty management theory (UMT) also seeks to explain any situation in which uncertainty may arise, not just situations in which an individual has limited knowledge about another individual, as is the case with URT (Bradac, 2001). However, UMT differs from PI theory by suggesting “individuals may use uncertainty as a tool or resource, which means that sometimes this cognitive state will be cultivated rather than eradicated” (Bradac, 2001, p. 464). Put another way, reducing uncertainty is just one strategy by which an individual may attempt to manage uncertainty (Brashers, 2001, 2007). The theory proposes that people may prefer to remain in a state of uncertainty or even confusion rather than one of reduced uncertainty (Brashers, 2007). How people attempt to manage uncertainty is determined by their appraisals and emotional responses to the experience (Brashers, 2007). In general, people seek to (a) decrease uncertainty if it causes distress, (b) maintain uncertainty if it is comfortable for them, or (c) increase uncertainty if they are not as uncertain as they desire (Brashers, 2007). Information can decrease uncertainty by helping individuals deduce meaning about events or situations and by helping individuals to distinguish among various options, thus making some options appear more attractive or likely than others (Brashers, 2001, 2007). In some situations, however, individuals seek to maintain uncertainty. Indeed, in regard to the topic of this study – partner communication about STIs – research has found individuals may prefer to not know their own STI status or that of their partner (e.g., Barth et al., 2002). This may be the case for individuals who would rather remain uncertain about their partners’ STI status than the alternatives: potentially knowing one’s partner is infected or having a conversation that leads to other information about their sexual history that one may find displeasing (e.g., number of partners, sexual practices, infidelity). Finally, an individual may wish to increase uncertainty in

situations in which he or she desires information that contradicts one's current beliefs (Brashers, 2001, 2007). For example, an individual who believes he or she is experiencing STI symptoms may search for information that yields alternative, more desirable explanations for the symptoms.

2.4.6 Summary

The aforementioned theories of uncertainty collectively seek to explain the conditions under which an individual may seek to reduce, maintain, or increase their level of uncertainty about a particular individual, issue, or event. However, explaining or predicting how uncertainty can be actively or intentionally elicited falls outside their realm. Health communication professionals may wish to prompt uncertainty, in part, because individuals who actively search for health information (in an attempt to reduce uncertainty, for example) may experience benefits. These include increased likelihood of engaging in health-enhancing behaviors, preventive behaviors, and screening tests (Dutta-Bergman, 2005; Kelly et al., 2010; Seo & Matsaganis, 2013; Shim, Kelly, & Hornik, 2006). Seeking health information may also increase individuals' knowledge of their condition (Kalichman et al., 2003) and their proclivity to maintain a healthy lifestyle (Rimal, Flora, & Schooler, 1999). Thus, if uncertainty about a health issue leads to active health information seeking, desirable outcomes may ensue.

2.5 Prompting Uncertainty Discrepancy

Because the TMIM suggests the information management strategy an individual chooses to adopt is the denouement of a process that originates with an individual's awareness that a gap exists between the amount of uncertainty he or she has about an issue and the amount of uncertainty he or she desires, it reasons that influencing uncertainty discrepancy and the ensuing emotions could ultimately influence individuals' propensity to actively seek information. Myriad approaches exist to potentially influence the aforementioned variables that comprise the TMIM's

interpretation phase. For example, Afifi and Weiner (2006) sought to influence uncertainty discrepancy and anxiety about the sexual health of romantic partners with a fact sheet about STIs. The approach did not yield statistically significant differences between the experimental and control groups. Thus, the current study attempts to influence uncertainty discrepancy and anxiety via a different approach, predicated on uncertainty-identity theory (UIT; Hogg, 2000, 2007), which stresses the importance of group identification as a means with which individuals try to reduce uncertainty.

2.5.1 Uncertainty-Identity Theory

Predicated on social identity theory (Tajfel & Turner, 1979), UIT is a social-psychology theory that suggests “people identify with groups to reduce uncertainty about who they are and how they should behave” (Hohman & Hogg, 2011, p. 751). More specifically, individuals’ uncertainty about their self-identity and perceptions of how others will view or treat them serve as motivation to reduce self-uncertainty (Hogg, 2007). UIT is not explicitly concerned with altering an individual’s uncertainty about particular individuals or situations. However, this study uses the theory’s propositions to guide the creation of a narrative intended to influence participants’ uncertainty and ensuing anxiety about their knowledge of the sexual health of a romantic partner.

The theory proposes that feelings of uncertainty about oneself are “aversive” and lead an individual to attempt to eliminate these undesirable feelings (Hogg, 2009). Uncertainty is said to be aversive because it makes anticipating the future and developing plans of action more challenging (Hogg, 2013). UIT posits that efforts to reduce self-uncertainty may be most effective when focusing on group identification through self-categorization (Hogg, 2009).

Two central tenets underlie UIT. First, uncertainty about one's identity and how he/she should behave motivates uncertainty reduction (Hohman & Hogg, 2011). Second, self-categorization reduces self-uncertainty because it provides a group prototype as to how one should behave in a given situation (Hohman & Hogg, 2011). People are influenced by group prototypes because these subjective norms prescribe context-specific attitudes and behaviors that are appropriate for or representative of group members (Smith, Hogg, Martin, & Terry, 2007). The social categorization of oneself reduces uncertainty because it leads to depersonalization, which prescribes one's own behavior and is also associated with a sense of identification, belonging, and perceived consensual in-group support (Hogg, 2009). Because efforts to reduce uncertainty may be cognitively demanding, UIT assumes people only seek to resolve uncertainties they perceive as important (Hogg, 2013). Individuals' perception of importance may be highest when uncertainty is experienced for topics relevant to oneself and one's identity (Hogg, 2013). Another key expectation of the theory is that individuals are particularly motivated to reduce uncertainty when they perceive they have the necessary resources to do so (Hogg, 2009). The decision to use UIT as a guiding framework for an experiment to influence uncertainty discrepancy is further affirmed when the aforementioned propositions of the theory are considered alongside the fact the TMIM is particularly applicable for issues perceived as important (Afifi & Weiner, 2004) and that sexual health is among the health issues for which young adults most desire information and may experience uncertainty (Hoff et al., 2003; Lo et al., 2009).

The next section discusses the development of the TMIM, applications of the theory, how the theory seeks to address some perceived limitations of other uncertainty frameworks, and recent directions in the development and application of the TMIM.

2.6 Theory of Motivated Information Management

Despite the contributions of the aforementioned theories of interpersonal communication to understanding uncertainty management, the TMIM was developed “as a result of dissatisfaction with some aspects of existing uncertainty frameworks, most notably their predictive specificity, their tendency to overlook the role of efficacy, and their limited treatment of the interactive nature of the information management process” (Afifi & Morse, 2009, p. 87). The TMIM proposes that when someone experiences uncertainty about an issue of perceived importance, his or her intentions to seek information to reduce uncertainty are determined by factors such as (a) the discrepancy between the amount of uncertainty an individual perceives himself/herself to have and the amount of uncertainty he or she desires, (b) anxiety stemming from the aforementioned uncertainty discrepancy, (c) perceptions of the expected outcomes that would result from seeking information, and (d) self-efficacy to obtain the desired information from the specific individual in possession of the information (Afifi & Weiner, 2004). The sexual health of one’s partner/prospective partner is one issue for which an individual may experience uncertainty (Lo et al., 2009). Although numerous theories exist to study uncertainty and information management, the TMIM may be particularly suited to understand these concepts within the context of sex communication between partners. This is because the theory and its constructs privilege the unique characteristics of interpersonal communication, which is a central dynamic of partner communication about sexual health.

The TMIM focuses on active information management efforts that occur through interpersonal channels (Afifi & Weiner, 2004)⁴. To date, the TMIM has been applied to understand individuals’ information seeking processes about issues such as organ donation (Afifi

⁴ Though this project focuses on the role of the information seeker, the TMIM also provides a framework to examine the role of the information provider (see Afifi & Weiner, 2004; Dillow & LaBelle, 2014).

et al., 2006), family health history (Horvick, 2014), caregiving (Fowler & Afifi, 2011), adolescent topic avoidance with parents (Afifi & Afifi, 2009a), and end-of-life preferences (Rafferty, Cramer, Priddis, & Allen, 2015). Recently, the theory has also been applied to examine information acquisition via the Internet from specific individuals (Tokunaga & Gustafson, 2014).

The TMIM proposes a three-phase appraisal process (interpretation, evaluation, decision) through which a potential information seeker progresses, which culminates in the selection of an information management strategy (Afifi & Weiner, 2004). The interpretation phase consists of (1) an individual's awareness that a difference exists between the amount of uncertainty he or she has about an issue and the amount of uncertainty he or she desires about said issue, and (2) the anxiety that stems from this awareness (Afifi & Weiner, 2004). In the evaluation phase, the individual assesses the expected outcomes of an information search and his or her perceived efficacy to obtain the desired information from the target individual (Afifi & Weiner, 2004). Finally, in the decision phase, the individual chooses his or her information management strategy, which may include seeking relevant information, avoiding relevant information, or cognitively reappraising one's desire for information (Afifi & Weiner, 2004). For several years, applications of the TMIM model only examined the influence of one emotion – anxiety – on the model's core constructs. Recently, Afifi and Morse (2009) suggested the TMIM could account for a wider range of possible emotions than anxiety, which is said to partially mediate the influence of the interpretation phase on the evaluation phase. This led the authors to revise the original model and produced the current model (Figure 1). Each of the three phases of the TMIM are next discussed in detail.

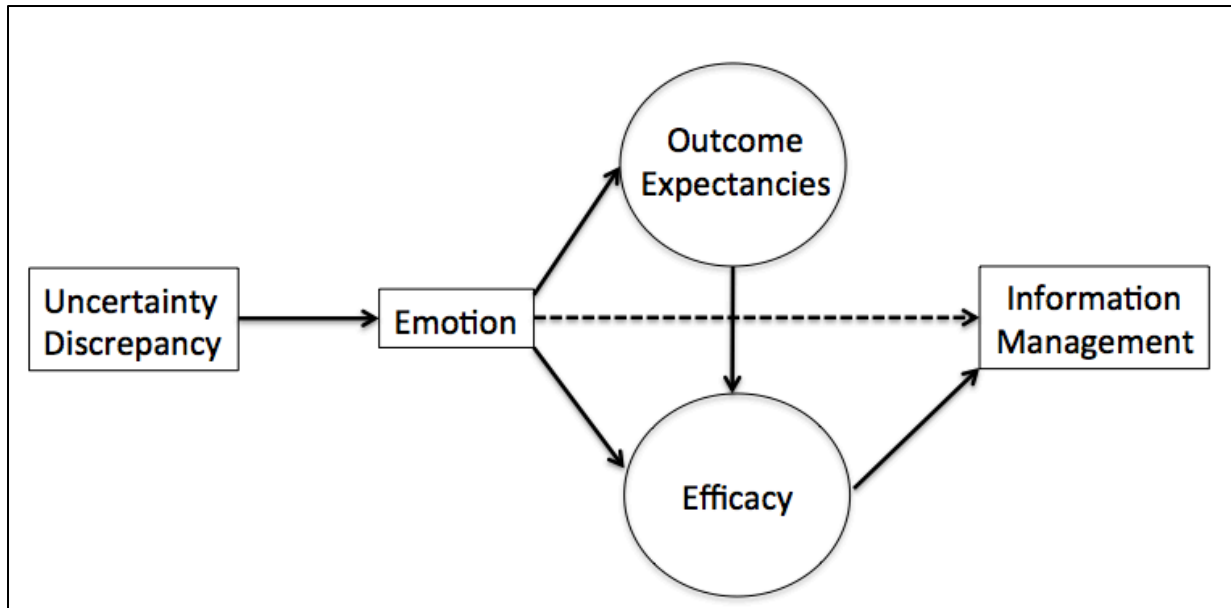


Figure 1. The theory of motivated information management model.

2.6.1 Interpretation Phase

The first phase of the TMIM model, the interpretation phase, is characterized by an individual's awareness that the amount of uncertainty he or she has about an issue differs from the amount of uncertainty he or she desires about said issue ("uncertainty discrepancy") and the anxiety that ensues from this awareness (Afifi & Weiner, 2004). The recognition that one's current uncertainty about an issue differs from his or her desired uncertainty about an issue is the onset of a process that ultimately results in decisions about whether – and how – to seek information to address this uncertainty discrepancy (Fowler & Afifi, 2011). Although Afifi and Weiner (2004) acknowledge other motivational factors contribute to decision making, they argue "uncertainty discrepancy and anxiety are those most central to initiating the process of information management in interpersonal exchanges" (p. 174). Consistent with more recent theories of uncertainty management, the TMIM proposes that individuals may desire to decrease,

maintain, or increase uncertainty (Afifi & Weiner, 2004). That is, individuals desire varying degrees of uncertainty about different issues.

As noted, the initial iteration of the TMIM posited that uncertainty discrepancy about an issue leads to anxiety, which subsequently motivates individuals to address this reaction (Afifi & Weiner, 2004). That is, anxiety was thought to motivate individuals to assess their information management options (Afifi & Weiner, 2004). Importantly, “the reduction of anxiety is what ultimately serves as the motivational force that guides information-management decisions, not the management of the uncertainty discrepancy” (Afifi & Afifi, 2009a, p. 491). The revised TMIM proposes that uncertainty discrepancy about an issue produces an emotional response, which subsequently motivates individuals to address this reaction (Afifi & Weiner, 2009). Emotions can be conceptualized as “multicomponent response tendencies that unfold over relatively short time spans” (Fredrickson, 2001, p. 219). According to Fredrickson (2001), an emotion starts when an individual consciously or unconsciously assesses the personal meaning of an event, which then produces response tendencies such as cognitive processing, facial expressions, or physiological changes. In the TMIM, anxiety/emotion represents the “conclusion” of the first phase of the model and is thus thought to partially mediate the effects of uncertainty discrepancy on the evaluation and decision phases and may thus reduce the path from uncertainty discrepancy to subsequent variables in the model (Afifi & Weiner, 2009).

2.6.2 Evaluation Phase

In the second phase of the TMIM, the evaluation phase, two series of cognitive appraisals related to information management are made: (1) assessing the expected outcomes of an information search, and (2) assessing one’s perceived ability to obtain the desired information (Afifi & Weiner, 2004). These constructs are central to several psychological and motivational

theories such as expectancy-value theory, attribution theory, and self-efficacy theory (for a review, see Eccles & Wigfield, 2002). Both sets of assessments are thought to partially mediate the effect of emotion on the information management decision (Afifi & Morse, 2009). Though closely related, outcome expectancies and efficacy differ in that an “outcome expectancy is an assessment of rewards and costs that will likely result from an action, while efficacy judgments reflect whether something or someone can engage in that action” (Afifi et al., 2006, p. 193). The TMIM suggests outcome expectancies precede efficacy because an individual’s beliefs about the outcome of an action are thought to influence an individual’s perceptions that he or she has the necessary skills and abilities to perform tasks related to the outcome and to cope with the consequences (Afifi et al., 2006).

Outcome expectancies are predicated on the assumption that individuals envision likely outcomes of prospective behaviors prior to deciding whether or not to perform the behaviors (Bandura, 1989). The TMIM has three outcome assessment components, each of which is thought to influence individuals’ perceptions of an information management strategy (Afifi & Weiner, 2004). First, *outcome expectancies* refer to an individual’s beliefs about the breadth of possible outcomes that may result from an action (Afifi & Weiner, 2004). These outcomes include the perceived benefits and costs of the information seeking process and the anticipated results. For example, an individual may perceive raising sexual health issues with one’s partner to have benefits (e.g., increased knowledge about partner) and/or costs (e.g., upsetting one’s partner). Second, *outcome importance* refers to the relative priority an individual places on the aforementioned expected benefits and costs (Afifi & Weiner, 2004). In the case of sexual communication, an individual may perceive the benefits of knowing about a partner’s sexual history to be more important than the perceived costs of initiating this discussion (e.g., learning

information that could potentially have adverse effects on the relationship). Third, *outcome probability* is the “perceived likelihood that the outcome expectancies will actually occur” (Afifi & Weiner, 2004, p. 174). Here, an individual may believe that seeking information from a partner about his or her sexual health is more likely to result in certain outcomes (e.g., increased knowledge about partner’s sexual health) than others (e.g., straining the relationship with one’s partner). Collectively, these outcome assessments are thought to affect efficacy.

Efficacy beliefs concern an individual’s perceptions that he or she can successfully perform a particular task (Bandura, 1997). Across myriad health domains, self-efficacy has proven to be among the best predictors of behavioral change (Rimal & Turner, 2009). The TMIM distinguishes between three efficacy components. *Coping efficacy* is the extent to which an individual believes he or she has the necessary resources (e.g., emotional, instrumental) “to manage the process- and results-based outcomes they expect from the information-management strategy under consideration” (Afifi & Weiner, 2004, p. 178). In the context of sexual communication, coping efficacy would refer to an individual’s self-confidence to handle outcomes that may stem from asking a partner about his or her sexual health. These could include, for example, learning new (perhaps undesirable) information about the individual’s sexual health or a romantic partner potentially reacting negatively to this line of inquiry. *Communication efficacy* is an individual’s perception he or she has the skills to successfully complete the communication tasks necessary for the information management process (Afifi & Weiner, 2004). In the context of the current study, communication efficacy concerns how confident an individual is in his or her ability to effectively communicate with one’s romantic partner to gather the desired information about the individual’s sexual health. *Target efficacy* – comprised of target ability and target honesty – captures individuals’ beliefs that the information

target is able and willing to provide complete and trustworthy information (Afifi & Weiner, 2004). For example, target efficacy would concern an individual's confidence that his or partner has an accurate understanding of their sexual health and history and would be willing to share this information. Target efficacy is important determinant of anxiety reduction because, "Seeking information from someone who does not have the necessary information would be seen as futile, while doing so from someone who is not predisposed to offer the information he/she has is also likely to be ineffective" (Afifi, Dillow, & Morse, 2004, p. 432).

The TMIM proposes that positive efficacy assessments are associated with information seeking and negative efficacy assessments with information avoidance (Afifi et al., 2004; Afifi et al., 2006). Recent applications of the theory have supported these propositions. For example, in a study of the information management behaviors of individuals who learn they are the targets of gossip, Rosenberg (2014) found efficacy to be positively related to direct information seeking and negatively related to indirect information seeking. In addition, Wong (2014) found efficacy to talk about HPV with both doctors and parents to be positively related to intent to seek information from each of these sources, respectively.

Finally, the TMIM proposes that efficacy partially mediates the effect of outcome assessments on information-management decisions (Afifi & Weiner, 2004). Recent research supports this proposition (e.g., Jang & Tian, 2012). The extent of mediation is predicated on the valence of these expectancies (Afifi & Weiner, 2004). Specifically, the theory proposes individuals place greater weight on efficacy assessments if they expect negative outcomes to result from an information search, and the decision to pursue information through interpersonal channels thus rests on one's belief in his or her ability to (a) successfully enact the strategy, (b) manage the associated outcomes, and (c) acquire the information from the target (Afifi &

Weiner, 2004). On the other hand, when an individual perceives an information search will lead to positive outcomes, he or she will still draw on efficacy assessments to determine strategies, but these assessments will play a relatively minor role in strategy selection (Afifi & Weiner, 2004). In sum, the theory proposes the weighted combination of the aforementioned outcome and efficacy assessments influence one's likelihood of information seeking (Afifi & Weiner, 2004), which is the focus of the final phase of the TMIM.

2.6.3 *Decision Phase*

The third and final phase of the TMIM, the decision phase, concerns an individual's selection of an information management strategy. In line with Berger and Kellermann (1994), the TMIM suggests individuals who are motivated to manage uncertainty-related emotion have three options: seek relevant information, avoid relevant information, and cognitive reappraisal. When *seeking relevant information*, individuals can employ one of three strategies: passive (e.g., unobtrusive observation of the targeted information provider), active (e.g., manipulation of the environment to see how the target responds or asking a third party for information about the target), or interactive (asking the target for information directly). If individuals determine information seeking is too costly, may not reduce anxiety, or would be unproductive, they may use a second option: actively or passively *avoiding relevant information*. Active avoidance concerns staying away from situations or people who may offer relevant information and/or turning down opportunities to receive this information (Afifi & Weiner, 2004). Passive avoidance reflects an individual's decision to refrain from active information seeking; in other words, the individual lets the issue unfold without trying to learn more about the issue (Afifi & Weiner, 2004). Within the context of health, people may avoid information for myriad reasons such as perceptions the information may be distressing, cause anxiety, conflict with their beliefs,

or fail to satisfy their information needs (Brashers et al., 2002; Johnson & Case, 2012). With regard to sexual health, individuals in the early stages of a romantic relationship often avoid discussing sex and previous sexual partners with one's current partner (Knobloch & Carpenter-Theune, 2004). Finally, *cognitive reappraisal* is when individuals reduce their anxiety by shifting the perceptions of issue importance, the desired level of uncertainty, or the meaning of uncertainty (Afifi & Weiner, 2004). In other words, rather than aiming to reduce uncertainty about an issue through the gathering (or avoidance) of information, individuals reevaluate the amount of uncertainty about the issue that they desire and/or adjust the importance they ascribe to the issue.

Although the TMIM has demonstrated utility as a framework with which to examine information management across a variety of contexts, expanding the scope of emotions for which the model accounts may improve the model's predictive power (Afifi & Morse, 2009). Whereas the original TMIM drew on control theory and activation theory, each of which proposes that uncertainty discrepancy produces anxiety, the most recent iteration of the TMIM more closely aligns with appraisal theories of emotion, which suggest uncertainty discrepancy about an issue produces a negative emotion (Afifi & Morse, 2009). Negative emotions are emotions that result from harm, loss, or threat (Lazarus, 2001) and include emotions such as fear, depression, anxiety, anger, hostility, and hopelessness (Gallo & Matthews, 2003). However, positive emotional responses (e.g., feelings of encouragement, calmness, and happiness) to uncertainty discrepancy may also arise if an individual perceives he or she possesses roughly the same amount of information about an issue as he or she desires (e.g., Fowler & Afifi, 2011).

To provide theoretical justification for replacing anxiety with emotion in the TMIM, Afifi and Morse (2009) discuss how emotions – the conclusion of the first phase of the TMIM – could

influence the two evaluation phase assessments: outcome expectancies and efficacy assessments. In regard to outcome expectancies, Afifi and Morse (2009) draw on two approaches that suggest specific emotions lead to different appraisals and information processing. The first, appraisal-tendency approach (see Lerner, Han, & Keltner, 2007; Lerner & Keltner, 2001), proposes that emotions are associated with specific appraisals (e.g., anticipated effort) and thus influence corresponding goals, judgments, and choices. Indeed, research has demonstrated that, within interpersonal dating relationships, for example, specific emotions are associated with different communicative acts and information management strategies. For example, Knobloch, Solomon, and Huanani (2003) found that when relational certainty elicits emotions such as happiness, individuals in dating relationships are likely to gather information directly from their partner. Conversely, when relational uncertainty elicits emotions such as anger, individuals are likely to engage in avoidance behaviors (Knobloch et al., 2003). The second approach, the cognitive-functional model (see Nabi, 1999, 2002), suggests negative emotions influence the direction and stability of persuasive outcomes and that each emotion is associated with different goals (and strategies to achieve them). In regard to efficacy assessments, Afifi and Morse (2009) point to social cognitive theory (see Bandura, 1997) and the original TMIM (see Afifi & Weiner, 2006) as evidence that emotions may have both direct and indirect effects on efficacy assessments (through their influence on outcome expectancies).

Because uncertainty discrepancy's influence on subsequent emotions (and ultimately on information management decisions) is central to the TMIM, examining how uncertainty discrepancy can be influenced so as to elicit the emotions that ultimately lead individuals to actively seek information is a worthwhile endeavor. Although the TMIM was developed to investigate active information management within interpersonal contexts (Afifi & Weiner, 2004),

health information seeking often occurs via mediated channels (Brashers, 2001) and, as is next discussed, young adults frequently look to the mass media and Internet for sexual health information (e.g., Dolcini, Warren, Towner, Catania, Harper, 2015; Escoffery et al., 2005).

2.7 Seeking Sexual Health Information from Mediated Sources

This study examines the extent to which the TMIM may account for sexual health information seeking from mediated information channels and how this behavior relates to efficacy to obtain sexual health information directly from romantic partners. This is worthwhile, in part, because this knowledge could help health communication practitioners better understand the information sources to which young adults turn to acquire sexual health information and the psychological, emotional, and environmental factors that underlie these decisions.⁵ This could be advantageous for several reasons. For example, the TMIM suggests individuals' perceived efficacy to partake in the needed communication activities, to obtain information from a target individual, and to cope with potential outcomes is positively related to direct information seeking (Afifi & Weiner, 2004) and thus incorporating a measure of mediated information seeking into the model could provide insights into whether a relationship exists between efficacy for interpersonal information acquisition and the use of other channels to fulfill information needs and desires. In addition, if health communication scholars and practitioners wish to encourage partner communication about sexual health issues, knowledge of the specific factors that contribute to (or hinder) these interpersonal communicative acts would allow interventions to be appropriately tailored for target groups that use those particular information channels – whether they may be interpersonal or mediated. Another advantage to applying the TMIM to examine

⁵ The current study discusses seeking sexual health information from mediated channels in general, not using mediated channels for interpersonal communication.

both interpersonal and mediated information sources within the context of sexual health information seeking is that doing so could potentially yield insights into whether young adults are more likely to search for information about specific sexual health issues – contraceptives, STIs, how to communicate with one's partner – from certain sources such as one's partner, friends, or the Internet.

Youths often seek sexual health information from broadcast media, print media, and the Internet, and many view these as beneficial resources to learn about sexual health issues (e.g., Boies, 2002; de Visser, 2005; Khurana & Bleakley, 2015; Lim et al., 2014; Powell, 2008; Suzuki & Calzo, 2004; Willoughby & Jackson, 2013). Sexual health is among the health topics for which young adults are most likely to turn to the Internet for information (Escoffery et al., 2005; Gray, Klein, Noyce, Sesselberg, & Cantrill, 2005). Moreover, the literature on youths' engagement with online sexual health information suggests STIs/HIV/AIDS is the most common sexual health issue for which information is sought (Simon & Danebeck, 2013).

Young adults may search for sexual health information online for reasons such as a desire to reduce uncertainty about sexual health issues, to maintain anonymity while seeking sexual health advice, because they believe this information will be necessary in the future, or because they are exhibiting STI symptoms or received an STI diagnosis (Magee, Bigelow, DeHaan, & Mustanski, 2012; Suzuki & Calzo, 2004). The Internet may be an especially valuable source of sexual health information for youths who are lesbian, gay, bisexual, questioning, or queer (Mitchell, Ybarra, Korchmaros, & Kosciw, 2014).

Youths often perceive discussing sexual health issues with partners, parents, or healthcare professionals to be embarrassing, shameful, and reputation tarnishing (e.g., Cleary et al., 2002; Coleman & Ingham, 1999; de Visser, 2005). Whereas school-based comprehensive sex

education programs previously addressed many sexual health topics, these programs have declined over the past 15 years (Jones & Biddlecom, 2011). Concurrent with the decline in school-based sex education programs is the rise of Internet usage among adolescents (Jones & Biddlecom, 2011). Indeed, “the Internet’s ease of use, its availability to increasingly large numbers of adolescents, and its perceived anonymity regarding sensitive topics are unique in the delivery of sexual information in the digital age” (Simon & Daneback, 2012, p. 306). The Internet may facilitate interpersonal interaction (Cline & Haynes, 2001) and be used for health information seeking by individuals who are more health-conscious (Dutta-Bergman, 2004), which provides further support for information seeking from this medium alongside interpersonal information seeking may be a worthwhile endeavor.

In addition to actively seeking sexual health information from mediated channels, health campaigns and interventions that aim to promote responsible sexual behavior among the youth population have used the media with success (Delgado & Bryn, 2007; Keller & Brown, 2002). Myriad technologies exist to reach young adults with sexual and reproductive health information (for a review, see Levine, 2011). Youths have suggested that modeled partner conversations about STIs in the media may help them broach the subject with their partners (e.g., Friedman & Bloodgood, 2010). Scholars have suggested that media interventions designed to reduce risky sexual behaviors among young adults may be most effective when complemented by interpersonal strategies (Delgado & Bryn, 2007). Worth noting is that young adults may have reservations about accessing sexual health information online within certain contexts. For example, Bryon, Albury, and Evers (2013) found young adults did not believe risk-focused sexual health information should appear on social media sites. Young adults may also struggle to

comprehend basic sexual health information found on the Internet (Buhi, Daley, Fuhrmann, Smith, 2009).

In sum, the apprehension many young adults have about engaging in interpersonal communication with romantic partners about sexual health issues coupled with their willingness to use the Internet and print/broadcast media to learn about sexual health issues highlights the need to examine the extent to which the TMIM is capable of predicting sexual health information seeking from both interpersonal and mediated information channels. As noted, although partner-specific sexual health information (e.g., STI history) is only attainable via interpersonal communication, mediated information channels may, at the very least, offer complementary sexual health information that one's partner may be unable to provide (e.g., STI screening recommendations, effectiveness of different contraceptive methods).

2.8 Study Overview

Discussing sexual health issues with romantic partners may help individuals learn about their partner's sexual health, thereby influencing judgments about the safety of a sexual encounter and subsequent behavioral decisions (e.g., DiIorio et al., 2000; Noar et al., 2006; Whitaker et al., 1999). The TMIM is an appropriate framework with which to examine sexual health information seeking, in part, because the theory emphasizes communication and is applicable for issues that individuals perceive as important and for which they experience uncertainty (Afifi & Weiner, 2004). Youths often experience uncertainty about the sexual health and history of romantic partners and believe knowledge about the sexual health of romantic partners is important (Afifi & Weiner, 2006; Hoff et al., 2003; Lo et al., 2009).

The current study (1) applies the TMIM to understand how college students seek sexual health information from romantic partners, (2) examines the extent to which the TMIM may

account for issue-related (i.e., sexual health) information seeking from mediated information channels, and (3) tests whether a sexual health narrative may influence uncertainty discrepancy and anxiety in regard to individuals' knowledge of their partner's sexual health. Surveys were administered at two points in time (T1 and T2), separated by about three weeks to allow for the measurement of information seeking strategies. At T1, participants were randomly assigned to an experimental group or a control group in order to test whether a health communication message could influence uncertainty discrepancy and anxiety. Specifically, the experimental group read a narrative that featured a trio of college students discussing the importance of sexual communication, which the narrative portrayed as frequent and normative [Appendix A]. The narrative was predicated on UIT, which says people identify with social groups, in part, to reduce uncertainty about how they should behave in a given situation (Hogg, 2007). In the narrative, the main character expressed uncertainty about whether to raise sexual health issues with her romantic partner and her group of friends convinced her she should do so because this practice was normal. By depicting sexual communication among young adults as a normative behavior in which all youths partake, this study aimed to increase uncertainty discrepancy and anxiety among participants who related to the main character's uncertainty about how to behave and who have not engaged in sexual communication with romantic partners with the frequency with which the narrative suggested is customary. The control group read a similarly structured narrative about a trio of college students discussing a topic (nutrition) unrelated to this study. Reading the nutrition narrative would thus not be expected to influence cognitive or emotional responses about the sexual health of romantic partners.

Immediately following the aforementioned attempt to influence uncertainty discrepancy and anxiety, all participants answered the same questions about a specific individual of their

choosing (current, past, or desired romantic partner).⁶ Questions asked about previous efforts to obtain sexual health information from the individual, how much uncertainty participants have about the individual's sexual health and history as compared to their desired uncertainty, perceived efficacy to obtain sexual health information from the individual, the outcomes they expect would result from asking the individual about his/her sexual health, and the extent to which they intend to seek sexual health information from the individual.

At T2, participants reflected on the extent to which they engaged in three interpersonal information management strategies in regard to managing uncertainty about the sexual health of romantic partners (direct information seeking, indirect information seeking, information avoidance). Also at T2, participants reported on the frequency with which they sought sexual health information from mediated information channels. This study thus aimed (1) to examine whether a sexual health narrative could influence uncertainty discrepancy and anxiety about the sexual health of romantic partners (2) to test the TMIM's ability to predict sexual health information seeking from romantic partners, and (3) to examine whether the TMIM could be expanded to account for issue-related information seeking from mediated information channels. To accomplish the aforementioned objectives, a series of hypotheses and a research question, which are next discussed, were put forth.

2.9 Research Question and Hypotheses

The TMIM provides a three-stage model that explains and predicts information management within interpersonal encounters. It thus reasons that health communication practitioners may be able to use the TMIM as a guide to increase health information seeking among target populations. This study explores the extent to which the TMIM can be applied to

⁶ As is discussed in more detail in the Method section, this study only analyzed data for participants who had a romantic partner at the time of the study.

interpersonal sexual health information seeking and tested whether the model could be expanded to explain mediated information seeking. To date, most applications of the TMIM have measured extant uncertainty discrepancy and the ensuing emotion(s) as opposed to attempting to influence these variables. Predicated on UIT, which suggests individuals identify with social groups to reduce uncertainty about how they should behave in a given situation (Hogg, 2013), this study attempts to influence uncertainty discrepancy and anxiety (the variables that comprise the first stage of the TMIM) by presenting participants with a sexual health narrative that features a prototype for what constitutes normal sexual communication behaviors among college students with romantic partners [Appendix A]. Specifically, sexual communication is depicted as commonplace. To examine whether exposure to an STI narrative has the potential to influence an individual's uncertainty discrepancy and anxiety about the sexual health of a romantic partner, the following research question is posed:

RQ1: Do individuals who read a sexual health narrative experience higher uncertainty discrepancy and anxiety about the sexual health of romantic partners as compared with individuals who read a narrative about an unrelated topic?

A primary goal of this study is to examine the extent to which the TMIM predicts individuals' information management strategies in regard to seeking sexual health information from romantic partners. All study hypotheses are examined independent of the experimental design and aforementioned research question. A series of hypotheses predicated on the original TMIM are put forth (H1-H6). All six hypotheses were tested only for participants who had the same romantic partner at T1 as T2. This is because the T1 survey captured the variables that comprise the first two phases of the TMIM model (uncertainty discrepancy, anxiety, outcome expectancies, efficacy), whereas the T2 survey captured the variables that comprise the third and

final phase of the model (information management strategies). Specifically, the T2 survey asked participants to reflect on the extent to which they actually sought (or avoided seeking) sexual health information from romantic partners during the period between the two surveys. Thus, completion of both surveys was necessary for the full model to be tested. Each of the hypotheses predicated on the full TMIM model are discussed in turn.

Starting from the beginning of the TMIM model, uncertainty discrepancy is expected to produce anxiety (Afifi & Weiner, 2004). In the context of the current study, higher uncertainty discrepancy about a romantic partner's sexual health is expected to lead to higher anxiety. To test this proposition, the following hypothesis is put forth:

H1: Uncertainty discrepancy is positively associated with anxiety.

The manifestation of anxiety, which represents the conclusion of the first phase of the TMIM, is expected to motivate individuals to evaluate potential information management strategies. Individuals accomplish this by assessing (1) the outcomes they expect would arise from seeking information from the individual, and (2) their efficacy to obtain desired information and cope with related outcomes (Afifi & Weiner, 2004). The TMIM suggests greater anxiety is negatively related to outcome expectancies and efficacy (Afifi & Weiner, 2004). Thus, for the current study, greater anxiety is expected to be negatively related to outcome expectancies of seeking sexual health information directly from romantic partners. Similarly, greater anxiety is expected to be negatively related to efficacy to acquire sexual health information directly from one's partner and to cope with related outcomes. To test these propositions, the following hypotheses are put forth:

H2a: Anxiety is negatively associated with outcome expectancies.

H2b: Anxiety is negatively associated with efficacy.

Outcome expectancies are expected to lead to information management decisions through efficacy. Applying this proposition to the current study, individuals who have positive or favorable outcome expectancies about seeking sexual health information from romantic partners are expected to perceive themselves as more efficacious to seek sexual health information directly from romantic partners. This proposition is tested with the following hypothesis:

H3: Outcome expectancies is positively associated with efficacy.

The proposition that outcome expectancies is positively associated with efficacy represents the conclusion of the second phase of the TMIM. The third and final phase of the TMIM proposes that efficacy leads to individuals' decisions as to whether and how they will seek information (Afifi & Weiner, 2004). Greater efficacy is said to be positively related to direct information seeking (Afifi & Weiner, 2004). Consistent with the TMIM, efficacy has been shown to be negatively related to indirect information seeking and information avoidance (Afifi & Afifi, 2009a; Dillow & LaBelle, 2014; Rosenberg, 2014). Thus, in the context of the current study, efficacy is expected to be positively associated with sexual health information seeking directly from partners and to be negatively associated with indirect information seeking and information avoidance. The following hypotheses examine the relationships between efficacy and the aforementioned three interpersonal information management strategies.

H4: Efficacy is positively associated with direct information seeking.

H5: Efficacy is negatively associated with indirect information seeking.

H6: Efficacy is negatively associated with information avoidance.

All six hypotheses introduced thus far, predicated on the TMIM, are displayed collectively in Figure 2.

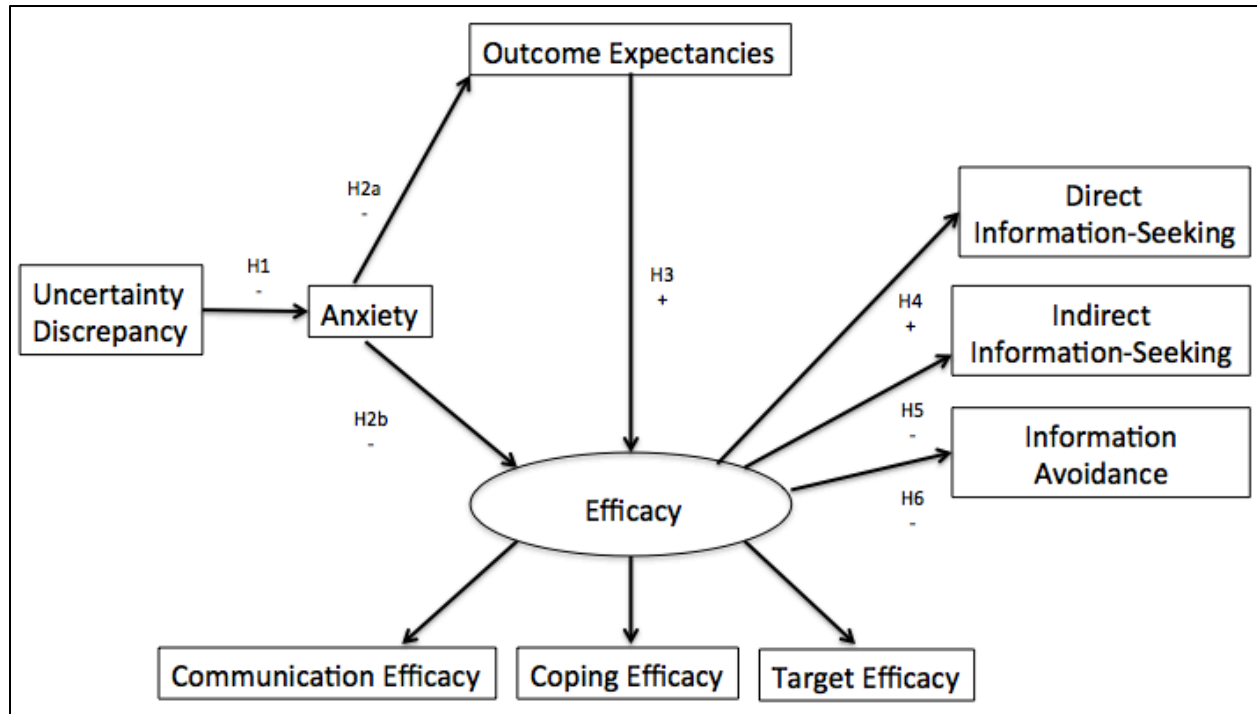


Figure 2. TMIM predicting sexual health information seeking from romantic partners.

To date, applications of the TMIM have investigated how individuals manage information within interpersonal contexts, which is the focus of the theory (Afifi & Weiner, 2004). However, as previously discussed, youths often turn to the Internet or mass media to fulfill sexual health information needs (Escoffery et al., 2005; Simon & Daneback, 2012). Although seeking general sexual health information from mediated information channels does not provide the partner-specific information that can be obtained through communication with romantic partners (e.g., STI history), individuals who do not seek this information from partners, but wish to learn about sexual health issues may turn elsewhere to satisfy their informational needs. Thus, the following hypothesis is put forth, which predicts individuals' efficacy to seek sexual health information directly from romantic partners and to cope with related outcomes will be negatively related to sexual health information seeking from mediated channels:

H7: Efficacy is negatively associated with mediated information seeking.

The proposed relationship between efficacy and sexual health information seeking from mediated information channels is displayed alongside the original TMIM hypotheses (H1-H6) in Figure 3. The newly hypothesized pathway from efficacy to mediated information seeking is represented by H7.

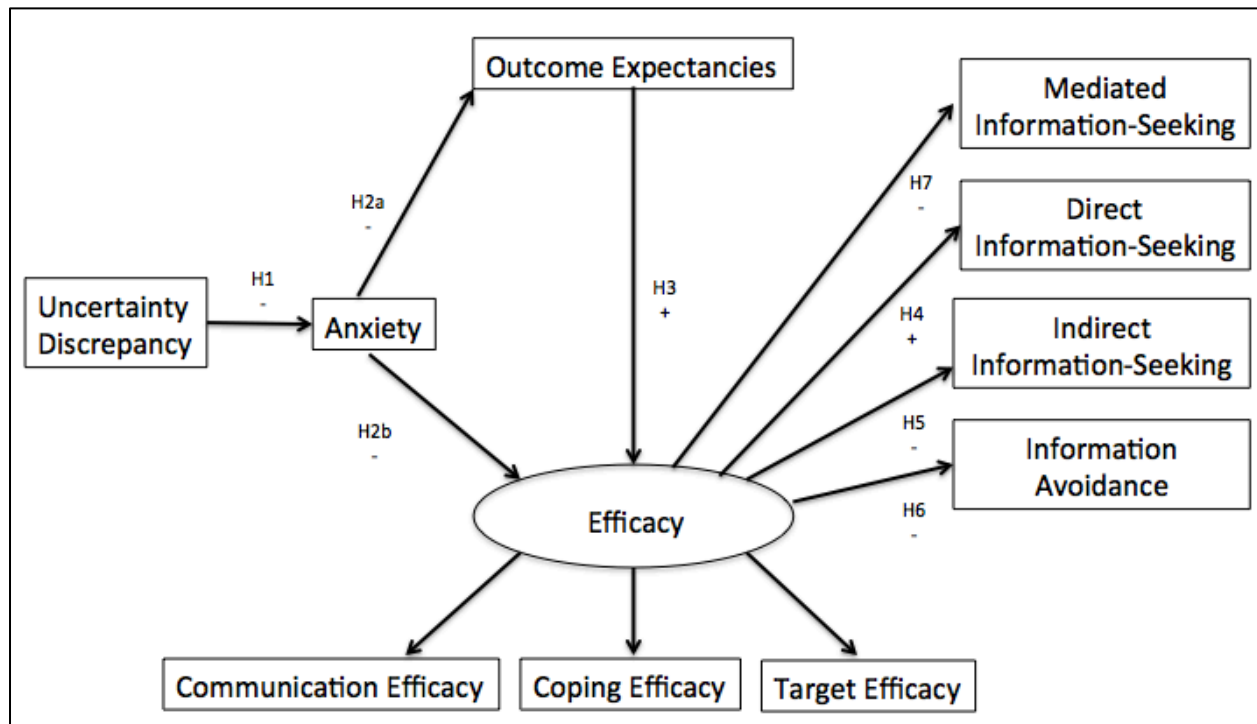


Figure 3. TMIM predicting sexual health information seeking from romantic partners and the media.

While H1-H7 test the original TMIM and an expanded version of the TMIM in relation to sexual health information seeking, the TMIM and subsequent applications of the theory also offer a series of mediation propositions that should be tested as well. This study tests three of these mediation propositions in order to gain a more nuanced understanding of the extent to which some of the key TMIM variables influence (and are influenced by) other variables. The first two mediation hypotheses that are tested were put forth in the introduction of the theory (Afifi & Weiner, 2004). The third mediation hypothesis tested is derived from a recent

application of the TMIM (Wong, 2014). Details about each of these mediation hypotheses are next provided.

The first mediation hypothesis tested is that anxiety partially mediates the relationship between uncertainty discrepancy and efficacy (Afifi & Weiner, 2004). This hypothesis, implied in the TMIM model (see Figure 2), is predicated on the proposition that uncertainty discrepancy “activates” anxiety, which in turn motivates individuals to make assessments (concerning efficacy and outcome expectancies) about their information management options (Afifi & Weiner, 2004, p. 175). In the current study, anxiety is expected to mediate the relationship between individuals’ uncertainty discrepancy about the sexual health of romantic partners and their perceived efficacy to obtain desired sexual health information directly from romantic partners and to cope with related outcomes. This hypothesis, H8, is displayed in Figure 4.

H8: Anxiety mediates the relationship between uncertainty discrepancy and efficacy.

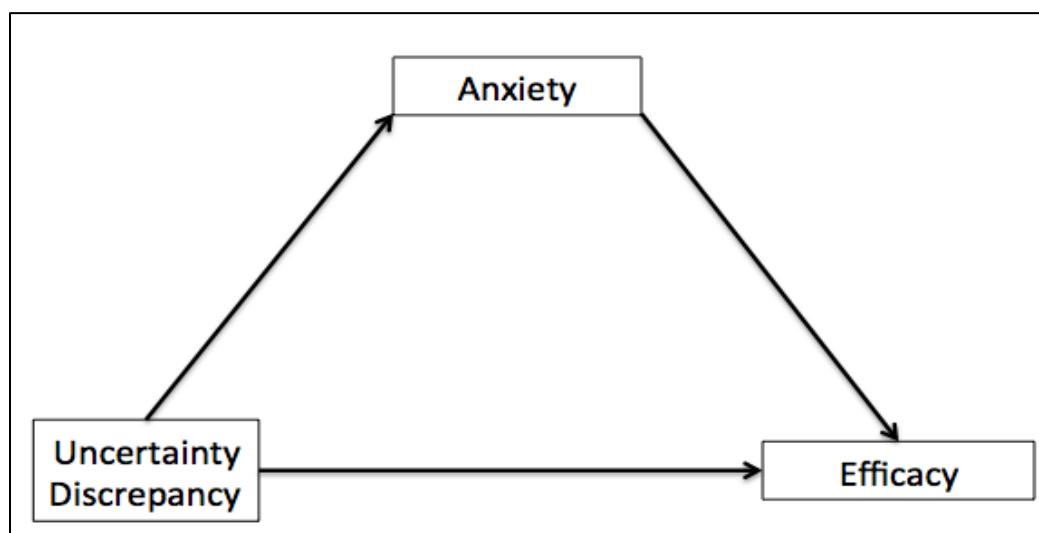


Figure 4. Proposed mediation between uncertainty discrepancy and efficacy by anxiety.

The second mediation hypothesis tested is that anxiety partially mediates the relationship between uncertainty discrepancy and outcome expectancies (Afifi & Weiner, 2004). Specifically, uncertainty discrepancy is expected to produce anxiety, which leads individuals to make

cognitive assessments that influence the information management options they choose to pursue. As with the aforementioned hypothesis, this hypothesis is implied in the TMIM model (see Figure 2). Within the context of the current study, anxiety is expected to mediate the relationship between an individual's uncertainty discrepancy about the sexual health of a romantic partner and the outcomes he or she expects would arise from seeking sexual health information directly from the individual. This hypothesis, H9, is displayed in Figure 5.

H9: Anxiety mediates the relationship between uncertainty discrepancy and outcome expectancies.

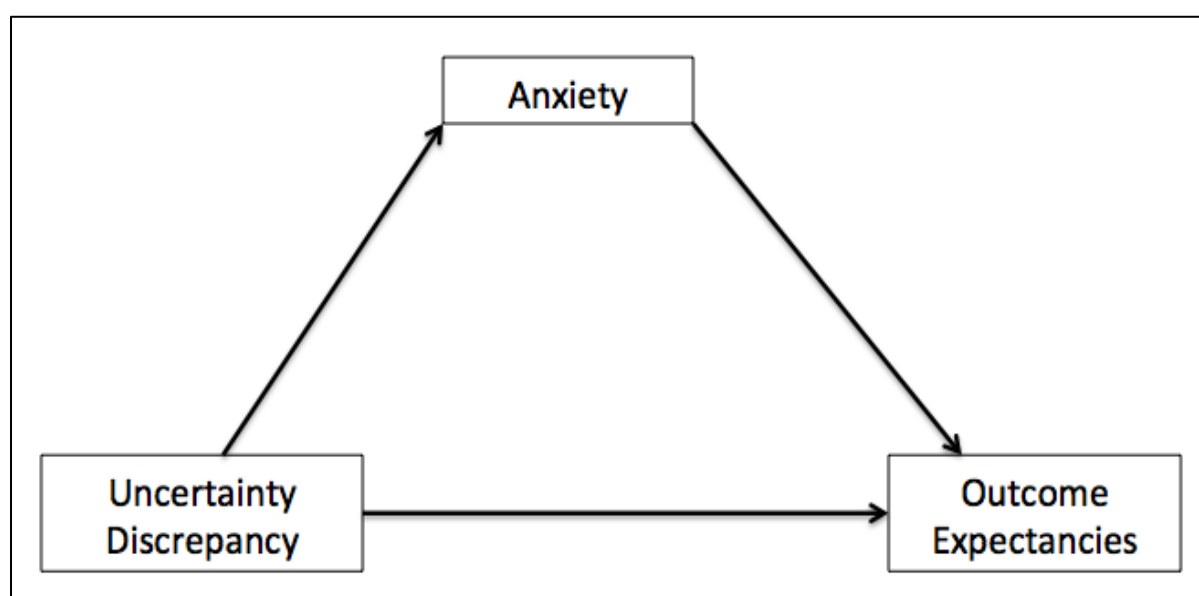


Figure 5. Proposed mediation between uncertainty discrepancy and outcome expectancies by anxiety.

The third and final mediation hypothesis that the current study tests is that anxiety mediates the relationship between uncertainty discrepancy and information seeking intentions. This hypothesis is derived from a recent application of the TMIM (Wong, 2014) that examined young women's intentions to seek information about the HPV vaccine from doctors and parents. It is worth noting that whereas the aforementioned two mediation hypotheses are implied within

the original TMIM, this hypothesis is not implied in the original TMIM model because this hypothesis is concerned with information seeking intentions as opposed to actual information management behaviors, which is the focus of the original TMIM. Wong (2014) suggested, “given the robustness of the TMIM, it is expected that the model will be able to predict information-seeking intentions as well as it is able to predict information-seeking behaviors” (p. 78). This hypothesis is applied to the current study to examine whether anxiety mediates the relationship between uncertainty discrepancy and intentions to seek sexual health information directly from romantic partners (Figure 6).

H10: Anxiety mediates the relationship between uncertainty discrepancy and information seeking intent.

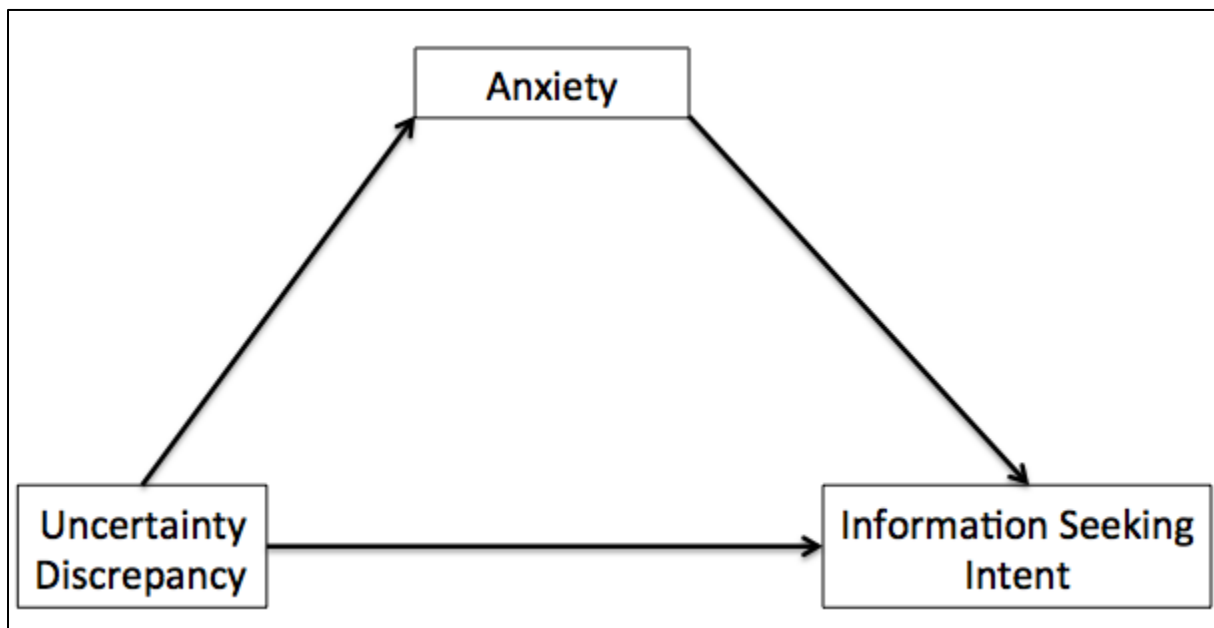


Figure 6. Proposed mediation between uncertainty discrepancy and information seeking intent by anxiety.

Finally, the current study tests one additional hypothesis that could have important implications for future applications of the TMIM. Specifically, scholars have recently suggested that in addition to anxiety stemming from uncertainty discrepancy, other sources of anxiety may

influence information management decisions (Afifi & Morse, 2009; Fowler & Afifi, 2011). For example, Wong (2014) suggests *issue-related anxiety* could influence information management decisions and improve the predictive power of the TMIM. That is, rather than the anxiety stemming from one's awareness that a gap exists between one's perceived and desired uncertainty about an issue, anxiety about the issue in and of itself could contribute to information management decisions. Indeed, Wong (2014) found that young women's anxiety about contracting HPV positively predicted their intention to seek HPV vaccine information from doctors and parents after controlling for the TMIM variables. In regard to the current study, individuals may be motivated to seek sexual health information due to anxiety about contracting an STI as opposed to the anxiety they experience as a result of the awareness that a gap exists between their perceived and desired uncertainty about their partner's sexual health. Thus, the current study hypothesizes anxiety about contracting an STI is positively related to individuals' intent to seek sexual health information directly from partners. The following hypothesis is posed:

H11: Issue-related anxiety predicts information seeking intent.

3 METHOD

The Method section begins with an explanation of the research design and provides details about recruitment, enrollment, participants, and the study procedure. It concludes with a look at how study variables were conceptualized and operationalized at T1 and T2.

3.1 Research Design

The objectives of this project are: (1) to use the TMIM as a framework with which to examine the conditions under which a sample of predominantly young adults seek sexual health information from romantic partners, (2) to test an expansion of the TMIM that examines the

extent to which the model may predict general sexual health information seeking via mediated channels, and (3) to examine whether the TMIM could potentially serve as a framework with which health communication scholars could encourage health information seeking by influencing uncertainty discrepancy and/or emotions (in this case, anxiety).

As will be detailed in the subsequent sections, the aforementioned objectives were accomplished by administering online surveys about sexual health information seeking to a sample of undergraduate students at two points in time. The surveys were separated by about three weeks to allow for measurement to change across time. Both surveys asked participants about issues related to their sexual communication practices, sexual behaviors, and sexual health. Specifically, the T1 survey captured variables in the first two phases of the TMIM (uncertainty discrepancy, anxiety, outcome expectancies, efficacy), whereas the T2 survey captured variables in the final phase of the TMIM by measuring the extent to which participants sought (and avoided) sexual health information from romantic partners and mediated information channels in the period between the two surveys.

3.2 Recruitment

Prior to contacting potential participants, Georgia State University's Institutional Review Board (IRB) approved all proposed data collection methods, study materials, and study parameters (e.g., incentive for participants). Upon receiving IRB approval, the investigator contacted teachers of undergraduate classes in the communication department— in person and via e-mail – to explain the purpose of the study, the extra credit teachers would need to offer participants, and other project considerations. The use of college students as subjects in social science research is common and although their responses often differ from those of non-student subjects (Peterson, 2001), college students serve as an appropriate sample for the proposed study,

which emphasizes understanding young adults' sexual communication practices, sexual health behaviors, and information seeking behaviors and intent.

Fifteen instructors teaching a total of 20 undergraduate communication classes agreed to announce the study in their classes. The in-class announcement about the T1 survey contained information about the research, study parameters, extra credit incentive, and date by which the survey had to be completed. Teachers followed up by sending their students an e-mail that contained the same information they announced in class and included a link to the web survey. The investigator wrote the announcement and e-mail, each of which asked for males and females at least 18 years of age who wanted to partake in a study intended to learn about issues related to student health in exchange for class credit. Participants who were not at least 18 years of age and/or who did not want to partake in the survey(s) were provided with alternate assignments that could be completed for equal extra credit in lieu of the surveys.

Prospective participants were notified that the study consisted of two surveys and that they had to complete the first survey during the allotted time in order to be eligible to complete the second survey. This design was necessary because the study sought to examine, in part, whether the TMIM measures captured at T1 (uncertainty discrepancy, anxiety, outcome expectancies, efficacy) predicted actual information management behaviors that occurred between T1 and T2.

The first survey was available to prospective participants for approximately two weeks. The same recruitment approach was followed for the second survey. Teachers announced to their classes approximately three weeks after the date the first survey closed that the second part of the survey was now open. The second survey was available to prospective participants for about one week.

3.3 Enrollment

Participation in the study was completely voluntary and participants could elect to skip survey questions and/or stop at any point if they desired. Upon clicking the survey link in the e-mail sent from their instructors, prospective participants were directed to an informed consent form (Appendix B) that explained, among other specifics, that they would be asked to provide their name upon completion of the survey for the purpose of allotting extra credit, but that their identities and responses would remain private. After reading the form, participants selected “I agree” or “I disagree.” Those who selected “I disagree” were directed to a page that thanked them for their time. Participants who selected “I agree” were directed to a page that asked them to provide a 5-digit code, which they were asked to enter at T1 and T2 to enable responses to be matched. The 5-digit code was the last three digits of their student identification number and the last two letters of their last name (###AA).

3.4 Participants

There were 547 submitted T1 surveys. After deletion of incomplete questionnaires (< 50% of questions answered) and duplicate responses⁷, a total of 515 completed surveys remained. Because it is unlikely that an individual who does not have a current romantic partner would seek person-specific sexual health information from someone (e.g., a desired romantic partner), only individuals who had a current romantic partner at T1 were eligible for inclusion in analyses. The final sample at T1 for the group of participants with a current romantic partner was 313. The data for the 212 individuals who did not have current romantic partners was not included in any analyses except those reported in Table 1. For comparative purposes, Table 1 displays basic demographic information for the study sample (i.e., participants who had current

⁷ Some individuals learned about the survey in multiple classes and thus took the survey more than once. For individuals who took the survey more than once, their first response was the only one included.

romantic partners) as compared to those individuals excluded from analyses (i.e., participants who did not have a current romantic partner). More detailed demographic information about participants who comprised the current study is provided in the Results section.

There were 435 submitted T2 surveys. However, after eliminating incomplete questionnaires as well as those completed by individuals who did not take the T1 survey, 364 responses remained. A total of 200 participants who reported they had the same romantic partner at T2 as at T1 completed the second survey. Data for the other 164 individuals were excluded.

Table 1. Demographic Information at T1 for Study Sample and Excluded Participants

	Study Sample (Had Current Partner) <i>N</i> = 313	Excluded Participants (No Current Partner) <i>N</i> = 212
Sex		
Male	92 (29.4%)	82 (40.6%)
Female	221 (70.6%)	120 (59.4%)
Age		
Mean	20.9	20.0
Median	19	19
Race		
African-American	163 (52.1%)	87 (43.1%)
American Indian	2 (< 1 %)	2 (1%)
Asian/Pacific Islander	29 (9.3%)	49 (24.3%)
Hispanic/Latino(a)	46 (8.9%)	17 (8.4%)
White	90 (28.8%)	41 (20.3%)
Other	21 (6.7%)	22 (10.9%)

Note. Respondents could select more than one race; thus total > 100%.

3.5 Procedures

Surveys were hosted on Qualtrics.com, an online survey software program that enables individuals to complete surveys at a location of their choosing and to answer anonymously because of several protocols (e.g., not collecting IP addresses), which were explained to participants in the informed consent form [Appendix B]. To ensure all participants received equal compensation for their time, extra credit was pro-rated based on the amount of the study completed. Specifically, instructors awarded 0.5% of the total number of points in their course to

students who completed only the first survey (or alternate assignment) and another 0.5% of the total number of points in their course to students who also completed the second survey (or alternate assignment). Both surveys featured a hyperlink that appeared after completion, which took students to a new page at which they entered their full name, course instructor, and class. Because this information was entered on a different survey, participant responses remained independent of their identities. In the case that students were informed about the study in more than one class, they were instructed they could only take the two parts of the survey only once and could receive extra credit in the class of their choosing.

At the outset of the study, participants were randomly assigned to an experimental group or a control group. The experimental group read a print narrative about sexual health communication (Appendix A). The narrative intended to influence uncertainty discrepancy by increasing participants' perceived uncertainty and/or by reducing their desired uncertainty. The control condition read a narrative of comparable length and structure about an unrelated topic (nutrition). After exposure to the stimulus, all participants answered the same questions. Specifically, T1 measures captured (a) the TMIM constructs in the first and second phases of the model (i.e., uncertainty discrepancy, anxiety, efficacy, outcome expectancies), (b) demographics, and (c) sexual health perceptions and practices [Appendix C].

About three weeks after completing the T1 survey, participants were asked to complete a second survey that measured the variables in the third and final phase of the TMIM model (i.e., information management strategies). Specifically, participants who were still romantically involved with their partner at T2 reported their information management strategies *since the first survey* [Appendix D]. In addition, participants reported about the frequency with which they searched for sexual health information from mediated information sources *since the first survey*.

Stimulus Material. At the outset of the study, all participants were randomly assigned to an experimental group or control group. Participants in the experimental group read a brief narrative about sexual health communication. Those in the control group read a narrative unrelated to the study topic [Appendix A].

Introduction. After exposure to the aforementioned stimulus, all participants read the following instructions.

“Think of a current romantic partner. If you do not have a current romantic partner, think of a current sexual non-romantic partner, a former romantic partner, of a friend with whom you would like to have a romantic relationship. The following questions will ask you to report on various details regarding your current relationship, past relationship, or desired relationship with that individual.”

After reading the introduction, participants chose one of four options that indicated the status that most closely resembled the individual about whom they would answer questions: “(1) an individual you are dating with whom you have a sexual relationship, (2) an individual you are not dating with whom you have a sexual relationship, (3) an individual with whom you had a sexual relationship in the past, or (4) a friend or acquaintance with whom you would like to have a sexual relationship.” As noted, this study is exclusively focused on individuals who fell into one of the first two categories.

3.6 Survey Measures

The variables measured are presented in four sections. The variables in the first three sections were measured at T1 and the variables measured in the fourth section was measured at T2. Section 1 includes the variables that comprise the first two phases of the TMIM (uncertainty discrepancy, anxiety, outcome expectancies, efficacy). Section 2 includes demographic variables

and a variable that measured the extent to which participants related to the narrative they were randomly assigned to read. Section 3 includes sexual health perceptions and practices. Section 4 consists of the variables in the TMIM's third and final phase (direct information seeking, indirect information seeking, information avoidance) as well as a measure of sexual health information seeking via mediated information channels. Scale reliability statistics are provided for the survey at which the variables were measured.

3.6.1 *TMIM Variables Measured at T1*

Uncertainty discrepancy about partner's sexual health. Consistent with many applications of the TMIM (e.g., Afifi & Fowler, 2009; Dillow & LaBelle, 2014; Rauscher & Hesse, 2014), this study used a two-item measure to capture uncertainty discrepancy about the sexual health of one's partner. Specifically, the difference between participants' responses to the following two items was calculated: "How much information do you know about your partner's sexual health?" and "How much information do you want to know about your partner's sexual health?" Both items were measured on 7-point scales [1 = *nothing*, 7 = *everything*]. As with previous applications of the TMIM, the former item was subtracted from the latter item and thus scores had the potential to range from -6 to +6. Higher scores reflected greater uncertainty discrepancy about a partner's sexual health. Negative scores reflected a desire for less knowledge about the sexual health of one's partner than one possesses, whereas positive scores indicated a desire for more information about a partner's sexual health than one perceived themselves to currently possess ($M = +0.62$, $SD = 1.52$). [Items 1-2, Section E, Appendix C].

Anxiety about uncertainty discrepancy. Consistent with Afifi and Weiner (2006), a five-item measure assessed participants' anxiety about their level of uncertainty discrepancy (e.g., "The size of the similarity/difference between how much I know and how much I'd like to

know about my partner's sexual health is _____ [1 = *extremely comforting*, 5 = *anxiety-producing*]). Scale reliability was good (alpha = .85) [Items 1-5, Section G, Appendix C].

Outcome expectancies. Consistent with Rosenberg (2014), three items assessed the outcomes expected from a direct information search (e.g., "Talking to my partner directly about his or her STI status would produce _____ [1 = *a lot more negatives than positives*, 7 = *a lot more positives than negatives*]"). Scale reliability was good (alpha = .85). [Items 1-3, Section K, Appendix C].

Efficacy. Consistent with the Afifi and Weiner (2006), three efficacy components were measured. All items were rated on a 7-point scale [1 = *strongly disagree*, 7 = *strongly agree*]. *Communication efficacy* was measured with four items (e.g., "I feel like I have the ability to approach my partner to ask about his/her sexual health"). Scale reliability was good (alpha = .84). *Coping efficacy* was measured with five items (e.g., "I feel I can manage discovering that my partner has an STI"). Scale reliability was good (alpha = .81). *Target efficacy* consisted of six items that reflected two dimensions; three items measured target ability (e.g., "I feel that my partner could provide me with information about his her sexual health"), and three items measured target honesty (e.g., "I feel that my partner would be completely honest about his/her sexual health"). The six-item target efficacy scale was reliable (alpha = .81). The current study combined all three efficacy components to create a single efficacy construct, which is consistent with some applications of the TMIM (e.g., Rauscher & Hesse, 2014). Reliability for the 15-item scale was acceptable (alpha = .73). All analyses were performed with the single latent efficacy construct. [Items 1-15, Section L, Appendix C].

3.6.2 *Demographics and Narrative Identification Measured at T1*

Demographics. Participants self-reported a variety of demographic information including gender, age, ethnicity, religiosity, and parents' highest level of formal education, residence status (e.g., on-campus, off-campus). Gender and age served as control variables in one analysis [Items 1-10, Section A, Appendix C].

Narrative identification. One question asked participants whether they related to the narrative ("In the story I just read, I can relate to the things the main character is going through"). The item was measured with a 7-point scale [1 = *strongly disagree* to 7 = *strongly agree*]. [Item 3, Section B, Appendix C].

3.6.3 *Sexual Health Perceptions and Practices Measured at T1*

A series of measures captured participants' sexual health perceptions and practices. This served several purposes. First, because the TMIM is applicable for issues perceived as important (Afifi & Weiner, 2004), the current study needed to establish that knowledge about the sexual health of one's romantic partner met this criterion. Second, the aforementioned TMIM variables measured outcome expectancies and efficacy in regard to the sexual health of one's partner, but did not ask about specific sexual health issues (other than STIs). Thus, to supplement the analysis, a measure was included that asked participants about their willingness to ask romantic partners about specific sexual health issues (e.g., preventing pregnancy). Finally, additional measures such as whether participants were sexually active with romantic partners and if so, the frequency with which they practice safe sex were captured to help contextualize results.

Issue importance. A one-item measure from Fowler and Afifi (2011) was used to capture issue importance. Participants indicated how much they agree with the following statement: "It is important that I know about my partner's sexual health such as their STI

history.” The item was anchored with a 7-point scale [1 = *strongly disagree*, 7 = *strongly agree*]. Overall, participants perceived knowing about their partners’ sexual health to be important ($M = 6.66$, $SD = .83$) [Item 1, Section C, Appendix C].

Issue-related anxiety. Two items from Wong (2014), which measured participants’ anxiety about contracting HPV, were used to measure participants’ anxiety about contracting an STI from their partner (“How concerned are you that you will become infected with an STI if you do not ask your partner about his or her sexual health?” and “How worried are you that you will become infected with an STI if you do not ask your partner about his or her sexual health?”). Items were anchored on a 5-point scale [1 = *not at all concerned*, 5 = *very concerned*]. The items were significantly correlated at the .01 level ($r = .80$). [Items 1-2, Section D, Appendix C].

Sexual history. Participants reported whether they are currently sexually active with their partner [yes/no] and, if so, “how often [they] practice safe sex (e.g., use condoms, dental dams) with [their partner]?” A 7-point scale was used [1 = *never*, 7 = *always*].

Partner’s sexual health. Participants reported whether they believe their partner has an STI [yes/no] and how certain they are about their response. A 7-point scale was used to measure certainty [1 = *not very certain*, 7 = *very certain*].

Information previously sought from partner. Three items captured the extent to which individuals had previously sought information from their romantic partner about his/her sexual health (e.g., “How many questions have you asked your partner regarding his/her sexual past?”). Items were anchored on a 7-point scale [1 = *no questions*, 7 = *a lot of questions*]. This measure was developed by Afifi and Weiner (2006). The scale reliability was very good ($\alpha = .91$) [Items 1-3, Section M, Appendix C].

Information seeking intent from partner. Four items captured individuals' intent to seek information directly from their partner in the next three weeks (e.g., "How likely is it that you ask your partner about his or her sexual health in the next three weeks?"). Items were anchored with a 5-point scale [1 = *very unlikely*, 5 = *very likely*]. This scale was adapted from Wong (2014), which measured females' intent to seek HPV information from parents and doctors in the next six months. The scale reliability was very good ($\alpha = .90$) [Items 1-4, Section N, Appendix C].

Sexual Assertiveness for Communication of HIV Risk-Related Information. A five-item measure asked participants how likely they would be to ask partners about their sexual health and history (e.g., "I would ask if I want to know if my partner ever had an HIV test."). The scale was developed by Quina, Harlow, Morokoff, Burkholder, and Deiter (2000) who examined females' sexual communication in relationships. Items were measured on a 5-point scale [1 = *never*, 5 = *always*]. The scale reliability was very good ($\alpha = .94$) [Items 1-5, Section P, Appendix C].

STI testing and diagnoses history. Participants reported when they were most recently tested for STIs from five options [e.g., < 1 month ago, 1-6 months ago, 6-12 months, 1+ year, never]. Participants also reported whether they have ever received a diagnosis for six of the most common STIs (e.g., herpes, human papillomavirus). They selected from three options [yes, no, unsure] [Items 1-8, Section R, Appendix C].

3.6.4 *TMIM Variables Measured at T2*

Direct information seeking. Three items measured the extent to which participants who had the same romantic partner at T1 and T2 directly sought information from their partners since the first survey ("I asked my partner what he or she thought about the issue"). Items were

measured on a 7-point scale [1 = *completely false*, 7 = *completely true*]. This scale was based on measures from Afifi and Afifi (2009a) and from Rosenberg (2014). The scale reliability was very good (alpha = .97) [Items 1-3, Section A, Appendix D].

Indirect information seeking. Three items measured the extent to which participants who had the same romantic partner at T1 and T2 did nothing to directly learn about the sexual health of their partners since the first survey (“I just sat back and saw what happened with the issue”). Items were measured on a 7-point scale [1 = *completely false*, 7 = *completely true*]. This scale was based on measures from Rosenberg (2014). The 3-item scale had low reliability (alpha = .46) and thus the item that was most problematic was dropped from the scale (an item intended to be reverse coded; “I did something to learn about my partner’s sexual health and history”). This improved reliability, but scale reliability remained questionable (alpha = .61) [Items 1-2, Section B, Appendix D].

Information avoidance. Three items measured the extent to which participants who had the same partner at T1 and T2 avoided information about their partner’s sexual health since the first survey (“I went out of my way to avoid information about the issue”). Items were measured on a 7-point scale [1 = *completely false*, 7 = *completely true*]. This scale was based on measures from Rosenberg (2014). The scale reliability was very good (alpha = .92) [Items 1-3, Section B, Appendix D].

Sexual health information seeking from mediated channels. Participants reported the frequency with which they sought information about STIs or safe sex from five different mediated information channels since the first survey (e.g., “Since the first survey, how often did you try to find information about STIs or safe sex from the Internet?”). Responses were made on

a 4-point scale [1 = *never*, 4 = *often*]. Scale reliability was good ($\alpha = .85$) [Items 1-5, Section D, Appendix D].

3.7 Data Analyses

Survey data were downloaded from Qualtrics and converted into SPSS 19 for analyses. The hypotheses and research question were addressed with a series of statistical tests most appropriate for the particular analysis needed. The analyses for this study proceeded in five stages. In Stage 1, preliminary analyses were conducted to obtain descriptive information such as demographics and participants' sexual histories, perceptions, and behaviors. In Stage 2, analyses examined whether the sexual health narrative affected uncertainty discrepancy and anxiety. Specifically, independent t-tests examined the extent to which uncertainty discrepancy and anxiety varied between the experimental and control groups (RQ1). In Stage 3, structural equation modeling was used to test two models: (1) the original TMIM model (displayed in Figure 2; H1-H6), and (2) a TMIM model that incorporates sexual health information seeking via mediated channels (displayed in Figure 3; H1-H7). In Stage 4, mediation analyses were performed using Baron and Kenny's recommendations for mediation testing (1986) and bootstrapping procedures (Preacher & Hayes, 2004) to test the mechanisms by which certain TMIM variables influence other variables (H8-H10). Finally, in Stage 5, a regression analysis tested whether information seeking intent could be predicted from issue-related anxiety (H11).

Missing Data Analysis, performed in SPSS, found no item to have more than 3% missing cases. Traditional approaches to replacing missing values (e.g., ipsative imputation, single imputation by unconditional means) are discouraged because they introduce bias and although newer strategies (e.g., multiple imputation) offer improved alternatives for reasons such as their ability to provide standard errors that are unbiased (Acock, 2005), the decision was made not to

replace missing values in the current study. This was due, in part, to their minimal presence, a desire to maintain the integrity of the data, the inherent risks of estimating values for one- or two-item measures, and because the size of the sample assured analyses would be performed with a relatively large number of participants. Thus, if a participant had missing values for an item, he or she was excluded from analyses involving that particular item.

Table 2 provides a review of the hypotheses and research question.

Table 2. Research Question and Hypotheses

RQ1: Do individuals who read a sexual health narrative experience higher uncertainty discrepancy and anxiety about the sexual health of romantic partners as compared with individuals who read a narrative about an unrelated topic?¹

H1: Uncertainty discrepancy is positively associated with anxiety.²

H2a: Anxiety is negatively associated with outcome expectancies.²

H2b: Anxiety is negatively associated with efficacy.²

H3: Outcome expectancies is positively associated with efficacy.²

H4: Efficacy is positively associated with direct information seeking.²

H5: Efficacy is negatively associated with indirect information seeking.²

H6: Efficacy is negatively associated with information avoidance.²

H7: Efficacy is negatively associated with sexual health information seeking from mediated sources.²

H8: Anxiety mediates the relationship between uncertainty discrepancy and efficacy.¹

H9: Anxiety mediates the relationship between uncertainty discrepancy and outcome expectancies.¹

H10: Anxiety mediates the relationship between uncertainty discrepancy and information seeking intent.¹

H11: Issue-related anxiety predicts information seeking intent.¹

¹Analyses includes all individuals with partner at T1.

²Analyses includes only individuals with partner at T1 and T2.

4 RESULTS

4.1 Demographic Analyses

The study sample consisted solely of individuals who had a current romantic partner at T1 ($N = 313$) and the same romantic partner at T2 ($N = 200$). As reported at T1, most participants were females ($N = 221$, 70.6%) and participants' age ranged from 18-50 ($M = 20.93$, $SD = 4.64$) with a median age of 19. Table 3 displays demographic information for participants.⁸

⁸ Some tables have columns labeled T1 Sample and T2 Sample. The column labeled T1 Sample presents data for the sample as collected at T1. The column labeled T2 Sample presents data collected at T1 for the participants who completed the T2 survey. In other words, participants who completed the T2 survey were not asked to report on these variables again at T2.

Table 3. Demographic Characteristics of Participants

Demographics	T1 Sample <i>N</i> = 313	T2 Sample <i>N</i> = 200
Sex		
Male	92 (29.4%)	61 (30.5%)
Female	221 (70.6%)	139 (69.5%)
Age		
Mean	20.9	20.6
Median	19	19
Range	18-50	18-48
Relationship to Partner		
Heterosexual	286 (91.4%)	184 (92.0%)
Homosexual	27 (8.6%)	16 (8.0%)
Race/Ethnicity		
African-American	163 (52.1%)	100 (50.0%)
American Indian	2 (< 1%)	1 (< 1%)
Asian/Pacific Islander	29 (9.3%)	26 (13.0%)
Hispanic/Latino(a)	46 (8.9%)	18 (9.0%)
White	90 (28.8%)	56 (28.0%)
Other	21 (6.7%)	14 (7.0%)
Mother's Education		
Some high school	20 (6.4%)	16 (8.0%)
High school graduate	48 (15.3%)	27 (13.5%)
Some college	96 (30.7%)	62 (31.0%)
College graduate	95 (30.4%)	63 (31.5%)
Advanced college degree	44 (14.1%)	28 (14.0%)
Don't know	8 (2.6%)	3 (1.5%)
Father's Education		
Some high school	27 (8.6%)	14 (7.0%)
High school graduate	75 (24.0%)	42 (21.0%)
Some college	61 (19.5%)	37 (18.5%)
College graduate	86 (27.5%)	63 (31.5%)
Advanced college degree	42 (13.4%)	32 (16.0%)
Don't know	22 (7.0%)	12 (6.0%)
Residence		
On-campus	117 (37.4%)	74 (37.0%)
Off-campus alone or w/ roommates	100 (31.9%)	60 (30.0%)
Off-campus with parents	85 (27.2%)	62 (31.0%)
Off-campus (other)	11 (3.5%)	4 (2.0%)
Religiosity		
<i>M</i> (<i>SD</i>)	2.48 (.91)	2.48 (.93)

Note. Respondents could select more than one race; thus total > 100%.

4.2 Sexual Health Perceptions and Practices

The TMIM is applicable for issues that individuals perceive as important (Afifi & Weiner, 2006). Most participants perceived knowing about the sexual health and history of romantic partners to be an important issue ($M = 6.66$, $SD = .83$). This is a meaningful starting point to this study's larger examination of sexual health information seeking behaviors, in part, because this finding suggests that although psychological barriers may prevent individuals from attempting to engage romantic partners in discussions about their sexual health and history, there exists a recognition that this information is of value.

As part of the T1 survey, participants reported on their sexual practices with their romantic partners and their perceptions of their romantic partner's sexual health. Most participants ($N = 230$; 73.5%) were sexually active with their romantic partner and about one-fourth of participants who were sexually active with their partner ($N = 61$; 26.5%) reported they always practiced safe sex (Table 4). Nearly all participants ($N = 302$; 96.5%) believed their romantic partner did not have an STI and most participants perceived themselves to be extremely certain about their knowledge of their partner's STI status ($M = 6.30$, $SD = 1.64$).

Table 4. Participants' Sexual Perceptions and Practices

	T1 Sample $n = 313$	T2 Sample $n = 200$
Sexually Active with Partner		
Yes	230 (73.5%)	138 (69.0%)
No	82 (26.2%)	62 (31.0%)
Safe Sex Frequency with Partner*		
Never	42 (18.3%)	25 (18.1%)
Irregularly	122 (53.1%)	76 (55.2%)
Always (100% of time)	61 (26.5%)	35 (25.4%)
Believe Partner has an STI?		
Yes	10 (3.2%)	6 (3.0%)
No	302 (96.5%)	194 (97.0%)

Note. *Only answered by participants currently sexually active with their partner.

Because an individual's knowledge about a romantic partner's STI status is particularly relevant for sexually active individuals, an independent t-test examined whether participants' certainty about their knowledge of their partner's STI status varied based on whether they are sexually active with their partner. The analysis found a statistically significant difference such that individuals sexually active with their romantic partners were, on average, more certain about their knowledge of their partner's STI status ($M = 6.41$, $SD = 1.29$), as compared to individuals who were not sexually active with their partner ($M = 6.03$, $SD = 1.42$), $t(301) = 2.187$, $p < .05$.

Although participants largely believed their romantic partners to not have STIs, sexually active young adults are not always screened for STIs and research suggests the prevalence of STIs among this population may be underreported. Thus, participants were asked to indicate when they were most recently tested for any STIs (if ever) and whether they have been diagnosed with one or more of six of the most common STIs. Table 5 displays this information. Results suggests about one-third of participants have never had a test for STIs ($N = 121$, 38.7%). Of the 230 participants sexually active with their romantic partner, 75 (32.6%) had never had an STI test.

Table 5. Participants' STI Screening and Diagnoses History

STI History	T1 Sample $N = 313$	T2 Sample $N = 200$
Last Tested		
< 1 month	28 (8.9%)	17 (8.5%)
1-6 months	89 (28.4%)	48 (24.0%)
6-12 months	39 (12.5%)	20 (10.0%)
12 + months	36 (11.5%)	29 (14.5%)
Never	121 (38.7%)	86 (43.0%)
Self-reported diagnoses		
Chlamydia	20 (6.4%)	14 (7.0%)
Gonorrhea	6 (1.9%)	2 (1.0%)
Herpes	8 (2.6%)	5 (2.5%)
Human papillomavirus	12 (3.8%)	7 (3.5%)
Human immunodeficiency virus	2 (< 1%)	1 (< 1%)
Syphilis	2 (< 1%)	1 (< 1%)

Because communication is central to the TMIM, participants were asked to provide information about their sexual communication history and intentions within the context of their relationship with their romantic partner. In regard to sexual communication history, participants detailed the extent to which they discussed five sexual health topics – preventing pregnancy, using condoms, preventing AIDS, preventing STIs, partner’s sexual history – with their partner in the past six months. For individuals who reported they had a partner at T1, this information is displayed in Table 6.

Table 6. Frequency of Discussion about Sexual Health Topics with Romantic Partner

	<i>M</i>	<i>SD</i>	Not Applicable
Preventing Pregnancy	2.92	1.12	42 (13.4%)
Using Condoms	2.50	1.21	40 (12.8%)
Preventing HIV/AIDS	2.20	1.25	39 (12.5%)
Preventing STIs	2.30	1.20	42 (13.4%)
Partner’s Sexual History	2.66	1.11	36 (11.5%)

N = 311-313.

Means and standard deviations were calculated to examine the extent to which participants have sought sexual health information directly from partners throughout their romantic history with the individual, intentions to seek sexual health information from partners, and to capture scores on the assertive sexual communication for information scale (Quina et al., 2000). The assertive sexual communication for information scale measures individuals’ assertiveness to ask partners about issues such as whether they have ever had an STI test and the AIDS risk of their previous partners. Table 7 presents this information as measured at T1.

Table 7. Means and Standard Deviations for Sexual Health Information Seeking Variables

Variable	<i>M</i>	<i>SD</i>	α
Information directly sought from partner	4.70	1.87	.91
Intention to seek information directly from partner	3.51	1.35	.90
Assertiveness to seek information directly from partners	4.02	1.14	.94

N = 309-313.

In regard to the TMIM, participants at T1 reported on their current and desired uncertainty about the sexual health of their romantic partners, the anxiety produced by this uncertainty discrepancy, the expectations they had for seeking sexual health information from partners, and their efficacy to obtain sexual health information from partners and to cope with related outcomes. Participants at T2 answered questions about the information management strategies they adopted between the two surveys. As displayed in Table 8, these results show that among other findings, participants had, on average, relatively positive outcome expectancies for seeking sexual health information from romantic partners and believed themselves to have the necessary communication skills to ask romantic partners about their sexual health.

Table 8. TMIM Variable Means and Cronbach's Alphas

Variable	T1 Sample			T2 Sample		
	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α
Uncertainty Discrepancy (-6, +6)	.62	1.52		.63	1.55	
Anxiety (averaged, 1-5)	2.46	1.00	.85	2.43	.97	.83
Outcome Expectancies (averaged, 1-7)	4.96	1.48	.85	4.97	1.42	.85
Efficacy (averaged, 1-7)						
Communication efficacy	5.69	1.27	.84	5.60	1.22	.82
Coping efficacy	3.92	1.49	.81	3.81	1.55	.84
Target honesty	5.36	1.38	.71	5.36	1.30	.71
Target ability	5.18	1.34	.72	5.11	1.30	.72
Information Management (averaged, 1-7)						
Direct information seeking §				4.57	2.16	.97
Indirect information seeking §				3.64	1.63	.61
Information avoidance §				2.44	1.67	.92

N at T1 = 306-313; *N* at T2 = 196-200.

Note. § Only answered by participants at T2

Finally, Table 9 provides a correlation matrix for select demographics, the aforementioned sexual health information seeking variables, and the TMIM variables that appear in subsequent analyses.

Table 9. Correlations among Study Variables

	1	2	3	4	5	6	7	8	9
1. Sex	--								
2. Age	.02	--							
3. Issue Importance	.20***	-.08	--						
4. STI-related Anxiety	.18**	-.02	.09	--					
5. Information Ever Sought	.18**	.19**	.13*	.22***	--				
6. Intent to Seek Information	.22***	.01	.13*	.20**	.34***	--			
7. Assertiveness to Seek Information	.28***	.08	.37***	.15*	.41***	.32***	--		
8. Uncertainty Discrepancy	.19**	-.11	.12*	.14*	-.24***	.11	-.04	--	
9. Anxiety	-.03	-.04	.15**	.21***	-.21***	.24***	-.14*	.36***	--
10. Outcome Expectancies	.20***	-.08	.19**	.15**	.37***	.13*	.32***	-.06	-.18**
11. Communication Efficacy	.19**	.09	.32***	-.02	.36**	.05	.33***	-.14*	-.46***
12. Coping Efficacy	-.11	.21***	-.08	-.05	.13*	.03	-.01	-.01	-.08
13. Target Efficacy	.12*	.12*	.23***	-.07	.34***	-.09	.30***	-.22***	-.55***
14. Direct Information Seeking	.13	-.04	.15**	.23**	.31***	.42***	.33***	-.05	.07
15. Indirect Information Seeking	-.02	.11	.01	-.01	.03	.08	.05	-.02	.07
16. Information Avoidance	-.19**	-.05	-.13	-.08	-.21**	-.06	-.24**	-.06	.15*
17. Mediated Information Seeking	-.04	-.07	-.03	.15*	.19**	.40***	.18**	-.02	.18*

	10	11	12	13	14	15	16	17
10: Outcome Expectancies	--							
11. Communication Efficacy	.47***	--						
12. Coping Efficacy	.05	.08	--					
13. Target Efficacy	.42***	.73**	.01	--				
14. Direct Information Seeking	.24**	.11	-.02	.12	--			
15. Indirect Information Seeking	.10	-.11	.17*	-.11*	.16**	--		
16. Information Avoidance	.02	-.56*	.05	.37***	-.02	.37***	--	
17. Mediated Information Seeking	.12	-.16*	.04	-.21***	.36***	-.02	.31***	--

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

Note. Variables 1-13 measured at T1 and include all T1 participants ($N = 303$ -313). Variables 14-17 measured at T2 and only include participants who completed T2 ($N = 193$ -200).

In addition to measuring the aforementioned variables that comprise the TMIM, the current study sought to influence uncertainty discrepancy and anxiety so as to examine the potential for health communication professionals to use the TMIM as a framework with which to prompt health information seeking. The results of this attempt are next discussed.

4.3 Effect of Narrative on Uncertainty Discrepancy and Anxiety (RQ1)

At the outset of the T1 survey, participants were randomly assigned to one of two groups: (1) an experimental group who read a sexual health narrative intended to increase uncertainty discrepancy and anxiety about the sexual health of a romantic partner, or (2) a control group who read a narrative about a topic unrelated to sexual health. An independent t-test examined the extent to which uncertainty discrepancy varied depending upon whether participants read the sexual health narrative or the unrelated narrative (Table 10). The analysis did not find a

statistically significant difference in uncertainty discrepancy between the group who read the sexual health narrative ($n = 156$, $M = 0.74$, $SD = 1.52$) and the control group ($n = 156$, $M = .50$, $SD = 1.49$), $t(267) = 1.42$, $p > .05$. Analyses were performed to examine whether the narrative influenced anxiety (Table 10). Importantly, individuals may be more motivated to address uncertainty discrepancy-related emotions (in this case, anxiety) than actual uncertainty discrepancy (Afifi & Weiner, 2004). The analysis failed to find a statistically significant difference in anxiety between the group who read the sexual health narrative ($n = 156$, $M = 2.55$, $SD = 1.06$) and the control group ($n = 156$, $M = 2.37$, $SD = 0.95$), $t(265) = 1.51$, $p > .05$. This suggests that the sexual narrative did not influence participants' uncertainty discrepancy or anxiety in regard to their knowledge of the sexual health of their romantic partners.

Table 10. Effect of Sexual Health Narrative on Uncertainty Discrepancy and Anxiety

	Sexual Health $n = 156$		Control Group $n = 156$		<i>t</i> -test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Uncertainty Discrepancy	.74	1.52	.50	1.49	1.42
Anxiety	2.55	1.06	2.37	0.95	1.51

Because the sexual health narrative sought to portray a scenario to which participants could relate, an independent t-test examined the extent to which uncertainty discrepancy and anxiety varied between individuals who read the sexual health narrative and related to the main character and individuals who read the sexual health narrative and did not relate to the main character.⁹ As displayed in Table 11, an independent t-test found individuals who read the sexual health narrative and related to the main character experienced higher uncertainty discrepancy ($n = 69$, $M = 1.19$, $SD = 1.89$), on average, than individuals who read the sexual health narrative and did not relate to the main character ($n = 87$, $M = .38$, $SD = 1.05$), $t(100.54) = 3.190$, $p < .01$. The

⁹ Prior to running the test, it was found there was not homogeneity of variances for the uncertainty discrepancy variable between the group who related to the narrative and the group who did not relate to the narrative. As such, the Satterthwaite approximation was used to account for the two different sample variances.

same held true for anxiety, as an independent t-test found individuals who read the sexual health narrative and related to the main character experienced higher anxiety ($n = 68$, $M = 2.74$, $SD = 1.11$), on average, than individuals who read the sexual health narrative and did not relate to the main character ($n = 85$, $M = 2.39$, $SD = 1.10$), $t(151) = 2.01$, $p < .05$.

Table 11. Effect of Sexual Health Narrative on Uncertainty Discrepancy and Anxiety based on Ability to Relate to Main Character

	Related		Did Not Relate		<i>t</i> -test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Uncertainty Discrepancy	1.19	1.89	.38	1.05	3.19**
Anxiety	2.74	1.11	2.39	1.00	2.01*

n for Related: 68-69; *n* for Did Not Relate: 85-87.

Note. For Uncertainty Discrepancy, Satterthwaite approximation used due to unequal variances. * $p < .05$, ** $p < .01$.

Collectively, these results suggest the sexual health narrative did not affect uncertainty discrepancy or anxiety for the group who read the sexual health narrative, as compared to the control group. However, participants who read the sexual health narrative and related to the main character experienced higher uncertainty discrepancy and anxiety, on average, than did participants who read the sexual narrative and did not relate to the main character. When considered concurrently, these findings suggest that health communication materials may have the potential to influence uncertainty discrepancy and anxiety when the content is relatable.

The attempt to influence uncertainty discrepancy and anxiety was motivated by a desire to examine whether health communication professionals could potentially use the TMIM as a framework with which to prompt health information seeking. Of course, this would only be useful insofar as the TMIM is able to explain and predict information management decisions. Thus, this study sought to examine the extent to which the full TMIM model could predict individuals' information management decisions within the context of seeking (and avoiding)

sexual health information from romantic partners. The next section reviews the hypotheses that comprise the full TMIM model and details how they were tested and evaluated.

4.4 Preview of TMIM Model Testing

The TMIM was tested to examine the extent to which the model could predict how individuals manage uncertainty about the sexual health of romantic partners (H1-H6) and whether the model could predict sexual health information seeking from mediated information channels (H7). First, the original TMIM was tested. This model predicted uncertainty discrepancy about the sexual health of one's romantic partner would be positively related to anxiety about the gap between perceived and desired uncertainty (H1). Anxiety was expected to be negatively related to outcome expectancies of asking partners about their sexual health (H2a) as well as to efficacy to obtain sexual health information from romantic partners and cope with related outcomes (H2b). Outcome expectancies of seeking sexual health from partners was expected to be positively related to efficacy to obtain information and cope with related outcomes (H3). In regard to efficacy's relationship to the three interpersonal information management strategies, efficacy was expected to be positively related to direct information seeking (H4) and to be negatively related to indirect information seeking (H5) and to information avoidance (H6). Finally, a second model tested each of the aforementioned hypotheses and added an additional pathway that predicted efficacy would be negatively related to mediated information seeking (H7).

Hypotheses 1-7 were tested for the sample who completed both surveys and had the same romantic partner at T1 as at T2 ($N = 200$). Structural equation modeling (SEM) was performed with MPlus, a latent variable modeling program. SEM tests all components of a model simultaneously and models measurement error to examine whether the fit between the

hypothesized model and sample data is evidence the model is consistent with the theory (Cohen, Cohen, West, & Aiken, 2003). This approach allows researchers to test the extent to which variables define hypothesized constructs and the relationships amongst them (Schumacker & Lomax, 2004). The ensuing sections discuss the two models tested, provide participants' scores on the specific variables of interest, and explain how the predictive power of the models was evaluated.

4.4.1 Sample size, model estimation, and model descriptions

SEM requires relatively large sample sizes, as small sample sizes may impact the reliability of parameter estimates, the fit of the model, and statistical power (Shah & Goldstein, 2006). Recommendations for minimal sample size often range from 100-200 (Chou & Bentler, 1995; Holbert & Stephenson, 2002; Weston & Gore, 2006) and the "typical" sample size in SEM studies is about 200 cases (Kline, 2010). However, it has been suggested that "sample size perhaps shouldn't be thought of in an absolute sense. Rather, features of a model, which the researcher is testing, should moderate this figure (Jackson, 2003, p. 139). Thus, to identify a minimum sample size, some scholars choose to compare the ratio of cases (N) to the number of model parameters that need statistical estimates (q), which is known as the $N:q$ rule (Jackson, 2003). Recommendations for an acceptable $N:q$ ratio vary, but an $N:q$ ratio of 10:1 is often recommended (Kline, 2010). In the current study, only individuals who reported they had the same romantic partner at T1 as T2 were included in the analyses ($N = 200$). The number of parameters estimated was 13. The $N:q$ ratio for the current study was thus 15.4:1 and the sample size was considered acceptable.

Two models were tested. Model 1 (displayed in Figure 2) tested the ability of the original TMIM to predict the information management strategies participants adopted from T1 to T2 in

regard to seeking sexual health information from romantic partners. Model 2 (displayed in Figure 3) added a measure of sexual health information seeking from the media to capture whether the TMIM could also account for sexual health information seeking via mediated information channels. Because the sexual health narrative failed to produce a statistically significant effect on uncertainty discrepancy or anxiety, the models were tested with participants from both the experimental and control groups.

In both models, maximum likelihood (ML) estimation method was used. ML is the most oft-used SEM fitting function (Schermelleh-Engel, Moosbrugger, & Müller, 2003). ML is an iterative method that estimates the likelihood that data were drawn from the population. If residuals are large, ML adjusts the estimates to improve fit, a process which is repeated until the adjustments converge. Compared to other estimators (e.g., generalized least squares, weighted least squares), ML may be more insensitive to variations in sample size and kurtosis (Olsson, Foss, Troye, & Howell, 2000).

The current study used a sequential longitudinal design, which is when different variables are measured at successive times (MacCollum & Austin, 2000). This enables examination of the effects that variables measured at one occasion have on different variables measured at a later occasion (MacCollum & Austin, 2000). For all model predictors (uncertainty discrepancy, anxiety, outcome expectancies, and efficacy), T1 data were used. For outcomes (information management strategies), T2 data were used. The models are based on previous TMIM models (Afifi & Weiner, 2006; Rosenberg, 2014) with an additional path created to examine sexual health information seeking from mediated information channels (H7). Both models use a latent efficacy construct, comprised of communication efficacy, coping efficacy, and target efficacy.

Means, standard deviations, and Cronbach's alphas for the TMIM variables for participants included in testing of the full TMIM model are reported in Table 12.

Table 12. TMIM Variable Means, Standard Deviations, and Cronbach's Alphas

Variable	<i>M</i>	<i>SD</i>	α
Uncertainty Discrepancy (-6, +6)	.63	1.55	
Anxiety (averaged, 1-5)	2.43	.97	.83
Outcome Expectancies (averaged, 1-7)	4.97	1.42	.85
Efficacy (averaged, 1-7)			
Communication efficacy	5.60	1.22	.82
Coping efficacy	3.81	1.55	.84
Target efficacy	5.25	1.17	.81
Information Management (averaged, 1-7)			
Direct information seeking §	4.57	2.16	.97
Indirect information seeking §	3.64	1.63	.61
Information avoidance §	2.44	1.67	.92

N = 196-200.

§ Only measured at T2.

Correlations among variables for the sample of participants included in the SEM analyses are displayed in Table 13. The highest correlation was between communication efficacy and target efficacy ($r = .74$), which may indicate multicollinearity. However, the decision was made to retain both variables in the models because of their importance to the TMIM (particularly to the efficacy construct) and because some recommendations set $r = .85$ as the threshold for potentially problematic correlations (Kline, 2010).

Table 13. Correlations for TMIM Variables

	1	2	3	4	5	6	7	8	9	10
1. Uncertainty Discrepancy	--									
2. Anxiety	.28***	--								
3. Outcome Expectancies	-.01	-.14	--							
4. Communication Efficacy	-.03	.37***	.45***	--						
5. Coping Efficacy	-.08	-.03	-.01	.01	--					
6. Target Efficacy	-.12	-.47***	.42***	.74***	-.05	--				
7. Direct Info. Seeking	-.05	.07	.24**	.11	.02	.12	--			
8. Indirect Info. Seeking	.04	.07	-.20**	-.15*	.19**	-.14*	-.31***	--		
9. Information Avoidance	-.06	.15*	-.30***	-.45***	.05	-.37***	-.02	.32***	--	
10. Mediated Info. Seeking	-.02	.18*	-.03	-.16*	.04	-.21**	.36***	-.01	.31***	--

N = 193-200.

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

Worth noting is that of the 200 individuals who comprised the sample for which the full TMIM model was tested, 107 (53.5%) reported that their perceived uncertainty and desired uncertainty about their partner's sexual health matched, 78 (39%) wished they were less uncertain, and 15 (7.5%) wished they were more uncertain.

The next section details the criteria on which the performance of the TMIM models were evaluated.

4.4.2 *Model Fit Indices*

SEM is concerned with how well observed data fits a hypothesized model. To assess model fit, more than one fit index should be used because sensitivity to both measurement model misspecification and structural model misspecification varies by fit index (Hu & Bentler, 1998). Fit indices can be categorized into three groups: absolute, incremental, and parsimonious (Mueller & Hancock, 2008). *Absolute fit indices* test the ability of an a priori model to fit the sample data (i.e., these models do not use alternative models as a foundation for comparison). Absolute fit indices “provide the most fundamental indication of how well the proposed theory fits the data” (Hooper, Coughlan, & Mullen, 2008, p. 53). Two absolute fit indices were used in this study: Chi-Square and Standardized Root Square Mean residual (SRMR). *Incremental fit indices* compare the fit of the model to a baseline/null model that specifies no relations exist among variables (Mueller & Hancock, 2008). One incremental fit index, the Comparative Fit Index (CFI), was used in this study. *Parsimonious* indices recognize the complexity of a model (i.e., model fit is improved as useful parameters are added) and these indices “evaluate the overall discrepancy between observed and implied variance matrices” (Mueller & Hancock, 2008, p. 490). One parsimonious fit index, the Root Mean Square Error of Approximation (RMSEA) was used in this study. These four fit indices are each described in turn.

4.4.2.1 *Chi-Square*

The most oft-used method of evaluating “goodness-of-fit” is chi-square, which assesses the discrepancy between the sample and fitted covariance matrices (Hu & Bentler, 1999). A low statistic indicates non-significance and thus a good fit (Hoe, 2008). This is because chi-square tests model “misspecification” and thus, when the chi-square statistic is significant, the model does not fit the sample data (Weston & Gore, 2006, p. 742). Model fit is determined by testing whether the residuals are greater than would be expected by chance (Barrett, 2007). A good model should be insignificant at the .05 threshold (Barrett, 2007).

There are two main limitations to the chi-square: (1) the statistic tests whether the model is an exact fit to the data, which is rare (Weston & Gore, 2006), and (2) large sample sizes increase power, which results in significance with small effect sizes (Henson, 2006). To account for these limitations, researchers often determine the relative chi-square ratio, which is calculated by dividing the chi-square statistic by the degrees of freedom. The general rule for acceptable model fit using the relative chi-square ratio is $< 2:1$ or $3:1$ (Schreiber, Nora, Stage, Barlow, & King, 2006).

4.4.2.2 *Root Mean Square Error of Approximation*

The RMSEA measures the approximate fit of the model in the population and is thus concerned with the discrepancy due to approximation (Schermelleh-Engel et al., 2003). The RMSEA offers a desirable alternative to the chi-square test statistic in that the RMSEA is less affected by sample size and thus has greater descriptive value (Quintana & Maxwell, 1999). RMSEA is considered among the most useful fit indices, in part, because the statistic chooses the model with the fewest parameters (Hooper et al., 2008). In addition, this statistic enables a confidence interval to be calculated around the point estimate, which indicates its precision

(Quintana & Maxwell, 1999). The RMSEA for a good model should be $< .05$ (Schermelleh-Engel et al., 2003) or $.06$ (Hu & Bentler, 1999), as values between $.08$ and $.10$ indicate a “mediocre fit” (Hoe, 2008, p. 78). The current study uses $.06$ as the a priori threshold.

4.4.2.3 Standardized Root Mean Square Residual

The SRMR is the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model (Hooper et al., 2008). The SRMR has been found to be the fit index most sensitive to the misspecified factor covariances (Hu & Bentler, 1998) though some findings suggest otherwise (e.g., Fan & Sivo, 2005). For sample sizes below 250, the SRMR and at least one another fit index should be reported (Holbert & Stephenson, 2002). The recommended cutoff for SRMR is $\leq .08$ (Hu & Bentler, 1999; Schreiber et al., 2006), which is the a priori threshold adopted by the current study.

4.4.2.4 Comparative Fit Index

As noted, the CFI is an incremental fit index. The CFI “assumes that all latent variables are uncorrelated . . . and compares the sample covariance matrix with this null model” (Hooper et al., 2008, p. 55). The CFI is among the most popular fit indices due to its insensitivity to sample size (Fan, Thompson, & Wang, 1999). CFI values range from 0 to 1 with values closer to 1 indicating a better fit (Weston & Gore, 2006). The cutoff value for the CFI must be $> .90$ (Hu & Bentler, 1999) though a threshold of $\geq .95$ has been more recently advanced (Schreiber et al., 2006) and thus serves as the a priori standard in the current study.

4.5 Sexual Health Information Management (H1-H7)

Because the two models tested shared most of the same hypothesized pathways (and were thus expected to exhibit similar relationships among variables), each model’s performance is briefly discussed individually in this section and in tandem in the Discussion section.

4.5.1 Information Management from Romantic Partners

The original TMIM met the established a priori fit indices standards and was a good fit for the data, $\chi^2(20, N = 200) = 29.338, p > .05, CFI = .97, SRMR = .04, RMSEA = .05$ (90% CI = .000, .084). Most predicted paths in the model were statistically significant and exhibited the expected relationships. Specifically, uncertainty discrepancy was positively related to anxiety (H1), which in turn was negatively associated with outcome expectancies (H2a) and efficacy (H2B). In addition, outcome expectancies was positively associated with efficacy (H3), which was positively associated with direct information seeking (H4) and negatively associated with information avoidance (H6). The only hypothesized pathway that was not statistically significant was that from efficacy to indirect information seeking (H5). The standardized parameter estimates for all pathways appear in Figure 7.

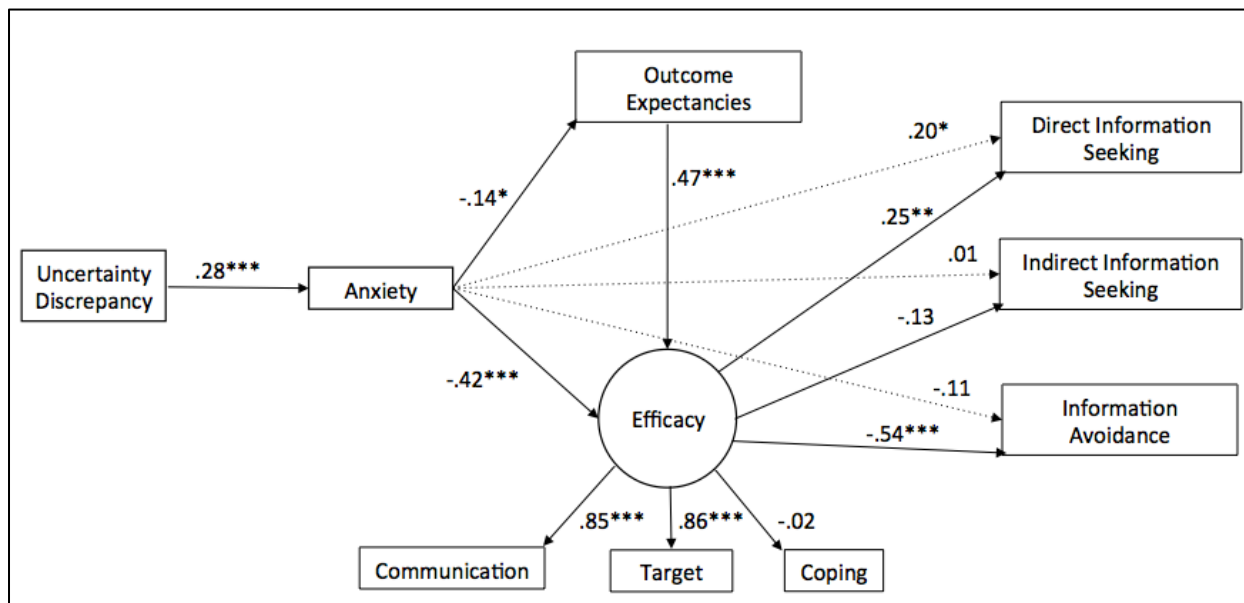


Figure 7. TMIM for seeking sexual health information from romantic partners.

Note. All parameter estimates are standardized. * $p < .05$, ** $p < .01$, *** $p < .001$.

As noted, this study sought to create a latent efficacy construct comprised of the three TMIM efficacy measures: communication efficacy, target efficacy, and coping efficacy. As

displayed in Figure 7, communication and target efficacy significantly contributed to the variance in the latent efficacy construct; however, coping efficacy was not a significant contributor to the variance in the latent efficacy construct, a finding that was consistent with some past applications of the theory (e.g., Dillow & LaBelle, 2014; Rauscher & Hesse, 2014). Whereas the correlation between communication efficacy and target efficacy was statistically significant and quite high, neither of these two efficacy components were correlated with coping efficacy (Table 13). This suggests that individuals' perceived ability to cope with potentially negative outcomes of seeking sexual health information from romantic partners is not closely related to their perceived ability to communicate with partners about their sexual health nor their perceptions that their partners would be able and willing to provide honest and accurate information about their sexual health.

In sum, the TMIM provided a useful model with which to predict interpersonal information management strategies within the context of individuals' efforts to seek or avoid sexual health information from romantic partners. An expanded TMIM model, discussed next, examined the potential of the framework to also predict sexual health information seeking from mediated information channels.

4.5.2 Information Management from Romantic Partners and Media

Whereas applications of the TMIM have, to date, been exclusively concerned with information management via interpersonal channels, one objective of this project was to examine the extent to which the TMIM may predict issue-related information seeking from mediated information channels. Specifically, the current study examined sexual health information seeking from mediated information channels alongside three interpersonal information management

strategies (direct information seeking, indirect information seeking, information avoidance) that previous applications of the TMIM have examined (e.g., Afifi & Afifi, 2009a; Rosenberg, 2014).

Table 14 displays sexual health information seeking behaviors from mediated information channels from T1 to T2. Results suggest participants sought sexual health information from the Internet most often and that sexual health information seeking occurred with comparable frequency across the other four information channels.

In regard to overall performance of the expanded model, the TMIM model accompanied by a measure of mediated information seeking from T1 to T2 met the a priori fit indices standards and proved a good fit for the data, $\chi^2(24, N = 200) = 32.623, p > .05, CFI = .98, SRMR = .04, RMSEA = .04$ (90% $CI = .000, .076$). The standardized parameter estimates appear in Figure 8.

Table 14. Sexual Health Information Seeking from Media between T1 and T2

	Did not Seek Information	Sought Information	<i>M</i>	<i>SD</i>
Internet (non-social media)	44 (22%)	156 (78%)	2.57	1.09
Social Media	90 (45%)	110 (55%)	1.96	1.03
Television	88 (44%)	111 (56%)	1.93	.98
Magazines/Newspapers	96 (48%)	104 (52%)	1.82	.93
Books	98 (49%)	102 (51%)	1.76	1.00

N = 200.

Note. Scale ranged from 1 (never sought information) to 4 (often sought information) and thus greater *M* indicates more information sought.

Similar to the first model, uncertainty discrepancy was positively related to anxiety (H1), which in turn was negatively related to outcome expectancies (H2a) and efficacy (H2B). In addition, outcome expectancies was positively related to efficacy (H3), which was positively associated with direct information seeking (H4) and negatively associated with information avoidance (H6). The only hypothesized pathway that was not statistically significant was that from efficacy to indirect information seeking (H5). Of particular interest to the current study, the

path between efficacy and mediated information seeking (H7) was not significant. However, the path approached significance ($p = .07$) and the relationship between the variables operated as expected, as higher efficacy was negatively associated with sexual health information seeking from the media between T1 and T2. Thus, after the addition of the pathway from efficacy to mediated information seeking, the model's other relationships held constant and the model proved a good fit for the data.

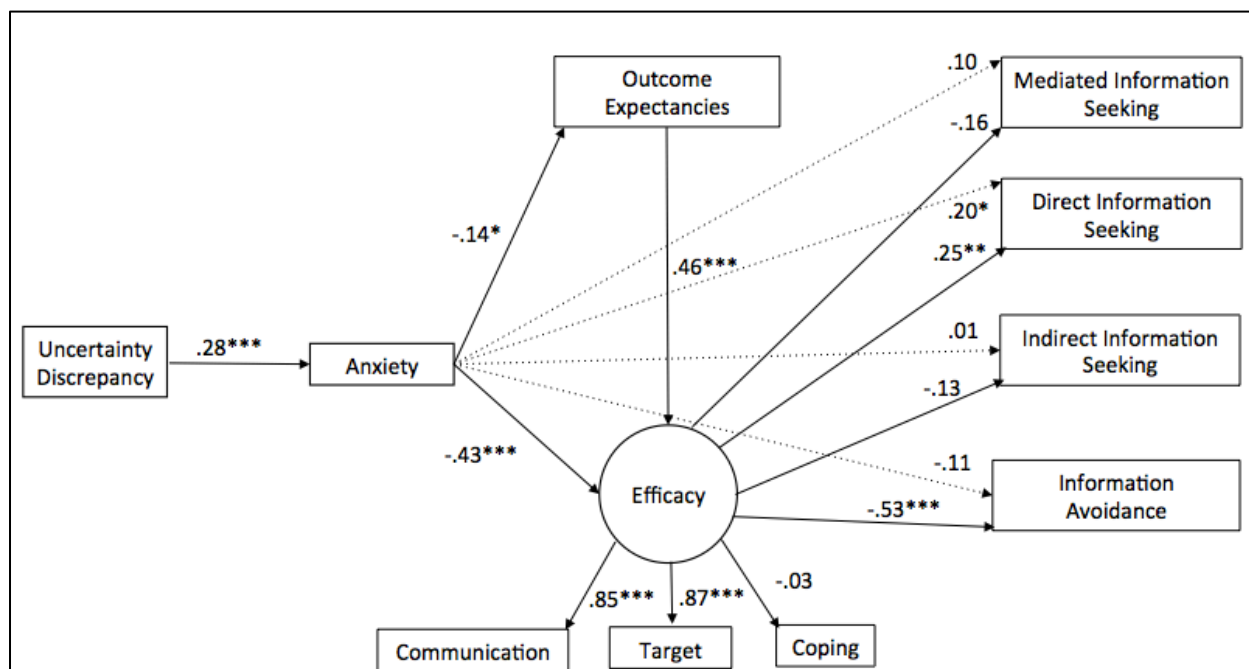


Figure 8. TMIM for seeking sexual health information from romantic partners and the media. Note. All parameter estimates are standardized. * $p < .05$, ** $p < .01$, *** $p < .001$.

4.5.3 Summary of TMIM's Ability to Predict Information Management

A summary of the fit indices for both models, as displayed in Table 15, shows both models provided tenable fits for the data. The implications of the impressive performance of the TMIM and the relationships between variables are considered in detail in the Discussion section, but briefly, these results provide further support for the TMIM as a framework with which to

examine information seeking and offer encouragement for the inclusion of a measure of issue-related mediated information seeking in future applications of the TMIM.

Table 15. Fit Indices for Structural Equation Models

Model	χ^2	<i>df</i>	<i>p</i>	CF I	SRM R	RMSE A	RMSEA 90% CI
Figure 7: Original TMIM	29.34	20	> .05	.97	.04	.05	[.00, .08]
Figure 8: TMIM with media pathway	32.62	24	> .05	.98	.04	.04	[.00, .08]

N = 200.

Table 16 displays the standardized path coefficients for the hypotheses tested for the full TMIM model and the model with a measure of mediated information seeking. The hypothesized path relationships in the original TMIM model and the proposed expanded model (H1-H7) are briefly summarized here and discussed in greater detail in the Discussion section.

Table 16. Theory of Motivated Information Management Hypothesized Pathways

Model	H1	H2a	H2b	H3	H4	H5	H6	H7
Figure 7: TMIM	.28***	-.14*	-.42***	.47***	.25**	-.13	-.54***	-
Figure 8: TMIM with media	.28***	-.14*	-.43***	.46***	.25**	-.13	-.53***	-.16

N = 200.

Note. All parameters are standardized.

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

H1 predicted that uncertainty discrepancy would be positively associated with anxiety. The analysis provided support for this hypothesis, as the path from uncertainty discrepancy to anxiety was positive and significant. H2a predicted that anxiety would be negatively associated with outcome expectancies. This hypothesis was supported, as the path from anxiety to outcome expectancies was negative and significant. H2b predicted that anxiety would be negatively associated with efficacy. This hypothesis was supported, as the path from anxiety to efficacy was negative and significant. H3 predicted that outcome expectancies would be positively associated with efficacy. This hypothesis was supported, as the path from outcome expectancies to efficacy was positive and significant.

H4 predicted that efficacy would be positively associated with direct information seeking. The analysis provided support for this hypothesis, as the path efficacy to direct information seeking was positive and significant. H5 predicted that efficacy would be negatively associated with indirect information seeking. The analysis did not provide support for this hypothesis, as the path efficacy to indirect information seeking was negative, as expected, but not significant. As is discussed in the Discussion section, the lack of support for this hypothesis is likely due to how the indirect information seeking construct was operationalized in the current study. H6 predicted that efficacy would be negatively associated with information avoidance. The analysis provided support for this hypothesis, as the path from efficacy to information avoidance was negative and significant. Finally, H7 predicted efficacy would be negatively related to information seeking from mediated channels. This hypothesis was not supported. Although, efficacy was negatively associated with information seeking from the media, as expected, the path coefficient was not significant. However, reviewing the correlation matrix for the study variables in the TMIM model (Table 13) shows that mediated information seeking had a statistically significant negative relationship with two efficacy constructs: communication efficacy and target efficacy. The potential implications of these findings are considered in the Discussion section.

Whereas H1-H7 tested the ability of the full TMIM model to predict participants' information management strategies in regard to seeking (or avoiding) sexual health information from romantic partners and mediated information channels, additional analyses was performed to obtain a more detailed understanding of the mechanisms by which certain TMIM variables influence others.

4.6 Mediated Relationships as Predicted by the TMIM (H8-H10)

The current study tested three mediation hypotheses predicted by the original TMIM and subsequent applications of the model (Afifi & Weiner, 2004; Wong, 2014). The first mediation hypothesis (H8) predicted anxiety would mediate the relationship between uncertainty discrepancy and efficacy. The second mediation hypothesis (H9) predicted anxiety would mediate the relationship between uncertainty discrepancy and outcome expectancies. The third mediation hypothesis (H10) predicted anxiety would mediate the relationship between uncertainty discrepancy and information seeking intentions.

All mediation hypotheses were tested using Baron and Kenny's (1986) causal steps approach for performing mediation analyses were used. The recommendations are as follows: (1) the independent variable has a significant zero-order correlation with both the dependent variable and the mediator variable, respectively, (2) the mediator variable has a significant zero-order correlation with the dependent variable, and (3) when the mediator is added as a predictor, the effect of the independent variable on the dependent is reduced to zero (in cases of full mediation) or reduced but not to zero (in cases of partial mediation). If Baron & Kenny's (1986) mediation requirements were met, bootstrapping (Preacher & Hayes, 2004) was performed to directly test indirect effects.

Bootstrapping provides a nonparametric method to estimate effect size and makes no assumptions about the distributions of indirect effects (Preacher & Hayes, 2004). This is possible because bootstrapping takes a large number of samples of the original sample size (with replacement) and computes the indirect effect in each sample (Preacher & Hayes, 2004). Bootstrapping is a "more rigorous and powerful" approach to test indirect effects than the oft-used Sobel test (Zhao et al., 2010, p. 205), which generally accompanies the Baron and Kenny

(1986) approach to mediation testing and examines whether the mediator is responsible for the influence of the independent variable on the dependent variable. Unlike the Sobel test, bootstrapping does not make assumptions about the sampling distribution of the indirect effect (Hayes, 2009). In the current study, bootstrapping tested indirect effects based on 1,000 bootstrap resamples. The PROCESS macro (Preacher & Hayes, 2004) was used for all bootstrapping analyses.

4.6.1 *Uncertainty Discrepancy, Anxiety, and Efficacy (H8)*

The TMIM predicts anxiety mediates the relationship between uncertainty discrepancy and efficacy (Afifi & Weiner, 2004). Thus, H8 predicted that anxiety would mediate the effect of uncertainty discrepancy about the sexual health of one's romantic partner on efficacy to obtain sexual health information from the individual and to cope with related outcomes. As displayed in Table 17, the zero-order correlations for uncertainty discrepancy, anxiety, and efficacy were all significant.

Table 17. Correlations for Uncertainty Discrepancy, Anxiety, and Efficacy

Variable	1	2	3
1. Uncertainty Discrepancy (IV)	-		
2. Anxiety (M)	.360**	-	
3. Efficacy (DV)	-.131*	-.447**	-

$N = 301$.

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

Following Baron and Kenny (1986), in Step 1 of the mediation model, the regression of anxiety on uncertainty discrepancy, was significant, $B = .245$, $t(308) = 6.746$, $p < .01$. In Step 2, the regression of efficacy on the mediator, anxiety, was also significant, $B = -.372$, $t(301) = -8.652$, $p < .01$. In Step 3, when controlling for the mediator, anxiety, uncertainty discrepancy no longer accounted for a significant portion of the variance in efficacy, $B = .032$, $SE = .026$, $t(300) = .471$, $p > .05$. Bootstrapping procedures were used to test the significance of the indirect effect.

Unstandardized indirect effects were computed for 1,000 bootstrapped samples. The bootstrapped unstandardized effect was $-.05$, and the 95% confidence interval ranged from $-.09$ to $-.03$. Because zero lies outside the confidence interval, the indirect effect was statistically significant. Thus, H8 was supported, as anxiety was found to mediate the relationship between uncertainty discrepancy and efficacy (Figure 9).

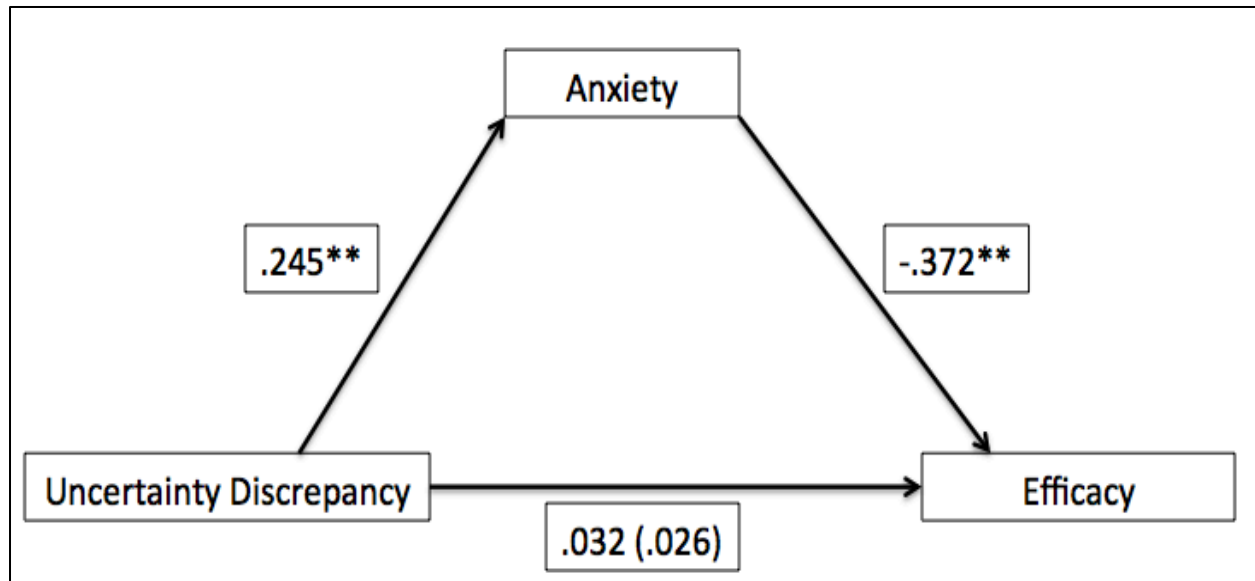


Figure 9. Anxiety mediating the relationship between uncertainty discrepancy and efficacy. Note. Unstandardized regression coefficients for the relationship between uncertainty discrepancy and efficacy as mediated by anxiety. The standardized regression coefficient between uncertainty discrepancy and efficacy controlling for anxiety is in parentheses. ** $p < .01$.

4.6.2 *Uncertainty Discrepancy, Anxiety, and Outcome Expectancies (H9)*

The TMIM predicts anxiety mediates the relationship between uncertainty discrepancy and outcome expectancies (Afifi & Weiner, 2004). H9 proposed anxiety would mediate the effect of uncertainty discrepancy about the sexual health of one's romantic partner on outcome expectancies of seeking sexual health information from romantic partners. The zero-order correlations for uncertainty discrepancy (IV), anxiety (mediator), and outcome expectancies (DV) were calculated and appear in Table 18.

Table 18. Correlations for Uncertainty Discrepancy, Anxiety, and Outcome Expectancies

Variable	1	2	3
1. Uncertainty Discrepancy (IV)	-		
2. Anxiety (M)	.360*	-	
3. Outcome Expectancies (DV)	-.06	-.182*	-

$N = 308$.

* $p < .01$.

The first criterion of Baron and Kenny's (1986) mediation test was not met. Specifically, the independent variable (uncertainty discrepancy) and the dependent variable (outcome expectancies) did not significantly correlate ($p > .05$). Thus, the hypothesis was not supported.

4.6.3 *Uncertainty Discrepancy, Anxiety, Information Seeking Intent (H10)*

Whereas most applications of the TMIM examine actual information management behaviors, Wong (2014) recently tested the ability of the TMIM to predict information seeking intentions and found partial support for his hypothesis that anxiety would mediate the relationship between uncertainty discrepancy about the HPV vaccination and information seeking intentions. The current study tested the ability of the TMIM to predict information seeking intentions within the context of seeking sexual health information from romantic partners. Specifically, H10 predicted anxiety would mediate the relationship between uncertainty discrepancy and intent to seek sexual health information from romantic partners. As reported in Table 19, all variables had significant zero-order correlations amongst them.

Table 19. Correlations for Uncertainty Discrepancy, Anxiety, and Information Seeking Intent

Variable	1	2	3
1. Uncertainty Discrepancy (IV)	-		
2. Anxiety (M)	.360**	-	
3. Information Seeking Intent (DV)	.107*	.239**	-

$N = 306$.

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

Following Baron and Kenny (1986), in Step 1 of the model, the regression of anxiety on uncertainty discrepancy was significant ($B = .245$, $SE = .036$, $t(307) = 6.75$, $p < .01$). In Step 2,

the regression of information seeking intent on the mediator, anxiety, was statistically significantly ($B = .318, SE = .074, t(307) = 4.31, p < .01$). In Step 3, controlling for anxiety, the direct effect of uncertainty discrepancy on information seeking intent was not statistically significant ($B = .020, SE = .022, t(306) = .36, p > .05$). Next, bootstrapping was performed, as unstandardized indirect effects were computed for 1,000 resamples. The bootstrapped unstandardized effect was .07, and the 95% confidence interval ranged from .02 to .13. Because zero lies outside the confidence interval, the indirect effect was statistically significant. Thus, H10 was supported, as anxiety was found to mediate the relationship between uncertainty discrepancy and information seeking intentions (Figure 10).

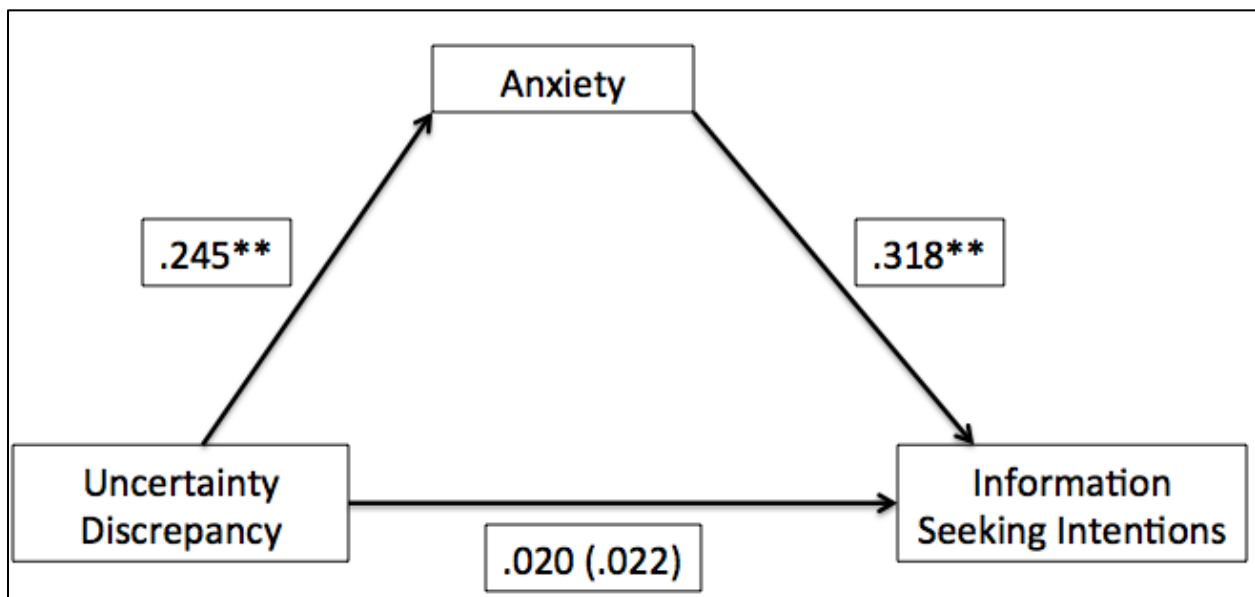


Figure 10. Anxiety mediating the relationship between uncertainty discrepancy and information seeking intentions

Note. Unstandardized regression coefficients for the relationship between uncertainty discrepancy and information seeking intentions as mediated by anxiety. The standardized regression coefficient between uncertainty discrepancy and information seeking controlling for anxiety is in parentheses.

** $p < .01$.

4.7 Issue-related Anxiety and Information Seeking Intentions (H11)

Whereas the original TMIM proposed anxiety stems from uncertainty discrepancy, Wong (2014) hypothesized that other sources of anxiety (namely, issue-related anxiety) may play a role in individuals' information management decisions. Specifically, he hypothesized anxiety about contracting HPV would predict young women's information seeking intentions about the HPV vaccine beyond those predicted by the TMIM variables. To test his hypothesis, Wong (2014) controlled for the TMIM variables to examine the extent to which issue-related anxiety would predict information seeking intentions "above and beyond" the TMIM variables (p. 93).

This study applied the hypothesis Wong (2014) set forth in the context of STIs. Specifically, H11 predicts that issue-related anxiety (i.e., anxiety about contracting an STI) would positively predict individuals' intentions to seek sexual health information from partners after controlling for the TMIM variables. Consistent with Wong (2014), a regression analysis was performed. The TMIM variables were all entered into the first block of the model: uncertainty discrepancy, anxiety, outcome expectancies, and efficacy. Issue-related anxiety was entered into the second block of the model.

Table 20. Regression Predicting Information Seeking Intent from Issue-related Anxiety Controlling for the TMIM Variables

	Model 1			Model 2		
	B	SE	β	B	SE	β
(Constant)	1.01	.61		.74	.62	
Uncertainty discrepancy	.02	.06	.03	.02	.06	.02
Anxiety	.42**	.09	.31	.38**	.09	.28
Outcome Expectancies	.12*	.06	.14	.10	.06	.10
Efficacy	.18	.11	.11	.19	.11	.12
Issue-related anxiety				.12*	.05	.13
Adjusted R^2	.09			.10		
F	7.894**			7.489**		
ΔR^2				.013*		

$N = 298$.

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

As hypothesized, anxiety about contracting an STI was a significant predictor of intent to seek information from partners ($\beta = .123, t = 2.323, p < .05$), after controlling for the TMIM variables (Table 20).

To examine whether additional co-variates may explain some of the variance in information seeking intentions attributed to issue-related anxiety, the regression analyses was performed again with four additional control variables. Specifically, participants' gender, age, sexually active status, and the extent to which they had previously sought sexual health information from partners were entered into the first block of the model along with the four TMIM variables. Issue-related anxiety was entered into the second block of the model. As displayed in Table 21, issue-related anxiety (i.e., anxiety about contracting an STI) was not a significant predictor of intentions to seek information from partners ($\beta = .016, t = .317, p < .05$), after controlling for the TMIM variables and the additional co-variates. Males, people who had previously sought more sexual health information from partners, and individuals with greater anxiety stemming from the uncertainty discrepancy all reported greater intention to seek sexual health information from their partners.

Table 21. Regression Predicting Information Seeking Intent from Issue-related Anxiety Controlling for TMIM Variables and Additional Co-variates

	Model 1			Model 2		
	B	SE	β	B	SE	β
(Constant)	.36	.69		.33	.70	
Gender (Female = 0, Male = 1)	.40*	.16	.13	.40*	.17	.13
Age	-.02	.02	-.06	-.02	.02	-.06
Sexually Active (No = 0, Yes = 1)	.11	.16	.03	.11	.16	.03
Information Ever Sought	.29**	.04	.40	.28**	.04	.39
Uncertainty Discrepancy	.06	.05	.06	.06	.06	.06
Anxiety	.42**	.08	.31	.42**	.08	.31
Outcome Expectancies	.01	.05	.01	-.01	.05	-.01
Efficacy	.06	.10	.04	.06	.10	.04
Issue-related anxiety				.02	.05	.02
Adjusted R^2	.23			.23		
F	11.860**			10.52**		
ΔR^2				.00		

$N = 295$.

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

This suggests that the potential of issue-related anxiety to strengthen the predictive power of the TMIM – by way of uniquely explaining information seeking behaviors or intentions – warrants further exploration, as some of the variance attributed to issue-related anxiety could be at least partially attributed to other variables.

4.8 Summary of Study Results

A summary of all study results appear in Table 22. As displayed, the current study found support for most of the TMIM hypotheses.

Table 22. Summary of Support for Hypotheses

Hypotheses	Result
H1: Uncertainty discrepancy is positively associated with anxiety ²	Supported
H2a: Anxiety is negatively associated with outcome expectancies ²	Supported
H2b: Anxiety is negatively associated with efficacy ²	Supported
H3: Outcome expectancies is positively associated with efficacy ²	Supported
H4: Efficacy is positively associated with direct information seeking ²	Supported
H5: Efficacy is negatively associated with indirect information seeking ²	Not supported
H6: Efficacy is negatively associated with information avoidance ²	Supported
H7: Efficacy is negatively associated with mediated information seeking ²	Not supported
H8: Anxiety mediates uncertainty discrepancy and efficacy ¹	Supported
H9: Anxiety mediates uncertainty discrepancy and outcome expectancies ¹	Not supported
H10: Anxiety mediates uncertainty discrepancy and information seeking intent ¹	Supported
H11: Issue-related anxiety predicts information seeking intent ¹	Mixed support

¹Analyses includes all individuals with partner at T1.

²Analyses only includes individuals with same partner at T1 and T2.

5 DISCUSSION

The goals of this study were (1) to examine whether a sexual health narrative predicated on uncertainty-identity theory (UIT) can influence individuals' uncertainty discrepancy and anxiety about the sexual health of a romantic partner, (2) to use the theory of motivated information management (TMIM) to predict information management within the context of the sexual health of romantic partners, and (3) to explore an expansion of the TMIM that includes sexual health information seeking from mediated channels alongside the interpersonal information management strategies.

The Discussion chapter largely unfolds in the same order in which results were introduced and is presented in six sections. First, the results from the attempt to influence uncertainty discrepancy and anxiety are reviewed and their implications discussed. Second, the ability of the full TMIM model to predict information management about the sexual health of romantic partners is considered in regard to interpersonal and mediated information management strategies. Third, implications of the findings from the three mediation hypotheses are reviewed. Fourth, findings related to the potential of issue-related anxiety to explain information seeking intentions are considered. Fifth, key practical considerations to emerge from this study, which may be of particular use to health communication professionals who work in the fields of sexual health and sexual communication are reviewed. The Discussion section closes with study limitations, directions for future research, and a conclusion.

5.1 Influencing Uncertainty Discrepancy and Anxiety

The TMIM (Afifi & Weiner, 2004) attempts to explain and predict how individuals manage uncertainty through a three-stage iterative process. The process begins with the recognition that a gap exists between one's perceived uncertainty and desired uncertainty about an issue of importance and the process concludes with the decision to seek information, avoid information, or reappraise the need for information. It thus reasons that inducing changes to the variables that comprise the first stage of the model (uncertainty discrepancy and emotion) would have an effect on the variables that comprise the subsequent stages of the model and ultimately whether or not an individual chooses to seek relevant information as a means to address one's uncertainty discrepancy and/or the emotions that manifest as a result. Specifically, influencing uncertainty discrepancy at the start of the model – by increasing an individual's perception of his/her existing uncertainty and/or by reducing the amount of uncertainty an individual desires –

should theoretically influence an individual's subsequent cognitive assessments, in part, via the mediating effects of emotions (e.g., anxiety) experienced as a result of one's awareness of the uncertainty discrepancy. Influencing emotion directly may be particularly valuable, as individuals may be more motivated to manage emotional reactions stemming from uncertainty discrepancy than the uncertainty discrepancy itself (Afifi & Weiner, 2004).

This study examined the potential of a sexual health narrative to influence participants' uncertainty discrepancy and anxiety in regard to their knowledge about the sexual health of romantic partners. The narrative was predicated on UIT which suggests individuals look to social groups to reduce uncertainty and understand context-specific norms and behaviors (Hogg, 2000, 2009; Smith et al., 2007). Results suggest the sexual health narrative did not affect uncertainty discrepancy or anxiety, as participants in the experimental and control groups did not experience statistically significant differences for either variable. Whether individuals related to the sexual health narrative likely explains, at least in part, the inability of the sexual health narrative to influence uncertainty discrepancy and anxiety. Specifically, participants who read the sexual health narrative and related to the main character experienced greater uncertainty discrepancy and anxiety about their romantic partners' sexual health, on average, than did participants who read the sexual health narrative, but did not relate to the main character.

The aforementioned finding speaks to the importance of creating entertainment narratives that feature characters with which individuals identify when trying to influence knowledge, attitudes, or behaviors, as others have suggested (Moyer-Gusé, Chung, & Jain, 2011; Murphy, Frank, Chatterjee, & Baezconde-Garbanti, 2013). Notably, this finding offers some encouragement for the attempt to influence uncertainty discrepancy and anxiety, which speaks to the potential of the TMIM to serve as a framework with which to actively guide efforts to

promote health information seeking. Although the attempt to influence uncertainty discrepancy and anxiety was exploratory in nature and thus used a rather simple, straightforward print narrative, the results suggest that developing and testing more advanced health communication materials as a means with which to affect the variables that comprise the TMIM's first stage would be a worthwhile endeavor. A final contribution of the current study's attempt to influence uncertainty discrepancy and anxiety is that similar results were found for both variables. That is, in all analyses (experimental vs. control; experimental/relate vs. experimental/did not relate), uncertainty discrepancy and anxiety were similarly influenced (or not influenced) by exposure to the narrative. This finding reiterates the closeness between these two constructs and thus provide further support for the TMIM's proposed relationship between them; namely, that uncertainty discrepancy is positively related to anxiety (Afifi & Weiner, 2004).

It must be noted that increasing uncertainty discrepancy and/or increasing anxiety about an issue of perceived importance would not guarantee that individuals would be more likely to seek information. For example, Afifi and Weiner (2006) found individuals who experienced higher anxiety about their partner's sexual health were ultimately less likely to have sought sexual health information from partners because the anxiety was negatively related to efficacy outcome expectancies. This suggests that attempting to increase anxiety may not be desirable if the goal is to increase efficacy and to create or support perceptions that an information search would lead to positive outcomes. However, opportunities may exist to increase the salience or magnitude of those emotions that are expected to elicit positive cognitive assessments (e.g., increase efficacy) or to reduce those emotions (e.g., anxiety) that are thought to elicit detrimental cognitive assessments (e.g., expecting negative outcomes to arise from an information search).

That anxiety would weaken one's inclination to seek sexual health information from a romantic partner may present a challenge for health communication professionals because young adults often overestimate their knowledge of partners' sexual health and underestimate personal STI risk (e.g., de Visser, 2005; Ethier et al., 2003; Hickey & Cleland, 2013; Lo et al., 2009). This could presumably produce a false sense of security (i.e., lower anxiety) and a belief that seeking sexual health information from one's partner is unnecessary. If high anxiety about an individual's knowledge (or lack thereof) about the sexual health of one's partner makes information seeking from one's romantic partner less likely and low anxiety makes information seeking seem superfluous, health communication practitioners may wish to explore other options to promote information seeking among sexual partners. One possibility is to attempt to increase uncertainty discrepancy about the sexual health of one's partner to address the (possible) misperception that one has sufficient information (i.e., increase one's perception that additional information is necessary), while simultaneously addressing the specific cognitive assessments that determine the selection of information management strategies. For example, health communication campaigns could seek to increase one's sense of communication efficacy or highlight the benefits of seeking sexual health information from one's partner in order to directly influence an individual's outcome expectancies of an information search. A second option is to attempt to elicit positive emotions (or, more generally, emotions expected to lead to positive cognitive assessments). Indeed, individuals may experience a host of emotions stemming from uncertainty discrepancy (e.g., Fowler & Afifi, 2011; Rauscher & Hesse, 2014). For example, Fowler and Afifi (2011) found among the "most intensely experienced emotional responses" to children's uncertainty discrepancy over caregiving discussions with aging parents, seven of the 10 were positive emotional responses such as feeling calm and secure (p. 527). Thus, a narrative

that portrays potentially positive emotions (e.g., assurance, comfort) to result from sexual communication with partners may provide a means with which to positively influence efficacy and outcome expectancies of an information search from a romantic partner.

Using the TMIM as a framework with which to promote health information seeking by influencing uncertainty discrepancy and/or emotion is useful only insofar as the model capably predicts information seeking behavior. The next section thus discusses the ability of the TMIM model to predict sexual health information seeking as examined in the current study.

5.2 Performance of the TMIM

A primary objective of the current study was to test whether the TMIM could predict the information management strategies individuals adopt in regard to seeking or avoiding sexual health information from romantic partners. The TMIM is applicable in situations for which an individual experiences uncertainty in an interpersonal context about an issue that he or she perceives as important (Afifi & Weiner, 2006). Applying the TMIM to individuals' knowledge about the sexual health of romantic partners falls within the theory's scope, as romantic relationships are usually dyadic in nature (e.g., Theiss & Solomon, 2008) and young adults perceive sexual health to be among the most important health issues and one they may wish they could more capably discuss with romantic partners (Hoff et al., 2003).

Two structural equation models tested the ability of the TMIM to predict sexual health information seeking from romantic partners and mediated information channels. Specifically, the first model tested the ability of the TMIM to predict three interpersonal information management strategies (direct information seeking, indirect information seeking, information avoidance). The second model mirrored the first except an additional path was added to capture sexual health information seeking from mediated information channels. The models proved good fits for the

data. The performance of the TMIM is discussed in the next two sections. The first section considers the performance of the full TMIM model with a focus on information management within the context of one's romantic partner. The second section focuses on the addition of a mediated information channel to the TMIM.

5.2.1 Sexual Health Information Seeking from Romantic Partners

Results from the current study provide generally positive support for the TMIM as a framework with which to understand how individuals manage uncertainty about the sexual health of romantic partners. Starting from the beginning of the theoretical model, uncertainty discrepancy was positively associated with anxiety (H1). Specifically, higher uncertainty discrepancy about the sexual health of romantic partners was positively related to anxiety about the gap between perceived and desired uncertainty. Despite expansion of the theory to account for a wider range of uncertainty discrepancy-related emotions (Fowler & Afifi, 2009), this finding lends support to the continued exploration of anxiety as an emotion that may stem from uncertainty discrepancy.

Anxiety, as expected, was negatively related to outcome expectancies (H2a) and to efficacy (H2b), which was consistent with previous applications of the TMIM that applied the framework within the context of sexual health information seeking (Afifi & Weiner, 2006; Dillow & LaBelle, 2014). Specifically, greater anxiety about the uncertainty discrepancy of the sexual health of a romantic partner was inversely related to individuals' efficacy to obtain sexual health information from romantic partners and to their outcome expectancies of seeking sexual health information from romantic partners. Notably, the relationship between anxiety and efficacy was more robust than the relationship between anxiety and outcome expectancies. This

suggests that individuals' anxiety about their uncertainty discrepancy in regard to the sexual health of romantic partners may be particularly likely to affect perceived efficacy.

As proposed by the TMIM (Afifi & Weiner, 2004), outcome expectancies was positively related to efficacy (H3), such that individuals who expected more positive outcomes to ensue from asking romantic partners about their sexual health experienced greater perceived efficacy to obtain this information from partners and to cope with related outcomes. This finding lends further support for the importance of the outcome expectancy construct as a determinant of the information management strategies an individual ultimately chooses to adopt. Specifically, individuals who expect negative outcomes to arise from seeking sexual health information from romantic partners may experience lower efficacy and thus be less likely to attempt to seek information directly. Conversely, individuals who expect positive or favorable outcomes to arise from direct information seeking may experience greater efficacy and thus be more likely to seek sexual health information from romantic partners.

In regard to efficacy, the TMIM conceptualizes efficacy as consisting of three components: communication efficacy, target efficacy, and coping efficacy (Afifi & Weiner, 2004). The current study sought to create a latent efficacy construct using the aforementioned three components. In the models tested, communication and target efficacy each significantly contributed to the variance in the latent efficacy construct. However, consistent with some previous applications of the TMIM (e.g., Afifi & Weiner, 2006; Dillow & LaBelle, 2014; Rauscher & Hesse, 2014), coping efficacy did not operate as expected. Specifically, coping efficacy failed to account for a significant portion of the variance in the latent efficacy construct in either model. Scholars have suggested that improving the fit between how the construct is conceptualized and operationalized could improve coping efficacy's contribution to the model

(Afifi & Weiner, 2006; Dillow & LaBelle, 2014). In regard to the specific topic of this study, the coping efficacy construct was measured with six items that asked participants to consider how well they believed they would cope with negative hypothetical scenarios (e.g., the knowledge their partner has an STI). Because upwards of 97% of participants in the current study did not believe their partner had an STI and most expressed certainty about this belief, the coping efficacy measure may not have operated as expected because participants did not perceive the need to cope as personally relevant.

Despite the shortcomings of coping efficacy, the latent efficacy construct still proved to be a fairly reliable predictor of the three interpersonal information management strategies for which participants adopted between the two surveys. Specifically, the TMIM proposes that efficacy will be positively related to direct information seeking (Afifi & Weiner, 2004). Thus, greater efficacy to obtain sexual health information from romantic partners was hypothesized to be positively related to direct information seeking (H4). This hypothesis was supported, which is particularly encouraging considering the brief time between the two surveys.

The TMIM proposes that efficacy is negatively related to indirect information seeking. Although the negative relationship between efficacy and indirect information seeking (H5) was non-significant in the current study, efficacy has been found to have a strong negative relationship with indirect information seeking in previous applications of the TMIM model (e.g., Dillow & LaBelle, 2014; Rosenberg, 2014) and should thus continue to be incorporated in applications of the theory. Because the TMIM suggests efficacy is positively related to direct information seeking (Afifi & Weiner, 2004), it stands to reason that efficacy would be negatively related to indirect information seeking. That is, individuals with a greater sense of efficacy to obtain information from a specific individual about an issue they perceive to be important should

be expected to be less likely to let the situation unfold naturally (i.e., not make an active, direct effort to obtain desired information). Explanations for the reason this hypothesis was not supported are considered in the limitations sections.

The hypothesis that efficacy would be negatively related to information avoidance was supported (H6). The path from efficacy to information avoidance was the strongest among the three interpersonal information management strategies. This is perhaps to be expected, as someone who was content with their knowledge of their partner's sexual health at T1 may not have felt the need to seek additional information in the three weeks between the two surveys; however, that same individual would be unlikely to go out of his or her way to avoid the issue.

In addition to the aforementioned hypotheses that examined interpersonal information management strategies, this study sought to examine the extent to which the TMIM could account for sexual health information seeking from the media. The next section discusses the results and implications of the attempt to expand the TMIM.

5.2.2 Sexual Health Information Seeking from Mediated Channels

The current study provides some support for adding a measure of issue-related information seeking from mediated information channels to the TMIM (H7). When the original TMIM model was augmented with a measure of mediated information seeking, the model proved a good fit for the data. In the model that added a mediated information seeking measure to the three interpersonal information management strategies, efficacy to obtain sexual health information from one's romantic partner (as measured at T1) and actual mediated information seeking behavior (as measured at T2) exhibited the expected negative relationship and approached but failed to reach statistical significance ($p = .07$). This suggests that some individuals who have lower efficacy to obtain sexual health information from romantic partners

may turn to mediated channels for sexual health information. Mediated information seeking exhibited statistically significant negative correlations with two of the three efficacy components (communication efficacy and target efficacy). This suggests that lower perceived efficacy to communicate with partners about their sexual health (i.e., communication efficacy) and less confidence that partners would be able and willing to provide the desired information (i.e., target efficacy) may lead an individual to seek sexual health information from mediated information channels rather than from their partner.

Sexual health information seeking via the media was fairly common with more than three-fourths ($N = 156$, 78%) of participants at T2 reporting they sought sexual health information from the Internet between T1 and T2 and roughly half of participants suggesting they sought sexual health information from each of the following mediums: social media (55%), television (56%), magazines/newspapers (56%), and books (52%). The frequency with which sexual health information was sought from mediated channels is particularly notable because the measure captured only the time from T1-T2 (about 3-4 weeks). Asking participants to reflect on their history of using the media to learn about sexual health issues likely would have yielded even higher numbers. Indeed, recent research suggests young adults perceive media as an important and viable channel for accessing sexual health information (e.g., Khurana & Bleakley, 2015; Lim et al., 2014).

It should be reiterated that the current study measured mediated information seeking about *general* sexual health issues rather than the use of mediated channels and new communication technologies to communicate with (and to learn about the sexual health of) one's romantic partner. Whereas one can seek sexual health information from the media – for example, by reading an informative article on the Centers for Disease Control website – the information

will, of course, not be specific to the sexual health and history of one's romantic partner. Although seeking sexual health information from mediated information channels will not provide partner-specific information, the knowledge accrued from this behavior could contribute to partner communication intentions (and behaviors) via increasing perceptions of issue importance, desired knowledge, or perceived efficacy, for example. Moreover, some vital sexual health information (e.g., STI screening recommendations) may be readily available via mediated information channels, whereas interpersonal sources (e.g., romantic partners, friends) may be unable to provide this information.

Although open, honest partner communication about sexual health issues remains the best way to learn about the sexual health and history of one's partner (assuming individuals' knowledge of their own sexual health is correct and they are willing to share), understanding how mediated channels can, at the very least, augment partner communication and provide individuals with essential sexual health information remains a worthwhile endeavor. Ideally individuals would seek sexual health information from multiple channels. For example, individuals would ask romantic partners about their sexual histories, while also using reputable mediated information channels and other interpersonal sources (e.g., healthcare professionals) to augment their knowledge of sexual health issues.

The current study was concerned with active efforts to seek sexual health information from romantic partners and the media, yet individuals also experience incidental exposure to health information, which occurs in "a person's normal flow of information" (Shim et al., 2006, p. 158). For example, incidental exposure to sexual health information may occur when an individual is around friends who start discussing sexual health issues or when an individual stumbles upon a television show with sexual health content. Young adults' extensive mass media

usage, perceptions of the media as a useful source of sexual health information, and the widespread prevalence of sex in media and advertisements makes exposure – active and incidental – to sexual health content in the media likely.

Mediated campaigns and storylines built into entertainment programming, public service announcements, and websites of respectable health organizations all offer channels with which to address misconceptions about STI prevalence, increase perceptions of susceptibility, and provide an impetus for individuals to learn about the sexual health of partners. For example, research has demonstrated that mass media campaigns have the potential to increase safe sex behaviors and perceived outcome expectancies of condom use (e.g., Keller & Brown, 2002; Romer et al., 2009; Zimmerman et al., 2007) and that exposure to safe sex mediated campaigns can prompt interpersonal discussions (Helme et al., 2011). In addition, as previously discussed, the media offers health campaign planners platforms via which desirable behaviors can be modeled. For example, an episode of the popular television show *Friends* had a storyline in which the effectiveness of condoms was a central storyline. Many adolescent viewers recalled how condoms were depicted in the episode and some subsequently discussed condom efficacy with an adult (Collins, Elliott, Berry, Kanouse, & Hunter, 2003).

Whereas the aforementioned discussion highlighted (1) the impressive performance of the full TMIM model to predict information management in regard to the sexual health of romantic partners, and (2) the potential of the TMIM to account for mediated information seeking, the current study also tested several mediation hypotheses in order to ascertain a more detailed understanding of the information management process.

5.3 TMIM-based Mediation Predictions

This study tested three mediation hypotheses suggested by the TMIM and a subsequent application of the theory. The implications of each are discussed in turn. The first mediation hypothesis suggested anxiety would mediate the relationship between uncertainty discrepancy and efficacy (Afifi & Weiner, 2004). This proposition was supported (H8). The effect of uncertainty discrepancy on efficacy became non-significant once anxiety was added as a mediator. As expected, uncertainty discrepancy was positively associated with anxiety, which in turn was negatively related to efficacy. This finding reiterates the importance of anxiety in establishing the relationship between uncertainty discrepancy and efficacy and lends support to the idea that “individuals are motivated to manage the physiological reaction of anxiety, rather than the cognitive uncertainty-discrepancy state that precedes it” (Afifi & Weiner, 2004, p. 174). This finding also has important implications in regard to examining the emotions that stem from uncertainty discrepancy and their relationship to efficacy. Specifically, identifying the emotions that mediate the relationship between uncertainty discrepancy and efficacy across different health contexts as well as whether the emotions positively or negatively relate to efficacy should be considerations for health professionals who wish to understand and/or promote active health information seeking.

Second, the TMIM suggests anxiety mediates the relationship between uncertainty discrepancy and outcome expectancies (Afifi & Weiner, 2004). The current study did not find support for this proposition (H9). Specifically, uncertainty discrepancy (IV) and outcome expectancies (DV) did not exhibit a statistically significant correlation. Although the theory proposes anxiety will mediate the relationship between uncertainty discrepancy and outcome

expectancies, some applications of the TMIM that have failed to find the expected relationship (e.g., Afifi & Afifi, 2009a).

Third, anxiety was found to mediate the relationship between uncertainty discrepancy and information seeking intent for individuals who had a romantic partner at T1 (H10). This suggests that the causal relationship between uncertainty discrepancy and information seeking intent exists due to the intermediate variable, anxiety. Uncertainty discrepancy was positively associated with anxiety, which in turn was positively related to individuals' intentions to seek information from current romantic partners, which was consistent with previous research (Wong, 2014). This finding could, in part, suggest that participants did in fact intend to reduce their uncertainty about their partner's sexual health in the future and, for whatever reason (e.g., newness of relationship), simply had not yet done so. For example, someone in a new dating relationship may know little about their partner's sexual health and history; however, the issue may gain relevance as the relationship deepens. Another possible explanation is that this finding could be indicative of an attempt at self-reassurance, as individuals who experience uncertainty discrepancy-related anxiety about the sexual health of a romantic partner may take comfort in the idea that they intend to raise sexual health issues with partners at some point in the future. Comparable to the adage, "I'll start tomorrow" said by someone who has planned to embark on a new diet plan or exercise routine, but has not yet done so, individuals who experience anxiety about the sexual health of a romantic partner may feel better if they persuade themselves they will at some point seek this information.

To this point, all discussions of anxiety have been concerned with one source of anxiety – that which stems from uncertainty discrepancy. However, the final portion of this project examined a different potential source of anxiety – that which stems from the issue itself.

Specifically, as is next discussed, the current project examined the relationship between anxiety about contracting an STI and information seeking intentions.

5.4 Issue-related Anxiety

This study found mixed support for the hypothesis that issue-related anxiety (i.e., anxiety about contracting an STI) would positively predict intent to seek sexual health information from romantic partners (H11). In support of previous research that examined the relationship these constructs (Wong, 2014), the current study found that anxiety about contracting an STI was positively related to individuals' intent to seek sexual health information from partners after controlling for the TMIM variables. This is important because, as Wong (2014) notes, “. . . discrepancy-related anxiety does a good job of accounting for the cognitive motivation some people may have to conduct an information search, [but] it does not account for the emotional motivation that drives people to seek information” (p. 93). Put another way, uncertainty discrepancy is able to explain the dissonance that may exist between perceived uncertainty and desired uncertainty, but anxiety about the issue in and of itself may also play an important role in information seeking intentions. In the context of the current study, for example, an individual could have relatively large uncertainty discrepancy about the sexual health of one's partner, but if the issue is not one for which he or she experiences anxiety (or other emotions that influence information seeking intentions and behaviors), then the emotional motivation necessary to prompt information seeking may supersede the behavior.

To further examine the variance in information seeking intent for which issue-related anxiety uniquely accounted, the current study controlled for four additional variables (age, gender, whether participants were sexually active, extent to which sexual information was previously sought from partner) beyond the TMIM variables. After adding the additional co-

variates, issue-related anxiety was no longer a statistically significant predictor of information seeking intent, whereas gender, extent to which sexual health information was previously sought from partner, and uncertainty discrepancy-related anxiety were all statistically significant predictors of information seeking intent. This suggests that, although recent applications of the TMIM have expanded the type of uncertainty discrepancy related emotions explored in the TMIM (e.g., Fowler & Afifi, 2011), the scope of *issue-related* emotions (anxiety and otherwise) and their influence on information seeking intentions, independently and in conjunction with uncertainty discrepancy-related emotions, warrants further exploration. Within the content of the TMIM, the extent to which individuals' information seeking behaviors and intentions vary based on the sources from which their emotions originate (uncertainty discrepancy, the issue itself, or other possible sources) could have important practical implications for health communication message design.

5.5 Practical Considerations

Findings from this study offer a number of considerations for applied health communication professionals who wish to address the high prevalence of STIs among the young adult population, to encourage safe sex behaviors, to improve partner communication, or to encourage active information seeking about sexual health issues from interpersonal and mediated channels. Some of the more notable practical considerations to emerge from this project are discussed in the following three sections. The first section considers participants' perceptions of the importance of knowing about the sexual health of romantic partners. The second section discusses the extent to which individuals' perceived knowledge about the sexual health of their romantic partners is accurate and the implications this may have on sexual health information management and communication activities. The third section discusses participants' sexual

practices and STI screening histories with a focus on the individuals who are sexually active yet forego STI screening and/or do not always practice safe sex.

5.5.1 Issue Importance: The Sexual Health of Romantic Partners

Among the most encouraging findings to emerge from the current project is that participants largely perceived knowing about the sexual health and history of romantic partners to be an important issue. This suggests that although psychological or social hindrances, for example, may prevent or delay individuals from attempting to learn about the sexual health of romantic partners, individuals understand this knowledge is important. Thus, health communication professionals may be wise to focus their efforts primarily toward helping individuals overcome perceived barriers to sexual health information seeking and sexual communication rather than on raising awareness of the importance of doing so.

An interesting paradox exists in that young adults are often more concerned about sexual health issues than any other health issue and wish to know more about how to effectively communicate with sexual partners (Hoff et al., 2003), yet they may also perceive themselves to know more about intimate partners' sexual health than they actually do (Lo et al., 2009). This is problematic, in part, because if young adults overestimate their knowledge of a current or prospective partner's sexual health, this may supersede their perceived need and/or desire to communicate with romantic partners about sexual health issues even if they recognize the importance of this behavior.

5.5.2 Accuracy of Perceived Knowledge about Partner's Sexual Health

From a health communication standpoint, whether individuals' perceived certainty about the sexual health of romantic partners is comparable to their desired certainty is ideal only in so far as individuals perceive themselves as highly certain about a partner's sexual health and that

these perceptions are, in fact, accurate. Because research suggests individuals may underestimate their sexual risk and the perceived severity of STIs as well as overestimate their knowledge of partners' sexual health (e.g., Afifi & Weiner, 2006; Ethier et al., 2003; Hickey & Cleland, 2013; Ingledue et al., 2004), perceived knowledge of (or certainty about) the sexual health of a romantic partner may not reflect actual knowledge and certainty. As a result, individuals who may otherwise be willing and motivated to engage partners in sexual health communication may forego doing so because they perceive themselves to know more about the sexual health of romantic partners than they actually do. Adding to the possibility that incongruity may exist between perceived and actual knowledge is the fact that young adults are not always honest about their number of past sexual partners (Horan, in press), which suggests, at least in some cases, that individuals unknowingly use incomplete and inaccurate information to form judgments about the sexual health and history of romantic partners.

Results suggest that while individuals largely believe knowing about the sexual health of romantic partners to be important, some variability exists in individuals' uncertainty discrepancy about the sexual health of romantic partners. Specifically, about 53% of participants reported their knowledge about the sexual health of their partner matches their desired knowledge, whereas about 39% wished they knew more about the sexual health of their partner, and about 8% knew more about the sexual health of their partner than they desired. Each of these three groups are briefly discussed in turn.

In regard to individuals whose perceived certainty about the sexual health of romantic partners matched their desired certainty, health communication professionals should seek to identify instances in which people who perceive themselves to know everything about their partner's sexual history are, in fact, correct about the depth and breadth of their knowledge. For

individuals who believe they do not know everything about their partner's sexual history, but are comfortable with this uncertainty, scholars should seek to understand and address the reasons that these individuals do not want to know more about the sexual health and history of partners. Some scholars have found young adults may not bring up sexual health issues with partners because they underestimate the possible consequences of STIs and their individual susceptibility (e.g., de Visser, 2005; Ethier et al., 2003). Thus, health communication campaigns may consider educating these individuals about their actual risk of STIs and the potential consequences of acquiring an STI.

In the current study, nearly 4 in 10 participants desired more knowledge about the sexual health of their romantic partners. The challenge becomes delineating between those individuals who, to date, have foregone seeking sexual health information from partners and those who have attempted to do so, but been unsatisfied with the outcomes (and thus desire additional information). Understanding the main deterrents to sexual health information seeking among this group would provide insights into intervention opportunities, whereas investigating perceived failures of partner communication (i.e., not obtaining the information one desires) could yield knowledge into how to improve partner communication – whether that be from the perspective of the information-seeker or the information-provider.

Finally, in regard to the group who perceive themselves to have more knowledge about the sexual health of romantic partners than they desire, Afifi and Weiner (2006) note these individuals “would be missed by public health efforts guided toward decreasing uncertainty . . . [and] may also be especially likely to engage in risky sexual behavior” (p. 49). Health professionals must thus be aware of this segment of the population and the unique challenges

that may present when attempting to provide education about the importance of partner communication and strategies to engage in this behavior.

5.5.3 Sexual Health Behaviors and STI Screening Histories

About 3% of participants in this study believed their partner had an STI, yet recent research suggests actual STI prevalence among college students and young adults may be higher (e.g., Dunne et al., 2007; James, Simpson, & Chamberlain, 2008). STIs may be particularly prevalent in certain subsamples of young adults. For example, Miller et al. (2004) found chlamydia and gonorrhea infections had the highest prevalence among young adults who were African-American and who lived in the South, as compared to young adults of other races/ethnicities and living in other geographic regions, respectively. That the sample in the current study was comprised of about 50% African-Americans and was drawn from a university in the South suggests STI infections among the sample in the current study could be greater than that of other races/ethnicities in other geographic locations across the U.S. Again, if individuals perceive that they are not at risk for STI acquisition – or other potentially negative tangible and intangible consequences stemming from sexual behaviors – they may be disinclined to actively engage romantic partners in even the most fundamental sexual communication discussions. In regard to the sexual health and histories of study participants, more than one-third ($N = 121$, 38.7%) of the 313 participants who completed the first survey had never been tested for STIs despite the fact that about three-fourths ($N = 230$, 73.5%) were currently sexually active with their partner. When considered alongside the fact that participants in this study were not asked to provide additional information about their sexual histories (e.g., number of previous partners), we can surmise that it is possible that a relatively sizable portion of the sample who have been sexually active have elected to forego STI screening. This is consistent with past research that

suggests sexually active young adults may not be screened for STIs (Cunningham et al., 2009). For young adults, the CDC (2014c) offers STI screening recommendations, which vary by factors such as gender, age, and sexual activity (e.g., the CDC recommends all sexually active women younger than 25 be screened for chlamydia and gonorrhea annually). Previous research has identified a host of reasons that young adults may not pursue STI screening, which range from psychosocial factors to perceived environmental barriers (e.g., Fortenberry et al., 2002; Tilson et al., 2004). Although the current study did not attempt to explore determinants of decisions to pursue (or not pursue) STI screening, this research does provide additional support for the need to target sexually active young adults with campaigns and interventions raise awareness of the importance of STI screening, inform young adults about screening recommendations, and/or reduce barriers to screening.

In the current study, all participants who were sexually active with their partner at T1 ($N = 230$) reported on the frequency with which they had engaged in safe sex over their entire history with the individual. About 45% of participants reported that they either “never” or “always” engaged in safe sex with the individual, whereas the other roughly 55% of participants provided responses that indicated inconsistent safe sex frequency with responses ranging from less than 10% of the time to more than 90% of the time. Consistently practicing (or not practicing) safe sex with a partner is perhaps easier to explain than the behavior of practicing safe sex on some occasions with the individual and not practicing safe sex on other occasions. Understanding the reasons an individual chooses to partake in safe sex with his or her partner irregularly has important implications for health communication professionals. For example, interventions that aim to promote contraceptive use may differ if inconsistent condom use is a product of availability/convenience, for example, as compared to whether contraceptive use

changes over the course of the relationship based on factors such as relationship length, partner trust, or as the result of partner communication. Though scholars have identified a host of psychosocial and attitudinal factors that contribute to young adults' decisions to practice or not practice safe sex (Cerwonka, Isbell, & Hansen, 2000; Higgins & Wang, 2015; Marston & King, 2006; Troth & Peterson, 2000), understanding how and why safe sex behaviors may be inconsistent over the course of a sexual relationship could provide insights that benefit applied communication campaigns that promote safe sex.

5.6 Limitations

Although the current study provides insight into the sexual communication beliefs and behaviors among a sample of college students, the ability of the TMIM to serve as a framework with which to predict information seeking within the context of sexual health, and the viability of influencing uncertainty discrepancy and anxiety with a health communication narrative, a number of methodological limitations related to the sample, measurement, and research design should be noted. Each are discussed in turn.

5.6.1 Limitations of Sample

The size of the sample used to address the hypotheses was relatively small and thus did not allow for examination of differences across groups based on variables such as gender, race/ethnicity, and sexual orientation. In addition, whereas this study emphasized the importance of understanding how young adults communicate about sexual health issues, some participants were older than traditional college-aged students and may thus differ extensively from young adults in their sexual behaviors and across the TMIM constructs. In addition, the sample consisted exclusively of undergraduate students from one public university in an urban setting

and thus findings are not generalizable. Replicating this study in other college populations might yield different results.

5.6.2 *Limitations of Measures*

Concerning construct measurement, some constructs could have been captured more effectively, which may have improved our understanding of them both uniquely and in relation to other TMIM constructs. For example, indirect information seeking, as measured at T2, demonstrated disappointingly low reliability as a 3-item measure. Even after dropping the most problematic item, the measure was barely adequate. As noted, the construct, which sought to capture the extent to which individuals who reported having a partner at T1 let sexual health issues “unfold naturally” in partner communication between T1 and T2, may have suffered from the relatively short time between the two surveys and variance in participants’ interpretation of the construct. A more comprehensive measure of indirect information seeking such as the one Dillow and LaBelle (2014) used in their study of communication about STI testing may have more effectively captured the construct. Also, as it relates to measurement, some of the items could have been more precisely operationalized. As an example, one item asked participants how much information they have sought from their romantic partners about their STI risk. The scale had seven points that ranged from “no information” to “a lot of information.” More specific measures that provided a numeric range (e.g., 1-3 occasions) may have increased the likelihood participants conceptualized items similarly.

5.6.3 *Limitations of Research Design*

Regarding limitations of the research design, additional information not obtained from participants (e.g., relationship length, number of previous sexual partners) may have yielded important insights into individuals’ propensity to seek sexual health information and the

relationship between TMIM variables. In addition, considering personality characteristics that might help explain sexual health information seeking, surveying both partners, and oversampling sexual minorities to examine differences in heterosexual and homosexual couples may have contributed additional insights. Finally, as noted, the two surveys were separated by about three weeks. A longer period may have provided participants additional time to seek sexual health information from partners and mediated information channels.

5.7 Future Research

The future research section is comprised of three parts. The first part discusses areas of future research in regard to sexual communication and sexual health information seeking. The second part considers ways in which the TMIM may be further refined to improve the model's predictive ability. The third part discusses potential lines of research in regard to the design, implementation, and evaluation of health messages intended to influence uncertainty discrepancy and/or emotion.

5.7.1 *Sexual communication*

An abundance of opportunities exist for growth in applied knowledge about sexual communication and sexual health information seeking. Broadly speaking, there has been a relative dearth of research in interpersonal communication and sexual health (Manning, 2014). As others have stated, future research should investigate the dyadic nature of sexual health communication and sexual behavior and how characteristics of romantic relationships influences young adults' sexual decision-making such as contraceptive use (e.g., Gibbs, Manning, Longmore, & Giordano, 2014; Lefkowitz & Vasilenko, 2014).

The role of communication technologies within the context of romantic relationships warrants additional attention. Teenagers are initiating romantic relationships online

(Korchmaros, Ybarra, & Mitchell, 2015) and young adults already in relationships have been found to use different channels to communicate with romantic partners based on factors such as the perceived quality of their relationship (Morey, Gentzler, Creasy, Oberhauser, & Westerman, 2013). Examining how young adults' comfort to communicate about sexual health issues with romantic partners varies by channel could have important implications for campaigns that aim to promote partner communication.

Research has found that sexual minorities often have limited information resources to which they can turn and may find that traditional sexual education sources (e.g., schools) provide information that lacks personal relevance (e.g., Kubicek, Beyer, Weiss, Iverson, & Kipke, 2010; McDavitt & Mutchler, 2014). Understanding how to effectively reach sexual minorities with relevant sexual health information warrants further investigation. Related, research should continue to examine how underserved and minority populations differ in the information channels via which they prefer to learn about sexual health issues. For example, a recent study found Native American youths' preferred source of sexual health information was pamphlets (Rouner, Long, Bubar, Vernon, & Aungie, 2015), whereas a study comprised of primarily White and Asian college students found preferred sexual health information sources to be family doctors, gynecologists, and the Internet (Sandfort & Pleasant, 2009).

Scholars could also examine how individuals in monogamous relationships compare with their romantic partners with regard to issues such as ideal and extant sexual communication practices and perceived knowledge of the sexual health of one's partner. Some research has explored the extent to which dating partners agree about their communication about sexual health issues such as HIV/AIDS (e.g., Powell & Segrin, 2004), but additional research could continue to examine how closely romantic partners align with one another along sexual values

and perceptions of communication frequency and scope. In a similar vein, examining the extent to which perceived knowledge of the sexual health of one's partner is accurate warrants additional attention and could be investigated via paired sampled tests.

Our understanding of sexual health information seeking would also be enhanced by research that examines the extent to which intentions to seek sexual health information from romantic partners leads to actual information seeking behaviors. Longitudinal studies, for example, could measure information seeking intent in new dating relationships and follow-up with participants to capture actual information management behaviors. Related to this, health communication scholars should seek to identify the relationship “benchmarks” or situational contexts in which sexual communication occurs. In the context of the current study, for example, participants may have reported that they sought “a lot” of information about the sexual health of a romantic partner; however, whether this information was sought before ever engaging in sexual behaviors with the target individual or afterward would, of course, have potentially important implications for individuals' health.

5.7.2 Theoretical advancement

In regard to theoretical refinement and advancement, in recent years some applications of the TMIM have replaced anxiety with a wider scope of emotions. Examining the extent to which uncertainty discrepancy about different health issues produces negative (or positive) emotions and their subsequent influence on cognitive assessments could improve the predictive power of the model. While uncertainty discrepancy about an issue of perceived importance should, of course, be expected to generate more than one emotion in an individual, future research should seek to understand whether specific uncertainty discrepancy-related emotions present in tandem and how the presence of one emotion influences the presence or magnitude of others. Related,

future research should examine which emotions are most influential in the information management process (and how this might vary by issue context and perceived issue valence).

Some recent applications of the TMIM model have added additional constructs to examine how they impact the model. For example, in a study of college students' sexual health information seeking from friends, Chang (2014) added a measure of perceived vulnerability and suggested this construct may play a "substantial role" in information seeking behavior and should thus be considered in future applications of the TMIM. In line with examining whether (and how) additional constructs could improve the TMIM, scholars might consider examining whether there is a place for self-disclosure in the model, especially for issues perceived as stigmatized or sensitive. Self-disclosure is the act of deliberately revealing particular information about oneself to another person (Greene, Derlega, & Mathews, 2006). When an individual asks a partner to reveal personal information, the individual opens himself or herself up to being asked the same questions. Within the context of sexual communication, self-disclosure has been found to be closely related to many of the variables in the TMIM including emotion, outcome expectancies, and perceived efficacy. For example, the thought of having to disclose an STI to a current or former partner may lead to emotions such as anxiety, fear, or shame (e.g., Duncan, Hart, Scoular, & Bigrigg, 2001; Kahn et al., 2005; Newton & McCabe, 2008; Perrin et al., 2006). In addition, self-efficacy to disclose a positive STI diagnoses makes actual self-disclosure more likely (Fortenberry, Brizendine, Katz, & Orr, 2002).

Future applications of the TMIM should continue to examine whether the predictive power of the model is improved with the inclusion of issue-related anxiety. The current project and a study by Wong (2014) operationalized issue-related anxiety with a perceived susceptibility measure; however, future research may benefit from expanding the scope of how this construct is

operationalized. The Health Belief Model (HBM; Rosenstock, 1974) may offer some insight. Whereas outcome expectancies and efficacy play an important role in both the HBM and the TMIM, the HBM also emphasizes the role of perceived susceptibility and perceived severity (Maiman & Becker, 1974; Rosenstock, 1974, 1990). Within the context of sexual health communication, incorporating a measure of perceived severity of STIs into a measurement of issue-related anxiety may be beneficial. Put another way, STI-related anxiety may differ for two individuals who have relatively similar perceptions about their perceived likelihood of contracting STIs, but one believes the perceived severity of contracting STIs would be of major consequence, whereas the other believes the severity of contracting STIs would be relatively inconsequential.

The current study was the first to examine whether the TMIM can be expanded to include general issue-related information seeking from mediated channels. Importantly, this study measured efficacy within the context of interpersonal communication (which is consistent with past applications of the TMIM) and found that individuals who had greater efficacy to obtain sexual health information directly from romantic partners were less likely to turn to the media for sexual health information. Future research should examine whether (and the extent to which) efficacy to obtain and cope with desired information via an information search *from the media* relates to efficacy to obtain and cope with desired information via an information search from the target individual and whether this influences information management strategies. Examining both interpersonal and mediated information sources is important, in part, because information management, the primary means by which someone may attempt to either adjust or maintain one's level of uncertainty, often occurs across both contexts (Brashers, 2001).

To date, most applications of the TMIM have not asked individuals to consider their outcome expectancies and self-efficacy for an information search across different communication channels. Although individuals may be most likely to conceptualize (potential) communication with a target individual as occurring within the context of face-to-face interaction, interpersonal communication can and does occur across myriad contexts and should thus be explored as such. In other words, the outcome expectancies an individual may perceive about a hypothetical face-to-face conversation with a target individual may differ from the outcome expectancies the individual would perceive about communicating via a phone call, e-mail, or text message, for example. Indeed, individuals may communicate with sexual partners via text message as a means to seek information or reduce uncertainty about sexual preferences (Manning, 2014). Tokunaga and Gustafson (2014) note that although the TMIM has been predominantly used within the context of understanding face-to-face communication, “in a world that is becoming increasingly depending on the Internet as a tool for communication . . . the Internet cannot be ignored as a viable and often desirable means of interpersonal information acquisition” (p. 1034).

Finally, applications of the TMIM often focus exclusively on the information seeker; however, the TMIM acknowledges that the information provider (i.e., individual in possession of the information) plays an integral role in the information management process and that within a single interaction, the information seeker may become the information provider and vice versa (Afifi & Weiner, 2004). Future applications of the TMIM should thus consider the role of the information provider in the larger communication interaction.

5.7.3 *Health messages to influence uncertainty discrepancy and emotion*

The sexual health narrative used in the current study did not influence uncertainty discrepancy and anxiety as was intended. Future research should explore how uncertainty discrepancy and/or the subsequent emotions experienced as a result of uncertainty discrepancy can be influenced via health messages as a means to promote health information seeking. Research into prompting uncertainty discrepancy and emotion could be combined with the recent shift in TMIM research toward examining the breadth of emotions stemming from uncertainty discrepancy. Specifically, studies could examine the effect that inducing uncertainty discrepancy has on eliciting positive and negative emotions and the ensuing cognitive assessments, as well as the extent to which inducing uncertainty discrepancy influences the scope and magnitude of emotional responses.

The narrative in the current study sought to portray sexual communication as normative and highlighted some of the consequences of STIs. This approach may have been more likely to elicit negative emotions (the current study focused on anxiety) than to elicit positive emotions. A narrative that implicitly and/or explicitly focuses on the positive outcomes of seeking sexual health information from a romantic partner (e.g., rather than raising issues such as STI consequences) may be more likely to produce positive emotions. Future efforts may wish to induce emotions thought to lead to positive outcome expectancies and increased efficacy.

Health messages that attempt to induce some type of cognitive, attitudinal, or behavioral response often adopt a gain-frame in which messages highlight the benefits of engaging in a particular action or a loss-frame in which messages focus on the consequences of not engaging in the behavior (Gallagher & Updegraff, 2012). An example of a gain-frame message about safe sex is “Using a condom during sexual intercourse may protect you from STIs”, whereas a loss-

frame message might say, “Not using a condom during sexual intercourse puts you at greater risk of STIs.” The type of emotions triggered by exposure to gain- and loss-framed health messages remains underexplored (Riet, Ruiters, Werrij, Candel, & De Vries, 2010). However, the limited amount of research on this topic suggests gain-framed emotions lead to more positive emotions than do loss-framed messages, whereas loss-framed messages are more likely to elicit negative emotions (Riet et al., 2010). For example, in their study of the influence that three health-related messages (skin cancer, obesity, influenza) have on emotion, Shen and Dillard (2007) found gain-framed health messages stimulated positively valenced emotions (e.g., happiness, cheerfulness), whereas loss-framed messages stimulated negative emotions (e.g., disgust, anger, fear).

The current study used a fictional narrative as a means to attempt to influence uncertainty discrepancy, but approaches grounded in non-fiction storytelling may offer additional strategies with which to influence uncertainty discrepancy, emotions, and/or cognitive assessments. Indeed, the use of narrative communication as a means with which to promote health behavioral change is well-established (see Gray, 2009; Hinyard & Kreuter, 2007). For example, Fisher’s (1987) narrative paradigm suggests that when people hear another person’s story, their understanding of the world is improved. Importantly, narrative stories must be construed by individuals as consistent, coherent, and truthful (Edgar & Volkman, 2012). A variety of health projects have incorporated narrative storytelling, including a campaign in which adolescents shared personal substance abuse narratives, which were incorporated into middle schools’ substance abuse programs (Hecht & Miller-Day, 2007). In another study, smokers who read news stories with an exemplar experienced increased narrative engagement as compared to smokers who read an article without an exemplar and reported themselves as more likely to report greater smoking cessation intentions (Kim, Bigman, Leader, Lerman, & Cappella, 2012).

Finally, whereas this study used a written narrative that portrayed young adult sexual communication as a normative behavior, myriad alternative approaches exist. For example, entertainment-education often incorporates health messages into entertainment media in an attempt to influence attitudes and behaviors, in part, by creating storylines and characters to which viewers can identify and to whom they perceive themselves as similar (Moyer-Gusé, 2008). In addition, although this study sought to examine whether uncertainty discrepancy could be influenced, entertainment-education may offer a strategy to directly influence other constructs of the TMIM. For example, with roots in social cognitive theory (Bandura, 1989), entertainment-education is premised on the idea that when someone observes an individual they perceive as similar to themselves successfully perform a task, the individual may perceive his or herself as more efficacious to carry out the task (Vaughan, 2000). Within the context of the TMIM, efficacy is thought to influence an individual's propensity to seek information from a target individual. Moreover, the TMIM provides several efficacy components – communication, coping, target – for which an entertainment-education program may seek to address.

5.8 Conclusion

The current study (1) examined the ability of the TMIM to predict sexual health information seeking from romantic partners, (2) tested an expanded TMIM model that incorporated a measure of sexual health information seeking via mediated channels, and (3) investigated whether a sexual health narrative could affect uncertainty discrepancy and anxiety in the context of the sexual health of individuals' romantic partners.

The TMIM proved a useful framework with which to ground this study and understand sexual health information seeking behaviors. Support was found for many of the theory's hypothesized relationships, which is encouraging for the model's utility as a framework with

which to predict interpersonal information seeking. Specifically, uncertainty discrepancy was positively associated with anxiety, which in turn was negatively related to both cognitive assessments: efficacy and outcome expectancies. In addition, as expected, outcome expectancies was positively related to efficacy, which in turn was positively related to direct information seeking and information avoidance.

Of particular note to the current study, the addition of a measure of mediated information seeking to the TMIM model yielded encouraging results. The relationship between efficacy and mediated information seeking only approached significance, yet demonstrated the expected directional relationship and thus offers a potentially promising line of research. Specifically, as expected, efficacy to obtain sexual health information from one's partner was negatively related to sexual health information seeking from the media. This suggests that individuals who believe they can obtain sexual health information from romantic partners may be less likely to turn to the media for sexual health information, whereas individuals who perceive themselves as less efficacious in obtaining information from partners may be more likely to seek sexual health information from the media.

In regard to the attempt to influence uncertainty discrepancy and anxiety, the sexual health narrative did not have the intended effect, as participants in the experimental and control groups did not differ along the aforementioned variables. However, individuals who read the sexual health narrative and related to the main character experienced higher uncertainty discrepancy and anxiety, on average, as compared to individuals who read the sexual health narrative and did not relate to the main character.

Finally, the current study suggests that college students generally believe knowing about the sexual health and history of romantic partners is important, yet many may overestimate their

knowledge about their partner's sexual health. This suggests the need to further educate this population about the actual prevalence of STIs, to provide the necessary motivation and confidence to ask romantic partners about their sexual health and history, and to encourage sexual health information seeking from reputable mediated information sources as well as interpersonal sources such as physicians.

REFERENCES

- Acock, A. C. (2005). Working with missing values. *Journal of Marriage and Family*, 67(4), 1012-1028.
- Adelbert, J., Simpson, T., & Chamberlain, W. A. (2008). Chlamydia prevalence among college students: Reproductive and public health implications. *Sexually Transmitted Diseases*, 35(6), 529-532.
- Afifi, W. A., & Afifi, T. D. (2009a). Avoidance among adolescents in conversations about their parent's relationship: Applying the theory of motivated information management. *Journal of Social and Personal Relationships*, 26(4), 488-511.
- Afifi, W. A., & Afifi, T. D. (2009b). Introduction. In T. D. Afifi & W. A. Afifi (Eds.). *Uncertainty, information management and disclosure decisions: Theories and applications* (pp. 1-5). New York, NY: Routledge.
- Afifi, W. A., Dillow, M. R., & Morse, C. (2004). Examining predictors and consequences of information seeking in close relationships. *Personal Relationships*, 11(4), 429-449.
- Afifi, W. A., Morgan, S. E., Stephenson, M. T., Morse, C., Harrison, T., Reichert, T., & Long, S. D. (2006). Examining the decision to talk with family about organ donation: Applying the theory of motivated information management. *Communication Monographs*, 73(2), 188-215.
- Afifi, W. A., & Morse, C. R. (2009). Expanding the role of emotion in the theory of motivated information management. In T. D. Afifi & W. A. Afifi (Eds.). *Uncertainty, information management and disclosure decisions: Theories and applications* (pp. 87-105). New York, NY: Routledge.

- Afifi, W. A., & Weiner, J. L. (2004). Toward a theory of motivated information management. *Communication Theory, 14*(2), 167-190.
- Afifi, W. A., & Weiner, J. L. (2006). Seeking information about sexual health: Applying the theory of motivated information management. *Human Communication Research, 32*(1), 35-57.
- Agocha, V. B., & Cooper, M. L. (1999). Risk perceptions and safer-sex intentions: Does a partner's physical attractiveness undermine the use of risk relevant information? *Personality and Social Psychology Bulletin, 25*(6), 746-759.
- Amato, P. R., & Maynard, R. A. (2007). Decreasing nonmarital births and strengthening marriage to reduce poverty. *The Future of Children, 17*(2), 117-141.
- Ancheta, R., Hynes, C., & Shrier, L. A. (2005). Reproductive health education and sexual risk among high-risk female adolescents and young adults. *Journal of Pediatric and Adolescent Gynecology, 18*(2), 105-111.
- Aral, S. O. (2001). Sexually transmitted diseases: Magnitude, determinants, and consequences. *International Journal of STD & AIDS, 12*(4), 211-215.
- Babrow, A. S. (1992). Communication and problematic integration: Understanding diverging probability and value, ambiguity, ambivalence, and impossibility. *Communication Theory, 2*(2), 95-130.
- Babrow, A. S. (1995). Communication and problematic integration: Milan Kundera's "Lost Letters" in *The book of laughter and forgetting*. *Communication Monographs, 62*(4), 283-300.
- Babrow, A. S. (2001). Uncertainty, value, communication, and problem integration. *Journal of Communication, 51*(3), 553-573.

- Babrow, A. S., Hines, S. C., & Kasch, C. R. (2000). Managing uncertainty in illness explanation: An application of problematic integration theory. In B. B. Whaley (Ed.), *Explaining illness: Research, theory, and strategies* (pp. 41-67). Mahwah, NJ: Erlbaum.
- Babrow, A. S., Kasch, C. R., & Ford, L. A. (1998). The many meanings of uncertainty in illness: Toward a systematic accounting. *Health Communication, 10*(1), 1-23.
- Babrow, A. S., Kline, K. N., & Rawlins, W. K. (2005). Narrating problems and problematizing narratives: Linking problematic integration and narrative theory in telling stories about our health. In L. M. Harter, P. M. Japp, & C. Beck (Eds.), *Narratives, health, and healing: Communication theory, research, and practice* (pp. 31-59). Mahwah, NJ: Erlbaum.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*(9), 1175-1184.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Barnack-Tavlaris, J. L., Reddy, D. M., & Ports, K. (2011). Psychological adjustment among women living with genital herpes. *Journal of Health Psychology, 16*(1), 12-21.
- Baron, R. M., & Kenny, E. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.
- Barrett, P. (2007). Structural equation modeling: Adjusting model fit. *Personality and Individual Differences, 42*(5), 815-824.
- Barth, K. R., Cook, R. L., Downs, J. S., Switzer, G. E., & Fischhoff, B. (2002). Social stigma and negative consequences: Factors that influence college students' decisions to seek

- testing for sexually transmitted infections. *Journal of American College Health*, 50(4), 153-159.
- Basch, C. E. (2011). Teen pregnancy and the achievement gap among urban minority youth. *Journal of School Health*, 81(10), 614-618.
- Benotsch, E. G., Snipes, D. J., Martin, A. M., & Bull. S. S. (2013). Sexting, substance use, and sexual risk behavior in young adults. *Journal of Adolescent Health*, 52(3), 307-313.
- Berger, C. R. (1979). Beyond initial interaction. In H. Giles & R. St. Clair (Eds.), *Language and social psychology* (pp. 122-144). Oxford, UK: Blackwell.
- Berger, C. R. (1995). Inscrutable goals, uncertain plans, and the production of communicative action. In C. R. Berger & M. Burgoon (Eds.), *Communication and social influence processes* (pp. 1-28). East Lansing, MI: Michigan State University Press.
- Berger, C. R., & Bradac, J. J. (1982). *Language and social knowledge: Uncertainty in interpersonal relationships*. London, UK: Edward Arnold.
- Berger, C. R., & Calabrese, R. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research*, 1(2), 99-112.
- Berger, C. R., & Kellermann, K. (1994) Acquiring social information. In J. A. Daly & J. M. Wiemann (Eds.), *Strategic interpersonal communication* (pp. 1-30). Hillsdale, NJ: Erlbaum.
- Boies, S. C. (2002). University students' uses of and reactions to online sexual information and entertainment: Links to online and offline sexual behavior. *The Canadian Journal of Human Sexuality*, 11(2), 77-90.

- Bradac, J. J. (2001). Theory comparison: Uncertainty reduction, problematic integration, uncertainty management, and other curious constructs. *Journal of Communication, 51*(3), 456-476.
- Braithwaite, D. O., & Baxter, L. A. (2008). Introduction: Meta-theory and theory in interpersonal communication research. In L. A. Baxter & D. O. Braithwaite (Eds.), *Engaging theories in interpersonal communication: Multiple perspectives* (pp. 1-18). Thousand Oaks, CA: Sage.
- Brashers, D. E. (2001). Communication and uncertainty management. *Journal of Communication, 51*(3), 477-497.
- Brashers, D. E. (2007). A theory of communication and uncertainty management. In B. B. Whaley & W. Samter (Eds.), *Explaining communication: Contemporary theories and exemplars* (pp. 223-242). Mahwah, NJ: Erlbaum.
- Brashers, D. E., Goldsmith, D. J., & Hsieh, E. (2002). Information seeking and avoiding in health contexts. *Human Communication Research, 28*(2), 258-271.
- Brashers, D. E., Neidig, J. L., Haas, S. M., Dobbs, L. K., Cardillo, L. W., & Russell, J. A. (2000). Communication in the management of uncertainty: The case of persons living with HIV or AIDS. *Communication Monographs, 67*(1), 63-84.
- Broaddus, M. R., Morris, H., & Bryan, A. D. (2010). 'It's not what you said, it's how you said it': Perceptions of condom proposers by gender and strategy. *Sex Roles, 62*(9-10), 603-614.
- Buhi, E. R., Daley, E. M., Fuhrmann, H. J., & Smith, S. A. (2009). An observational study of how young people search for online sexual health information. *Journal of College Health, 58*(2), 101-111.

- Buhi, E. R., & Goodson, P. (2007). Predictors of adolescent sexual behavior and intention: A theory-guided systematic review. *Journal of Adolescent Health, 40*(1), 4-21.
- Buhi, E. R., Marhefka, S. L., & Hoban, M. T. (2010). The state of the union: Sexual health disparities in a national sample of US college students. *Journal of American College Health, 58*(4), 337-346.
- Bryon, P., Albury, K., & Evers, C. (2013). 'It would be weird to have that on Facebook': Young people's use of social media and the risk of sharing sexual health information. *Reproductive Health Matters, 21*(41), 35-44.
- Caico, C. (2014). Sexually risky behavior in college-aged students. *Open Journal of Preventive Medicine, 4*(5), 354-364.
- Campo, S., Askelson, N. M., Spies, E. L., & Losch, M. (2012). Ambivalence, communication and past use: Understanding what influences women's intentions to use contraceptives. *Psychology, Health, & Medicine, 17*(3), 356-365.
- Caplan, P. (Ed.). (1987). *The cultural construction of sexuality*. New York, NY: Routledge.
- Case, D. O., Andrews, J. E., Johnson, J. D., & Allard, S. L. (2005). Avoiding versus seeking: The relationship of information seeking to avoidance, blunting, coping, dissonance, and related concepts. *Journal of the Medical Library Association, 93*(3), 353-362.
- Centers for Disease Control (2010a). Sexually transmitted diseases. Treatment guidelines. Retrieved from <http://www.cdc.gov/std/treatment/2010/clinical.htm>
- Centers for Disease Control (2010b). The role of STD detection and treatment in HIV prevention – CDC fact sheet. Retrieved from <http://www.cdc.gov/std/hiv/stdfact-std-hiv.htm>

- Centers for Disease Control. (2011). CDC, STD trends in the United States. 2011 National data for chlamydia, gonorrhea, and syphilis, 2012. HIV surveillance report, Supplemental Report.
- Centers for Disease Control. (2013a). CDC Fact Sheet: Incidence, prevalence, and cost of sexually transmitted infections in the United States. Retrieved from <http://www.cdc.gov/std/stats/STI-Estimates-Fact-Sheet-Feb-2013.pdf>
- Centers for Disease Control. (2013b). Sexually transmitted diseases. Chlamydia. Retrieved from <http://www.cdc.gov/STD/chlamydia/default.htm>
- Centers for Disease Control (2014a). Sexually transmitted disease surveillance, 2012. United States Department of Health & Human Services. Retrieved from <http://www.cdc.gov/sTD/stats12/Surv2012.pdf>
- Centers for Disease Control (2014b). STDs in adolescents and young adults. 2013 Sexually Transmitted Diseases Surveillance. Retrieved from <http://www.cdc.gov/std/stats13/adol.htm>
- Centers for Disease Control (2014c). Sexually Transmitted Diseases (prevention). STD & HIV screening recommendations. <http://www.cdc.gov/std/prevention/screeningreccs.htm>
- Cerwonka, E. R., Isbell, T. R., & Hansen, C. E. (2000). Psychosocial factors as predictors of unsafe sexual practices among young adults. *AIDS Education and Prevention, 12*(2), 141-153.
- Chacko, M. R., Sternberg, K. v., Velasquez, M. M., Wiemann, C. M., Smith, P. B., & DiClemente, R. (2008). Young women's perspective on the *pros* and *cons* to seeking screening for chlamydia and gonorrhea: An exploratory study. *Journal of Pediatric Adolescent Gynecology, 21*(4), 187-193.

- Chang, L. (2014). College students' search for sexual health information from their best friends: An application of the theory of motivated information management. *Asian Journal of Social Psychology, 17*(3), 196-205.
- Chou, C. P., & Bentler, P. M. (1995). Estimates and tests in structural equation modeling. In R. H. Hoyle (Ed.), *Structural equation modeling* (pp. 37-59). Thousand Oaks, CA: Sage
- Clark, L. F., Miller, K. S., Harrison, J. S., Kay, K. L., & Moore, J. (1996). The role of attraction in partner assessments and heterosexual risk for HIV. In S. Oskamp & S. Thompson (Eds.), *Understanding and preventing HIV risk behavior: Safe sex and drug use* (pp. 80-99). Thousand Oaks, CA: Sage.
- Cleary, J., Barhman, R., MacCormack, T., & Herold, E. (2002). Discussing sexual health with a partner: A qualitative study with young women. *The Canadian Journal of Human Sexuality, 11*(3-4), 117-132.
- Cline, R. J. W., & Haynes, K. M. (2001). Consumer health information seeking on the Internet: The state of the art. *Health Education Research, 16*(6), 671-692.
- Cohen, E. L. (2009). Naming and claiming cancer among African American Women: An application of problematic integration theory. *Journal of Applied Community Research, 37*(4), 397-417.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum.
- Coleman, L. M., & Ingham, R. (1999). Exploring young people's difficulties in talking about contraception: How can we encourage more discussion between partners? *Health Education Research, 14*(6), 741-750.

- Collins, R. L., Elliott, M. N., Berry, S. H., Kanouse, D. E., & Hunter, S. B. (2003). Entertainment television as a healthy sex educator: The impact of condom-efficacy information in an episode of Friends. *Pediatrics, 112*(5), 1115-1121.
- Conner, M., Warren, R., Close, S., & Sparks, P. (1999). Alcohol consumption and the theory of planned behavior: An examination of the cognitive mediation of past behavior. *Journal of Applied Social Psychology, 29*(8), 1676-1704.
- Crosby, R. A., DiClemente, R. J., Wingood, G. M., Catlainn, S., Harrington, K., Davies, S. L., . . . Oh, M. K. (2001). Psychosocial correlates of adolescents' worry about STD versus HIV infection: Similarities and differences. *Sexually Transmitted Diseases, 28*(4), 208-213.
- Crosby, R. A., DiClemente, R. J., Wingood, G. M., Cobb, B. K., Harrington, K., Davies, S. L., . . . Oh, M. K. (2002). Condom use and correlates of African American adolescent females' infrequent communication with sex partners about preventing sexually transmitted diseases and pregnancy. *Health Education Behavior, 29*(2), 219-231.
- Cunningham, S. D., Kerrigan, D. L., Jennings, J. M., & Ellen, J. M. (2009). Relationships between perceived STD-related stigma, STD-related shape and STD screening among a household sample of adolescents. *Perspectives on Sexual and Reproductive Health, 41*(4), 225-230.
- Cunningham, S. D., Tschann, J., Gurvey, J. E., Fortenberry, J. D., & Ellen, J. M. (2002). Attitudes about sexual disclosure and perceptions of stigma and shame. *Sexually Transmitted Infections, 78*(5), 334-338.
- Davies, S. L., DiClemente, R. J., Wingood, G. M., Person, S. D., Dix, E. S., Harrington, K., . . . Oh, K. (2006). Predictors of inconsistent contraceptive use among adolescent girls: Findings from a prospective study. *Journal of Adolescent Health, 39*(1), 43-49.

- Davis, D., Shaver, P. R., Widaman, K. F., Vernon, M. L., Follette, W. C., & Beitz, K. (2006). 'I can't get no satisfaction': Insecure attachment, inhibited sexual communication, and sexual dissatisfaction. *Personal Relationships, 13*(4), 465-483.
- Davis, K., Dickman, E. D., Ferris, D., & Dias, J. K. (2004). Human papillomavirus vaccine acceptability among parents of 10- to 15-year-old adolescents. *Journal of Lower Genital Tract Disease, 8*(3), 188-194.
- Delgado, H. M., & Bryn, A. S. (2007). Can media promote responsible sexual behaviors among adolescents and young adults? *Current Opinion in Pediatrics, 19*(4), 405-410.
- De Visser, R. O. (2005). One size fits all? Promoting condom use for sexually transmitted infection among heterosexual young adults. *Health Education Research, 20*(5), 557-566.
- De Visser, R. O., & O'Neill, N. (2013). Identifying and understanding barriers to sexually transmissible infection testing among young people. *Sexual Health, 10*(6), 553-558.
- DiClemente, R. J., Salazar, L. F., & Crosby, R. A. (2007). A review of STD/HIV preventive interventions for adolescents: Sustaining effects using an ecological approach. *Journal of Pediatric Psychology, 32*(8), 888-906.
- DiClemente, R. J., Salazar, L. F., Crosby, R. A., & Rosenthal, S. L. (2005). Prevention and control of sexually transmitted infections among adolescents: The importance of a socio-ecology perspective – a commentary. *Public Health, 119*(9), 825-836.
- DiClemente, R. J., Sales, J. M., Danner, F., & Crosby, R. A. (2011). Association between sexually transmitted diseases and young adults' self-reported abstinence. *Pediatrics, 127*(2), 208-213.
- DiIorio, C., Dudley, W. N., Lehr, S., & Soet, J. E. (2000). Correlates of safer sex communication among college students. *Journal of Advanced Nursing, 32*(3), 658-665.

- DiIorio, C., Kelley, M., & Hockenberry-Eaton, M. (1999). Communication about sexual issues: mothers, fathers, and friends. *Journal of Adolescent Health, 24*(3), 181-189.
- Dillow, M. R., & LaBelle, S. (2014). Discussions of sexual health testing: Applying the theory of motivated information management. *Personal Relationships, 21*(4), 676-691.
- Dolcini, M. M., Warren, J., Towner, S. L., Catania, J. A., & Harper, G. W. (2015). Information age: Do urban African-American youth find sexual health information online? *Sexuality Research and Social Policy, 12*(2), 110-114.
- Drumright, L. N., Gorbach, P. M., & Holmes, K. K. (2004). Do people really know their sex partners? Concurrency, knowledge of partner behavior, and sexually transmitted infections within partnerships. *Sexually Transmitted Diseases, 31*(7), 437-442.
- Duncan, B., Hart, G., Scoular, A., & Bigrigg, A. (2001). Qualitative analysis of psychosocial impact of diagnosis of *chlamydia trachomatis*: Implications for screening. *British Medical Journal, 322*(7280), 195-199.
- Dunne, E. F., Unger, E. R., Sternberg, M., McQuillan, G., Swan, D. C., Patel, S. S., & Markowitz, L. E. (2007). Prevalence of HPV infection among females in the United States. *Journal of the American Medical Association, 297*(8), 813-819.
- Dunne, J. E. (2002). Information seeking and use by battered women: A “person-in-progressive-situations” approach. *Library and Information Science Research, 24*(4), 434-355.
- Dutta-Bergman, M. J. (2004). Primary sources of health information: Comparisons in the domain of health attitudes, health cognitions, and health behaviors. *Health Communication, 16*(3), 273-288.

- Dutta-Bergman, M. J. (2005). Developing a profile of consumer intention to seek out additional information beyond a doctor: The role of communicative and motivation variables. *Health Communication, 17*(1), 1-16.
- East, L., Jackson, D., O'Brien, L., & Peters, K. (2011). Condom negotiation: Experiences of sexually active young women. *Journal of Advanced Nursing, 67*(1), 77-85.
- Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., . . . Wechsler, H. (2012). Youth risk behavior surveillance – United States, 2011. *Morbidity and Mortality Weekly Report, 61*(4), 1-163.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Reviews in Psychology, 53*(1), 109-132.
- Edgar, T., & Volkman, J. E. (2012). Using communication theory for health promotion: Practical guidance on message design and strategy. *Health Promotion Practice, 13*(5), 587-590.
- Emmers, T. M., & Canary, D. J. (1996). The effect of uncertainty reducing strategies on young couples' relational repair and intimacy. *Communication Quarterly, 44*(2), 166-182.
- Erkstrand, M. L., & Coates, T. J. (1990). Maintenance of safer sexual behaviors and predictors of risky sex: The San Francisco Men's Health Study. *American Journal of Public Health, 80*(8), 973-977.
- Escoffery, C., Miner, K. R., Adame, D. D., Butler, S., McCormick, L., & Mendell, E. (2005). Internet use for health information among college students. *Journal of American College Health, 53*(4), 183-188.
- Ethier, K. A., Kershaw, T., Niccolai, L., Lewis, J. B., & Ickovics, J. R. (2003). Adolescent women underestimate their susceptibility to sexually transmitted infections. *Sexually Transmitted Infections, 79*(5), 408-411.

- Fan, X., & Sivo, S. A. (2005). Sensitivity of fit indexes to misspecified structural or measurement model components: Rationale of two-index strategy revisited. *Structural Equation Modeling, 12*(3), 343-367.
- Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and structural equation modeling fit indexes. *Structural Equation Modeling, 6*(1), 56-83.
- Farley, T. A., Cohen, D. A., & Elkins, W. (2005). Asymptomatic sexually transmitted diseases: The case for screening. *Preventive Medicine, 36*(4), 502-509.
- Finer, L. B. (2007). Trends in premarital sex in the United States, 1954-2003. *Public Health Reports, 122*(1), 73-78.
- Fisher, W. R. (1987). *Human communication as narration: Toward a philosophy of reason, value and action*. Columbia, SC: University of South Carolina Press.
- Fleming, D. T., & Wasserheit, J. N. (1999). From epidemiological synergy to public health policy and practice: The contribution of other sexually transmitted diseases to sexual transmission of HIV infection. *Sexually Transmitted Infections, 75*(1), 3-17.
- Ford, C. A., Jaccard, J., Millstein, S. G., Bardsley, P. E., & Miller, W. C. (2004). Perceived risk of chlamydial and gonococcal infection among sexually experienced young adults in the United States. *Perspectives on Sexual and Reproductive Health, 36*(6), 254-268.
- Forhan, S. E., Gottlieb, S. L., Sternberg, M. R., Xu, F., Datta, S. D., McQuillan, G. M., . . . Markowitz, L. E. (2009). Prevalence of sexually transmitted infections among female adolescents aged 14-19 in the United States. *Pediatrics, 124*(6), 1505-1512.
- Forrest, S., Strange, V., & Oakley, A. (2004). What do young people want from sex education? The results of a needs assessment from a peer-led sex education programme. *Culture, Health, & Sexuality, 6*(4), 337-354.

- Fortenberry, J. D., Brizendine, E., Katz, B. P., & Orr, D. P. (2002). The role of self-efficacy and relationship quality in partner notification by adolescents with sexually transmitted infections. *Archives of Pediatrics & Adolescent Medicine, 156*(11), 1133-1137.
- Fortenberry, J. D., McFarlane, M., Bleakley, A., Bull, S., Fishbein, M., Grimley, D. M., . . . Stoner, B. P. (2002). Relationships of stigma and shame to gonorrhea and HIV screening. *American Journal of Public Health, 92*(3), 378-381.
- Fowler, C., & Afifi, W. A. (2011). Applying the theory of motivated information management to adult children's discussions of caregiving with aging parents. *Journal of Social and Personal Relationships, 28*(4), 507-535.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychology, 56*(3), 218-226.
- Friedman, A. L., & Bloodgood, B. (2010). "Something we'd rather not talk about": Findings from CDC exploratory research on sexually transmitted disease communication with girls and women. *Journal of Women's Health, 19*(10), 1823-1831.
- Frost, J. L., Lindberg, L. D., & Finer, L. B. (2012). Young adults' contraceptive knowledge, norms and attitudes: Associations with risk of unintended pregnancy. *Perspectives on Sexual and Reproductive Health, 44*(2), 107-116.
- Gallagher, K. M., & Updegraff, J. A. (2012). Health message framing effects on attitudes, intentions, and behavior: A meta-analytic review. *Annals of Behavioral Medicine, 43*(1), 101-116.
- Gallo, L. C., & Matthews, K. A. (2003). Understanding the association between socioeconomic status and physical health: Do negative emotions play a role? *Psychological Bulletin, 129*(1), 10-51.

- Gavin, L., MacKay, A. P., Brown, K., Harrier, S., Ventura, S. J., Kann, L., . . . Ryan, G. (2009). *Sexual and reproductive health of persons aged 10-24 years – United States, 2002-2007*. Department of Health & Human Services, Centers for Disease Control and Prevention.
- Gibbs, L., Manning, W. D., Longmore, M., & Giordano, P. C. (2014). Qualities of romantic relationships and consistent condom use among dating young adults. In L. Bourgois & S. Cauchois (Eds.), *Contraceptives: Predictors of use, role of cultural attitudes & practices and levels of effectiveness* (pp. 157-182). Hauppauge, NY: Nova Science Publishers, Inc.
- Golden, M. R., Whittington, W. L. H., Handsfield, A. B. H., Hughes, J. P., Stamm, W. E., Hogben, M., . . . Holmes, K. K. (2005). Effect of expedited treatment of sex partners on recurrent or persistent gonorrhea or chlamydial infection. *The New England Journal of Medicine*, 352(7), 676-685.
- Goldsmith, D. J. (2001). A normative approach to the study of uncertainty and communication. *Journal of Communication*, 51(3), 514-533.
- Gray, J. B. (2009). The power of storytelling: Using narrative in the healthcare context. *Journal of Communication in Healthcare*, 2(3), 258-273.
- Gray, N. J., Klein, J. D., Noyce, P. R., Sesselberg, T. S., & Cantrill, J. A. (2005). Health information seeking behaviour in adolescence: The place of the Internet. *Social Science & Medicine*, 60(7), 1467-1478.
- Greene, K., Derlega, V. J., & Mathews, A. (2006). Self-disclosure in personal relationships. In A. L. Vangelisti & D. Perlman (Eds.), *The Cambridge handbook of personal relationships* (pp. 409-427). New York, NY: Cambridge University Press.
- Gudykunst, W. B. (1983). Similarities and differences in perceptions of initial intracultural and intercultural encounters. *The Southern Speech Communication Journal*, 49(1), 40-65.

- Gudykunst, W. B. (1993). Toward a theory of effective interpersonal and intergroup communication: AN anxiety/uncertainty management perspective. In R. L. Wiseman & J. Koester (Eds.), *Intercultural communication competence* (pp. 33-71). Newbury Park, CA: Sage.
- Gudykunst, W. B. (1995). Anxiety/uncertainty management (AUM) theory: Current status. In R. L. Wiseman (Ed.), *Intercultural communication theory* (pp. 8-58). Thousand Oaks, CA: Sage.
- Gudykunst, W. B., & Hammer, M. R. (1988). Strangers and hosts: An extension of uncertainty reduction theory to intercultural adjustment. In Y. Y. Kim & W. B. Gudykunst (Eds.), *Cross-cultural adaptation* (pp. 106-139). Newbury Park, CA: Sage.
- Guzmán, B. L., Schlehofer-Sutton, M. M., Villanueva, C., Stritto, M. E. D., Casad, B. J., & Feria, A. (2003). Let's talk about sex: How comfortable discussions about sex impact teen sexual behavior. *Journal of Health Communication, 8*(6), 583-598.
- Hadley, W., Brown, L. K., Lescano, C. M., Kell, H., Spalding, K., DiClemente, R., & Donenberg, G. (2009). Parent-adolescent sexual communication: Associations of condom use with condom discussions. *AIDS and Behavior, 13*(5), 997-1004.
- Halpern-Felsher, B. L., Kropp, R. Y., Boyer, C. B., Tschann, J. M., & Ellen, J. M. (2004). Adolescents' self-efficacy to communicate about sex: Its role in condom attitudes, commitment and use. *Adolescence, 39*(155), 443-456.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*(4), 408-420.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York, NY: Guilford Press.

- Hecht, M. L., & Miller-Day, M. (2007). The Drug Resistance Strategies Project as translational research. *Journal of Applied Communication Research*, 35(4), 343-349.
- Helme, D. W., Noar, S. M., Allard, S., Zimmerman, R. S., Palmgreen, P., & McClanahan, K. J. (2011). In-depth investigations of interpersonal discussions in response to a safer sex mass media campaign. *Health Communication*, 26(4), 366-378.
- Henson, R. K. (2006). Effect-size measures and meta-analytic thinking in counseling psychology research. *The Counseling Psychologist*, 34(5), 601-629.
- Hickey, M. T., & Cleland, C. (2013). Sexually transmitted infection risk perception among female college students. *Journal of the American Association of Nurse Practitioners*, 25(7), 377-384.
- Hicks, M. S., McRee, A.-L., & Eisenberg, M. E. (2013). Teens talking with their partners about sex: The role of parent communication. *American Journal of Sexuality Education*, 8(1-2), 1-17.
- Higgins, J. A., Popkin, R. A., & Santelli, J. S. (2012). Pregnancy ambivalence and contraceptive use among young adults in the United States. *Perspectives of Sexual and Reproductive Health*, 44(4), 236-243.
- Higgins, J. A., & Wang, Y. (2015). The role of young adults' pleasure attitudes in shaping condom use. *American Journal of Public Health*, 105(7), 1329-1332.
- Hinyard, L. J., & Kreuter, M. W. (2007). Using narrative communication as a tool for health behavior change: A conceptual, theoretical, and empirical review. *Health Education Behavior*, 34(5), 777-792.
- Hock-Long, L., Henry-Moss, D., Carter, M., Hatfield-Timajchy, K., Erickson, P. I., Cassidy, A., . . . Chittams, J. (2013). Condom use with serious and casual heterosexual partners:

- Findings from a community venue-based survey of young adults. *AIDS and Behavior*, 17(3), 900-913.
- Hoe, S. L. (2008). Issues and procedures in adopting structural equation modeling technique. *Journal of Applied Quantitative Methods*, 3(1), 76-83.
- Hoff, T., Greene, L., & Davis, J. (2003). *National survey of adolescents and young adults: Sexual health knowledge, attitudes, and experiences*. Henry J. Kaiser Family Foundation. Retrieved from <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/national-survey-of-adolescents-and-young-adults.pdf>
- Hofferth, S. L., & Reid, L. (2002). Early childbearing and children's achievement and behavior over time. *Perspectives on Sexual and Reproductive Health*, 34(1), 41-49.
- Hogan, T. P., & Brashers, D. E. (2009). The theory of communication and uncertainty management: Implications from the wider realm of information behavior. In T. D. & W. A. Afifi (Eds.), *Uncertainty, information management, and disclosure decisions: Theories and applications* (pp. 45-66). New York, NY: Routledge.
- Hogg, M. A. (2000). Subjective uncertainty reduction through self-categorization: A motivational theory of social identity processes. *European Review of Social Psychology*, 11(1), 223-255.
- Hogg, M. A. (2007). Uncertainty-identity theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 39, pp. 69-126) San Diego, CA: Academic Press.
- Hogg, M. A. (2009). Managing self-uncertainty through group identification. *Psychological Inquiry*, 20(4), 221-224.
- Hogg, M. A., & Adelman, J. (2013). Uncertainty-identity theory: Extreme groups, radical behavior, and authoritarian leadership. *Journal of Social Issues*, 69(3), 436-454.

- Hohman, Z. P., & Hogg, M. A. (2011). Fear and uncertainty in the face of death: The role of life after death in group identification. *European Journal of Social Psychology, 41*(6), 751-760.
- Holbert, R. L., & Stephenson, M. T. (2002). Structural equation modeling in the communication sciences, 1995-2000. *Human Communication Research, 28*(4), 531-551.
- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53-60.
- Horan, S. M. (in press). Further understanding sexual communication: Honesty, deception, safety, and risk. *Journal of Social and Personal Relationships*. doi: 10.1177/0265407515578821
- Horvick, S. R. (2014). Understanding family health information seeking: A test of the theory of motivated information management. *Journal of Health Communication, 19*(1), 6-23.
- Hu, L., & Bentler, P. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3*(4), 424-453.
- Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.
- Huebner, A. J., & Howell, L. W. (2003). Examining the relationship between adolescent sexual risk-taking and perceptions of monitoring, communication, and parenting styles. *Journal of Adolescent Health, 33*(2), 71-78.
- Hutchinson, M. K., Jemmott III, J. B., Jemmott, L. S., Braverman, P., & Fong, G. T. (2003). The role of mother-daughter sexual risk communication in reducing sexual risk behaviors among urban adolescent females: A prospective study. *Journal of Adolescent Health, 33*(2), 98-107.

- Iacobucci, D. (2010). Structural equations modeling: Fit indices, sample size, and advanced topics. *Journal of Consumer Psychology, 20*(1), 90-98.
- Ingham, R., Woodcock, A., & Stenner, K. (1991). Getting to know you . . . Young people's knowledge of their partners at first intercourse. *Journal of Community Applied Social Psychology, 1*(2), 117-132.
- Ingledeue, K., Cottrell, R., Bernard, A. (2004). College women's knowledge, perceptions, and preventive behaviors regarding human papillomavirus infection and cervical cancer. *American Journal of Health Studies, 19*(1), 28-34.
- Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates: Some support for the N:q hypothesis. *Structural Equation Modeling, 10*(1), 128-141.
- James, A. B., Simpson, T. Y., & Chamberlain, W. A. (2008). Chlamydia prevalence among college students: Reproductive and public health implications. *Sexually Transmitted Diseases, 35*(6), 529-532.
- Jang, S. A., & Tian, Y. (2012). The effects of communication efficacy on information seeking following events that increase uncertainty: A cross-lagged panel analysis. *Communication Quarterly, 60*(2), 234-254.
- Johnson, A. Z., Sieving, R. E., Pettingell, S. L., & McRee, A.-L. (2015). The roles of partner communication and relationship status in adolescent contraceptive use. *Journal of Pediatric Health Care, 29*(1), 61-69.
- Johnson, J. D., & Case, D. O. (2012). *Health information seeking*. New York, NY: Peter Lang Publishing.
- Jones, R. K., & Biddlecom, A. E. (2011). Is the Internet filling the sexual health information gap for teens? An exploratory study. *Journal of Health Communication, 16*(2), 112-123.

- Kaestle, C. E., Halpern, C. T., Miller, W. C., & Ford, C. A. (2005). Young age at first sexual intercourse and sexually transmitted infections in adolescents and young adults. *American Journal of Epidemiology*, *161*(8), 774-780.
- Kaestle, C. E., & Waller, M. W. (2011). Bacterial STDs and perceived risk among sexual minority young adults. *Perspectives on Sexual Reproductive Health*, *43*(3), 158-163.
- Kahn, J. A., Slap, G. B., Bernstein, D. I., Kollar, L. M., Tissot, A. M., Hillard, P. A., & Rosenthal, S. L. (2005). Psychological, behavioral, and interpersonal impact of human papillomavirus and Pap test results. *Journal of Women's Health*, *14*(7), 650-659.
- Kalichman, S. C., Benotsch, E. G., Weinhardt, L., Austin, J., Luke, W., & Cherry, C. (2003). Health-related Internet use, coping, social support, and health indicators in people living with HIV/AIDS: Preliminary results from a community survey. *Health Psychology*, *22*(1), 111-116.
- Katz, M. L., Krieger, J. L., & Robert, A. J. (2011). Human papillomavirus (HPV): College male's knowledge, perceived risk, sources of information, vaccine barriers and communication. *Journal of Men's Health*, *8*(3), 175-184.
- Keller, S. N., & Brown, J. D. (2002). Media interventions to promote responsible sexual behavior. *The Journal of Sex Research*, *39*(1), 67-72.
- Kelly, B., Hornik, R., Romantan, A., Schwartz, J., Armstrong, K., DeMichele, A., . . . Wong, N. (2010). Cancer information scanning and seeking in the general population. *Journal of Health Communication*, *15*(2), 734-753.
- Khurana, A., & Bleakley, A. (2015). Young adults' sources of contraceptive information: Variations based on demographic characteristics and sexual risk behaviors. *Contraception*, *91*(2), 157-163.

- Kim, H. S., Bigman, C. A., Leader, A. E., Lerman, C., & Cappella, N. (2012). Narrative health communication and behavior change: The influence of exemplars in the news on intention to quit smoking. *Journal of Communication, 62*(3), 473-492.
- Kline, R. B. (2010). *Principles and practices of structural equation modeling* (3rd ed.). New York, NY: The Guilford Press.
- Knäuper, B., Kornik, R., Atkinson, K., Guberman, C., & Aydin, C. (2005). Motivation influences the underestimation of cumulative risk. *Personality and Social Psychology Bulletin, 31*(11), 1511-1523.
- Knobloch, L. K., & Carpenter-Theune, K. E. (2004). Topic avoidance in developing romantic relationships: Associations with intimacy and relational uncertainty. *Communication Research, 31*(2), 173-205.
- Knobloch, L. K., & Solomon, D. H. (1999). Measuring the sources and content of relational uncertainty. *Communication Studies, 50*(4), 261-278.
- Knobloch, L. K., Solomon, D., & Huanani, D. (2003). Responses to changes in relational uncertainty within dating relationships: Emotions and communication strategies. *Communication Studies, 54*(3), 282-306.
- Korchmaros, J. D., Ybarra, M. L., & Mitchell, K. J. (2015). Adolescent online romantic relationship initiating by sexual and gender identification. *Journal of Adolescence, 40*, 54-64.
- Kubicek, K., Beyer, W., Weiss, G., Iverson, E., & Kipke, M. D. (2010). In the dark: Young men's stories of sexual initiation in the absence of relevant sexual health information. *Health Education Behavior, 37*(2), 243-263.

- Lazarus, R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion. *American Psychologist, 46*(8), 819-834.
- Leathers, S. J., & Kelley, M. A. (2000). Unintended pregnancy and depressive symptoms among first-time mothers and fathers. *American Journal of Orthopsychiatry, 70*(4), 523-531.
- Lefkowitz, E. S., & Vasilenko, S. A. (2014). Healthy sex and sexual health: New directions for studying outcomes of sexual health. In E.S. Lefkowitz & S. A. Vasilenko (Eds.), *Positive and negative outcomes of sexual behaviors. New Directions for Child and Adolescent Development, 144* (pp. 87-98). San Francisco, CA: Josey-Bass.
- Lehmiller, J. J., VanderDrift, L. E., & Kelly, J. R. (2014). Sexual communication, satisfaction, and condom use behavior in friends with benefits and romantic partners. *Journal of Sex Research, 51*(1), 74-85.
- Lerner, J. S., Han, S., & Keltner, D. (2007). Feelings and consumer decision making: Extending the appraisal tendency framework. *Journal of Consumer Psychology, 17*(3), 184-187.
- Lerner, J. S., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality and Social Psychology, 81*(1), 146-159.
- Levine, D. (2011). Using technology, new media, and mobile for sexual and reproductive health. *Sexuality Research & Social Policy, 8*(1), 18-26.
- Lim, M. S. C., Vella, A., Sacks-Davis, R., & Hellard, M. E. (2014). Young people's comfort receiving sexual health information via social media and other sources. *International Journal of STD & AIDS, 25*(14), 1003-1008.
- Lo, S. C., Zea, M. C., & Poppen, P. J. (2009). Information, uncertainty, and sexual disclosures. In T. D. Afifi & W. A. Afifi (Eds.). *Uncertainty, information management and disclosure decisions: Theories and applications* (pp. 254-276). New York, NY: Routledge.

- MacCollum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Reviews in Psychology, 51*, 201-226.
- Magee, J. C., Bigelow, L., DeHaan, S., & Mustanski, B. S. (2012). Sexual health information seeking online: A mixed-methods study among lesbian, gay, bisexual, and transgender young people. *Health Education & Behavior, 39*(3), 276-289.
- Maiman, L., & Becker, M. H. (1974). The Health Belief Model: Origins and correlates in psychological theory. *Health Education Monographs, 2*(4), 336-353.
- Malhotra, S. (2008). Impact of the sexual revolution: Consequences of risky sexual behaviors. *Journal of American Physicians and Surgeons, 13*(3), 88-90.
- Manlove, J., Ryan, S., & Franzetta, K. (2004). Contraceptive use and consistency in U.S. teenagers' most recent sexual relationships. *Perspectives on Sexual Reproductive Health, 36*(6), 265-275.
- Manlove, J., Ryan, S., & Franzetta, K. (2007). Contraceptive use patterns across teens' sexual relationships: The role of relationships, partners, and sexual histories. *Demography, 44*(3), 603-621.
- Manlove, J., Welte, K., Wildsmith, E., & Barry, M. (2014). Relationship type and contraceptive use within young adult dating relationships. *Perspectives on Sexual and Reproductive Health, 46*(1), 41-50.
- Manning, J. (2014). Communication and health sexual practices: Toward a holistic communicology of sexuality. In M. H. Eaves (Ed.), *Applications in health communication: Emerging trends* (pp. 263-286). Dubuque, IA: Kendall-Hunt.
- Marston, C., & King, E. (2006). Factors that shape young people's sexual behavior: A systematic review. *The Lancet, 368*(9547), 1581-1586.

- Matthews, A. K., Sellergren, S. A., Manfredi, C., & Williams, M. (2002). Factors influencing medical information seeking among African American cancer patients. *Journal of Health Communication, 7*(3), 205-219.
- Mayo Clinic. (2014). Diseases and conditions. Sexually transmitted diseases (STDs). Retrieved from <http://www.mayoclinic.org/diseases-conditions/sexually-transmitted-diseases-stds/basics/prevention/con-20034128>
- Mayo Clinic. (2015). Diseases and conditions. Sexually transmitted diseases (STDs). Retrieved from <http://www.mayoclinic.org/diseases-conditions/sexually-transmitted-diseases-stds/in-depth/std-symptoms/art-20047081>
- McDavitt, B., & Mutchler, M. G. (2014). "Dude, you're such a slut!" Barriers and facilitators of sexual communication among young gay men and their best friends. *Journal of Adolescent Research, 29*(4), 464-498.
- Metts, S., & Spitzberg, B. H. (1996). Sexual communication in interpersonal contexts: A script-based approach. In B. R. Burleson (Ed.), *Communication yearbook 19* (pp. 44-91). Thousand Oaks, CA: Sage.
- Metts, S., Sprecher, S., & Regan, P. C. (1998). Communication and sexual desire. In P. A. Andersen & L. K. Guerrero (Eds.), *Handbook of communication and emotion: Research, theory, applications, and contexts* (pp. 353-378). San Diego, CA: Academic Press.
- Metzler, C. W., Noell, J., Biglan, A., Ary, D., & Smolkowski, K. (1994). The social context for risky sexual behavior among adolescents. *Journal of Behavioral Medicine, 17*(4), 419-438.
- Milhausen, R. R., Sales, J. M., Wingood, G. M., DiClemente, R. J., Salazar, L. F., & Crosby, R. A. (2007). Validation of a partner sexual communication scale for use in HIV/AIDS

- prevention interventions. *Journal of HIV/AIDS Prevention in Children & Youth*, 8(1), 11-33.
- Miller, W. C., Ford, C. A., Morris, M., Handcock, M. S., Schmitz, J. L., Hobbs, M. S., . . . Udry, J. R. (2004). Prevalence of chlamydial and gonococcal infections among young adults in the United States. *Journal of the American Medical Association*, 291(18), 2229-2236.
- Mitchell, K. J., Ybarra, M. L., Korchmaros, J. D., & Kosciw, J. G. (2014). Accessing sexual health information online: Use, motivations and consequences for youth with different sexual orientations. *Health Education Research*, 29(1), 147-157.
- Morey, J. N., Gentzler, A. L., Creasy, B., Oberhauser, A. M., & Westerman, D. (2013). Young adults' use of communication technology within their romantic relationships and associations with attachment style. *Computers in Human Behavior*, 29(4), 1771-1778.
- Mosher, W. D. Chandra, A., & Jones, J. (2005). Sexual behavior and selected health measures: Men and women 15-44 years of age, United States, 2002. Advance data from vital and health statistics, 362. Hyattsville, MD: National Center for Health Statistics. Retrieved from www.cdc.gov/nchs/data/ad/ad362.pdf
- Mosciciki, A.B. (2005). Impact of HPV infection in adolescent populations. *Journal of Adolescent Health*, 37(6), S3-S9.
- Moyer-Gusé, E. (2008). Toward a theory of entertainment persuasion: Explaining the persuasive effects of entertainment-education messages. *Communication Theory*, 18(3), 407-425.
- Moyer-Gusé, E., Chung, A. H., & Jain, P. (2011). Identification with characters and discussion of taboo topics after exposure to an entertainment narrative about sexual health. *Journal of Communication*, 61(3), 387-406.

- Mueller, R. O., & Hancock, G. R. (2008). Best practices in structural equation modeling. In J. W. Osborne (Ed.), *Best practices in quantitative methods* (pp. 488-508). Thousand Oaks, CA: Sage.
- Murphy, S. T., Frank, L. B., Chatterjee, J. S., & Baezconde-Garbanti, L. (2013). Narrative versus non-narrative: The role of identification, transportation, and emotion in reducing health disparities. *Journal of Communication, 63*(1), 116-137.
- Nabi, R. L. (1999). A cognitive-functional model for the effects of discrete negative emotions on information processing, attitude change, and recall. *Communication Theory, 9*(3), 292-320.
- Nabi, R. L. (2002). Anger, fear, uncertainty, and attitudes: A test of the cognitive-functional model. *Communication Monographs, 69*(3), 204-216.
- Neulip, J. W. (2012). The relationship among intercultural communication apprehension, ethnocentrism, uncertainty reduction, and communication satisfaction during initial intercultural interaction: An extension of anxiety and uncertainty management (AUM) theory. *Journal of Intercultural Communication Research, 41*(1), 1-16.
- Newbern, E. C., Anschuetz, G. L., Eberhart, M. G., Salmon, M. E., Brady, K. A., Los Reyes, A. D., . . . Schwarz, D. F. (2013). Adolescent sexually transmitted infections and risk for subsequent HIV. *American Journal of Public Health, 103*(10), 1874-1881.
- Newton, D. C., & McCabe, M. (2005). A theoretical discussion of the impact of stigma on psychological adjustment to having a sexually transmissible infection. *Sexual Health, 2*(2), 63-69.
- Newton, D. C., & McCabe, M. (2008). Sexually transmitted infections: Impact on individuals and their relationships. *Journal of Health Psychology, 13*(7), 864-869.

- Ni, L., & Wang, Q. (2011). Anxiety and uncertainty management in an intercultural setting: The impact on organization-public relationships. *Journal of Public Relations Research, 23*(3), 269-301.
- Noar, S. M., Carlyle, K., & Cole, C. (2006). Why communication is crucial: Meta-analysis of the relationship between safer sexual communication and condom use. *Journal of Health Communication, 11*(4), 365-390.
- Noar, S. M., & Edgar, T. (2009). The role of partner communication in safer sexual behavior. In T. Edgar, S. M. Noar, & V. S. Freimuth (Eds.), *Communication perspectives on HIV/AIDS for the 21st century* (pp. 3-28). New York, NY: Erlbaum.
- Okazaki, S. (2002). Influences of culture on Asian Americans' sexuality. *The Journal of Sex Research, 39*(1), 34-41.
- Olsson, U. H., Foss, T., Troye, S. V., & Howell, R. D. (2000). The performance of ML, GLS, and WLS estimation in structural equation modeling under conditions of misspecification nonnormality. *Structural Equation Modeling: A Multidisciplinary Journal, 7*(4), 557-595.
- Ouellette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological Bulletin, 124*(1), 54-74.
- Owen, J., & Fincham, F. D. (2011). Young adults' emotional reactions after hooking up encounters. *Archives of Sexual Behavior, 40*(2), 321-330.
- Park, M. J., Mulye, T. P., Adams, S. H., Brindis, C. D., & Irwin, C. E., Jr. (2006). The health status of young adults in the United States. *Journal of Adolescent Health, 39*(3), 305-317.

- Parker, K. A., & Ivanov, B. (2013). Why not communicate?: Young women's reflections on their lack of communication with sexual partners regarding sex and contraception. *The International Journal of Health, Wellness, and Society*, 2(4), 93-109.
- Perrin, K. K., Daley, E. M., Naoom, S. F., Packing-Ebuen, J. L., Rayko, McFarlane, M., & McDermott, R. J. (2006). Women's reactions to HPV diagnosis: Insights from in-depth interviews. *Women's Health*, 43(2), 93-110.
- Peterson, R. A. (2001). On the use of college students in social science research: Insights from a second-order meta-analysis. *Journal of Consumer Research*, 28(3), 450-461.
- Pflieger, J. C., Cook, E. C., Nicolai, L., M., & Connell, C. M. (2013). Racial/ethnic differences in patterns of sexual risk behavior and rates of sexually transmitted infections among young adults. *American Journal of Public Health*, 103(5), 903-909.
- Powell, E. (2008). Young people's use of friends and family for sex and relationships information and advice. *Sex Education*, 8(3), 289-302.
- Powell, H., & Segrin, C. (2004). The effect of family and peer communication on college students' communication with dating partners about HIV and AIDS. *Health Communication*, 16(4), 427-449.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717-731.
- Quina, K., Harlow, L. L., Morokoff, P. J., & Burkholder, G. (2000). Sexual communication in relationships: When words speak louder than actions. *Sex Roles*, 42(7/8), 523-549.

- Quintana, S. M., & Maxwell, S. E. (1999). Implications of recent developments in structural equation modeling for counseling psychology. *The Counseling Psychologist, 27*(4), 485-527.
- Rafferty, K. A., Cramer, E., Priddis, D., & Allen, M. (2015). Talking about end-of-life preferences in marriage: Applying the theory of motivated information management. *Health Communication, 30*(4), 409-418.
- Ramírez, A. S., Freres, D., Martínez, L. S., Lewis, N., Bourgoin, A., Kelly, B., & Lee, C-J. (2013). Information seeking from media and family/friends increases the likelihood of engaging in healthy lifestyle behaviors. *Journal of Health Communication, 18*(5), 527-542.
- Rauscher, E. A., & Hesse, C. (2014). Investigating uncertainty and emotions in conversations about family health history: A test of the theory of motivated information management. *Journal of Health Communication, 19*(8), 939-954.
- Reed, J. L., Huppert, J. S., Gillespie, G. L., Taylor, R. G., Holland, C. K., Alessandrini, E. A., & Kahn, J. A. (2015). Adolescent patient preferences surrounding partner notification and treatment for sexually transmitted infections. *Academic Emergency Medicine, 22*(1), 61-66.
- Regan, P. C., & Dreyer, C. S. (1999). Lust? Love? Status? Young adults' motives for engaging in casual sex. *Journal of Psychology & Human Sexuality, 11*(1), 1-24.
- Richards, N. M. (2013). *Parental care, control, and communication about sex: The relation to risk sexual behaviors and relationship style in emerging adults*. Senior honors thesis. Eastern Michigan University. Retrieved from <http://commons.emich.edu/cgi/viewcontent.cgi?article=1352&context=honors>

- Rickert, V. I., Sanghvi, R., & Wiemann, C. M. (2002). Is lack of sexual assertiveness among adolescent and young adult women a cause for concern? *Perspectives on Sexual and Reproductive Health, 34*(4), 178-183.
- Riet, J. V., Ruiter, R. A. C., Verrij, M. Q., Candel, M. J. J. M., & De Vries, H. (2010). Distinct pathways to persuasion: The role of affect in message-framing effects. *European Journal of Social Psychology, 40*(7), 1261-1276.
- Rimal, R. N., Flora, J. A., & Schooler, C. (1999). Achieving improvements in overall health orientation: Effects of campaign exposure, information seeking, and health media use. *Communication Research, 26*(3), 322-348.
- Rimal, R. N. & Turner, M. M. (2009). Use of the risk perception attitude (RPA) framework for understanding health information seeking: The role of anxiety, risk perception, and efficacy beliefs. In T. D. Afifi & W. A. Afifi (Eds.). *Uncertainty, information management and disclosure decisions: Theories and applications* (pp. 145-163). New York, NY: Routledge.
- Robinson, B. E., Bocking, W. O., Rosser, B. R. S., Miner, M., & Coleman, E. (2002). The Sexual Health Model: Application of a sexological approach to HIV prevention. *Health Education Research, 17*(1), 43-57.
- Romer, D., Sznitman, S., DiClemente, R., Salazar, L. F., Vanable, P. A., Carey, M. P., . . . Juzang, I. (2009). Mass media as an HIV-prevention strategy: Using culturally sensitive messages to reduce HIV-associated sexual behavior of at-risk African American youth. *American Journal of Public Health, 99*(12), 2150-2159.

- Rosenberg, J. (2014). "*Allegedly . . .*": *A test of the theory of motivated information management in the context of targets' experiences with gossip*. (Unpublished Doctoral Dissertation). Kent State University, Kent, OH.
- Rosengard, C., Adler, N. E., Millstein, S. G., Gurvey, J. E., & Ellen, J. M. (2004). Perceived STD risk, relationship, and health values in adolescents' delaying sexual intercourse with new partners. *Sexually Transmitted Infections*, *80*(2), 130-137.
- Rosenstock, I. M. (1974). Historical origins of the Health Belief Model. *Health Education Monographs*, *2*(4), 328-335.
- Rosenstock, I. M. (1990). The Health Belief Model: Explaining health behavior through expectancies. In K. Glanz, F. M. Lewis, & B. Rimer (Eds.), *Health behavior and health education* (pp. 39-63). San Francisco, CA: Jossey-Bass.
- Rouner, D., Long, M., Bubar, R., Vernon, I., & Aungie, B. (2015). Communication about sexually transmitted infections among rural and urban Native American Youth. *Howard Journal of Communications*, *26*(2), 172-192.
- Rutledge, S. E., Siebert, D. C., Chonody, J., & Killian, M. (2011). Information about human sexuality: Sources, satisfaction, and perceived knowledge among college students. *Sex Education*, *11*(4), 471-487.
- Ryan, S., Franzetta, K., Manlove, J., Holcombe, E. (2007). Adolescents' discussion about contraception or STDs with partners before first sex. *Perspectives on Sexual and Reproductive Health*, *39*(3), 149-157.
- Sales, J. M., Lang, D. L., DiClemente, R. J., Latham, T. P., Wingood, G. M., Hardin, J. W., & Rose, E. S. (2012). The mediating role of partner communication frequency on condom

- use among African-American adolescent females participating in an HIV prevention program. *Health Psychology, 31*(1), 63-69.
- Sales, J. M., Milhausen, R. R., Wingood, G. M., DiClemente, R. J., Salazar, L. F., & Crosby, R. A. (2008). Validation of a parent-adolescent communication scale for use in STD/HIV prevention interventions. *Health Education & Behavior, 35*(3), 332-345.
- Sandfort, J. R., & Pleasant, A. (2009). Knowledge, attitudes, and informational behaviors of college students in regard to the human papillomavirus. *Journal of American College Health, 58*(2), 141-149.
- Sandfort, T. G. M., Orr, M., Hirsch, J. S., & Santelli, J. (2008). Long-term health correlates of timing of sexual debut: Results from a national US study. *American Journal of Public Health, 98*(1), 155-161.
- Santelli, J. S., Brener, N. D., Lowry, R., Bhatt, A., & Zabin, L. S. (1998). Multiple sexual partners among U.S. adolescents and young adults. *Family Planning Perspectives, 30*(6), 271-275.
- Satterwhite, C. L., Torrone, E., Meites, E., Dunne, E. F., Mahajan, R., Ocfemia, M. C. B., . . . Weinstock, H. (2013). Sexually transmitted infections among US women and men: Prevalence and incidence estimates, 2008. *Sexually Transmitted Diseases, 40*(3), 187-193.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*(2), 23-74.

- Scholly, K., Katz, A. R., Gascoigne, J., & Holck, P. S. (2005). Using social norms theory to explain perceptions and sexual health behaviors of undergraduate college students. *Journal of American College Health, 53*(4), 159-166.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*(6), 323-338.
- Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling* (2nd ed.). Mahwah, NJ: Erlbaum.
- Scott, M. E., Wildsmith, E., Welti, K., Ryan, S., Schelar, E., & Stewart-Streng, N. R. (2011). Risky adolescent sexual behaviors and reproductive health in young adulthood. *Perspectives on Sexual and Reproductive Health, 43*(2), 110-118.
- Seo, M., & Matsaganis, M. D. (2013). How interpersonal communication mediates the relationship of multichannel communication connections to health-enhancing and health-threatening behaviors. *Journal of Health Communication, 18*(8), 1002-1020.
- Shah, R., & Goldstein, S. M. (2006). Use of structural equation modeling in operations management research: Looking back and forward. *Journal of Operations Management, 24*(2), 148-169.
- Shen, L., & Dillard, J. P. (2007). The influence of behavioral inhibition/approach systems and message framing on the processing of persuasive health messages. *Communication Research, 34*(4), 433-467.
- Shim, M., Kelly, B., & Hornik, R. (2006). Cancer information scanning and seeking behavior is associated with knowledge, lifestyle choices, and screening. *Journal of Health Communication, 11*(Supp. 1), 157-172.

- Shoop, D. M., & Davidson, P. M. (1994). AIDS and adolescents: The relation of parent and partner communication to adolescent condom use. *Journal of Adolescence, 17*(2), 137-148.
- Shrier, L. A., Harris, S. K., & Beardslee, W. R. (2002). Temporal associations between depressive symptoms and self-reported sexually transmitted disease among adolescents. *Archives of Pediatric Adolescent Medicine, 156*(6), 599-606.
- Simon, L., & Daneback, K. (2013). Adolescents' use of the Internet for sex education: A thematic and critical review of the literature. *International Journal of Sexual Health, 25*(4), 305-319.
- Smith, J. R., Hogg, M. A., Martin, R., & Terry, D. J. (2007). Uncertainty and the influence of group norms in the attitude-behaviour relationship. *British Journal of Social Psychology, 46*(4), 769-792.
- Somers, C. L., & Paulson, S. E. (2000). Students' perceptions of parent-adolescent closeness and communication about sexuality: Relations with sexual knowledge, attitudes, and behaviors. *Journal of Adolescence, 23*(5), 629-644.
- Staras, S. A. S., Cook, R. L., & Clark, D. B. (2009). Sexual partner characteristics and sexually transmitted diseases among adolescents and young adults. *Sexually Transmitted Diseases, 36*(4), 232-238.
- Stekler, J., Bachmann, L., Brotman, R. M., Erbelding, E. J., Lloyd, L. V., Rietmeijer, C. A., . . . Golden, M. R. (2005). Concurrent sexually transmitted infections (STIs) in sex partners of patients with selected STIs: Implications for patient-delivered partner therapy. *Clinical Infectious Diseases, 40*(6), 787-793.

- Stone, N., & Ingham, R. (2002). Factors affecting British teenagers' contraceptive use at first intercourse: The importance of partner communication. *Perspectives on Sexual and Reproductive Health, 34*(4), 191-197.
- Stoner, B. P., Whittington, W. L. H., Aral, S. O., Hughes, J. P., Handsfield, H. H., & Holmes, K. K. (2003). Avoiding risky sex partners: Perception of partners' risks v partners' self-reported risks. *Sexually Transmitted Diseases, 79*(3), 197-201.
- Sunnafrank, M. (1986). Predicted outcome value during initial interactions: A reformulation of uncertainty reduction theory. *Human Communication Research, 13*(1), 3-33.
- Sunnafrank, M. (1990). Predicted outcome value and uncertainty reduction theories: A test of competing perspectives. *Human Communication Research, 17*(1), 76-103.
- Suzuki, L. K., & Calzo, J. P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexuality. *Journal of Applied Developmental Psychology, 25*(6), 685-698.
- Swann, W. B., Jr., & Gill, M. J. (1997). Confidence and accuracy in person perception: Do we know what we think we know about our relationship partners? *Journal of Personality and Social Psychology, 73*(4), 747-757.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.
- Theiss, J. A., & Solomon, D. H. (2008). Parsing the mechanisms that increase relational intimacy: The effects of uncertainty amount, open communication about uncertainty, and the reduction of uncertainty. *Human Communication Research, 34*(4), 626-654.

- Thomas, T. L., Yarandi, H. N., Dalmida, S. G., Frados, A., & Klienert, K. (2015). Cross-cultural differences in sexual risk behavior of emerging adults. *Journal of Transcultural Nursing, 26*(1), 64-72.
- Tilson, E. C., Sanchez, V., Ford, C. L., Smurzynski, M., Leone, P. A., Fox, K. K., . . . Miller, W. C. (2004). Barriers to asymptomatic screening and other STD services for adolescents and young adults: Focus group discussions. *BMC Public Health, 4*(1), 21-28.
- Toews, M. L., & Yazedjian, A. (2012). College students' knowledge, attitudes, and behaviors regarding sex and contraceptives. *Journal of Family & Consumer Sciences, 104*(3), 16-23.
- Tokunaga, R. S., & Gustafson, A. (2014). Seeing interpersonal information over the Internet: An application of the theory of motivated information management to Internet use. *Journal of Social and Personal Relationships, 31*(8), 1019-1039.
- Trieu, S. L., Modeste, N. N., Marshak, H. H., Males, M. A., & Bratton, S. I. (2010). Partner communication and HIV testing among US Chinese college students. *American Journal of Health Behavior, 34*(3), 362-373.
- Troth, A., & Peterson, C. C. (2000). Factors predicting safe-sex talk and condom use in early sexual relationships. *Health Communication, 12*(2), 195-218.
- Tulloch, H. E., McCaul, K. D., Miltenberger, R. G., & Smyth, G. M. (2004). Partner communication skills and condom use among college couples. *Journal of American College Health, 52*(6), 263-267.
- U.S. Department of Health and Human Services. (2012). Sexually transmitted infections (STI) fact sheet. Office of Women's Health, U.S. Department of Health and Human Services.

- Vaughan, P. W. (2000). Effects of an entertainment-education radio soap opera on family planning and HIV prevention in St. Lucia. *International Family Planning Perspectives*, 26(4), 148-157.
- Wang, X. (2013). The role of attitude functions, efficacy, anticipated emotions, and relationship status on college students' condom use intentions. *Journal of Sex Research*, 50(7), 704-714.
- Warren, C., & Warren, L. K. (2014). Family and partner communication about sex. In L. H. Turner & R. West (Eds.), *The SAGE handbook of family communication* (pp. 184-201). Thousand Oaks, CA: Sage.
- Warren, J. T., Harvey, S. M., & Agnew, C. R. (2012). One love: Explicit monogamy agreements among heterosexual young adult couples at increased risk of sexually transmitted infections. *The Journal of Sex Research*, 49(2-3), 282-289.
- Weinstock, H., Berman, S., & Cates, W., Jr. (2004). Sexually transmitted diseases among American youth: Incidence and prevalence estimates, 2000. *Perspectives of Sexual and Reproductive Health*, 36(1), 6-10.
- Weston, R., & Gore, Jr., P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34(5), 719-751.
- Whitaker, D. J., & Miller, K. S. (2000). Parent-adolescent discussions about sex and condoms: Impact on peer influences of sexual risk behavior. *Journal of Adolescent Research*, 15(2), 251-273.
- Whitaker, D. J., Miller, K. S., May, D. C., & Levin, M. L. (1999). Sexual risk and condom use: The importance of parent-teenager discussions. *Family Planning Perspectives*, 31(3), 117-121.

- Widman, L., Choukas-Bradley, S., Helms, S. W., Golin, C. E., & Prinstein, M. J. (2014). Sexual communication between early adolescents and their dating partners, parents, and best friends. *Journal of Sex Research, 51*(7), 731-741.
- Widman, L., Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2014). Safe sext: Adolescents' use of technology to communicate about sexual health with dating partners. *Journal of Adolescent Health, 54*(5), 612-614.
- Widman, L. M., Welsh, D. P., McNulty, J. K., & Little, K. C. (2006). Sexual communication and contraceptive use in adolescent dating couples. *Journal of Adolescent Health, 39*(6), 893-899.
- Willoughby, J. F., & Jackson K., Jr. (2013). 'Can you get pregnant when u r in the pool?': Young people's information seeking from a sexual health text line. *Sex Education: Sexuality, Society, and Learning, 13*(1), 96-106.
- Wilson, T. E., Hogben, M., Malka, E. S., Liddon, N., McCormack, W. M., Rubin, S. R., & Augenbraun, M. A. (2009). A randomized controlled trial for reducing risks for sexually transmitted infections through enhanced patient-based partner notification. *American Journal of Public Health, 99*(Suppl. 1), S104-S110.
- Wong, N. C. H. (2014). Predictors of information seeking about the HPV vaccine from parents and doctors among young college women. *Communication Quarterly, 62*(1), 75-96.
- World Health Organization. (2014). Sexual and reproductive health. Retrieved from http://www.who.int/reproductivehealth/topics/gender_rights/sexual_health/en/
- Wright, P. J., Randall, A. K., & Hayes, J. G. (2012). Predicting the condom assertiveness of collegiate females in the United States from the expanded health belief model. *International Journal of Sexual Health, 24*(2), 137-153.

- Wyatt, T., & Oswalt, S. (2014). Sexual behaviors of college freshmen and the need for university-based education. *College Student Journal, 48*(4), 603-612.
- Yoo, J. H. (2009). Uncertainty reduction and information valence: Tests of uncertainty reduction theory, predicted outcome value, and an alternative explanation? *Human Communication, 12*(2), 187-198.
- Young, S., Kelsey, D., & Lancaster, A. (2011). Predicted outcome value of e-mail communication: Factors that foster professional relational development between students and teachers. *Communication Education, 60*(4), 371-388.
- Zea, M. C., Reisen, C. A., & Díaz, R. M. (2003). Methodological issues in research on sexual behavior with Latino gay and bisexual men. *American Journal of Community Psychology, 31*(3/4), 281-291.
- Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206.
- Zimmerman, R. S., Palmgreen, P. M., Noar, S. M., Lustria, M. L. A., Lu, H.-Y., & Horosewski, M. L. (2007). Effects of a televised two-city safer sex mass media campaign targeting high-sensation-seeking and impulsive-decision-making young adults. *Health Education Behavior, 34*(5), 810-826.

APPENDICES

Appendix A

Instructions for All Participants (Experimental Group and Control Group)

You will now be asked to read a short narrative story about a group of college friends discussing of three topics: nutrition, sexual health, or exercise. Regardless of which article you receive, please read the article very carefully. After you are done, you can begin the survey.

Experimental Group

Narrative About Sexually Transmitted Infections

Title: “How my Friends Saved Me From A Potentially Dangerous Situation”

Dexter, Kimberly, and Ava are college freshmen who have been friends since middle school and tell each other everything. They meet at the same coffee shop every week to talk about topics like school, their families back home, and the people they have been dating. On this particular day, Ava is telling her friends about a guy she recently started dating. “Justin and I have been hanging out a lot more in recent weeks. We’ve been going to movies, eating dinner out together, and I think we might even have sex for the first time soon,” Ava says. Dexter and Kimberly are glad Ava has met someone she likes, but want to be sure she’s making good decisions. “Whoa, this sounds pretty serious,” says Dexter. “Have you had the talk yet? You know, about safe sex – about how he needs to wear a condom?” asks Dexter. “Yeah, what are you going to say to him?” Kimberly asks. “Also, I wonder if he’s been with other girls before. Do you know if he’s been tested for sexually transmitted infections recently?” Ava was very surprised by their questions.

After thinking about it for a moment, Ava asks her friends why she would need to bring up issues like safe sex or testing for sexually transmitted infections with Justin. “Everyone talks about these things with people who they might have sex with,” Kimberly tells Ava. “It’s normal. I would guess 95% of people talk about these topics with sexual partners. It’s just something that everyone does because it’s so important.” Dexter was nodding the entire time. “She’s right. It’s typical to talk about these issues before you have sex with someone,” Dexter says. “If you don’t, you might accidentally become pregnant or get a sexually transmitted infection, which could lead to something horrible like cancer or even death.” Ava is shocked to learn that she just by having unprotected sex she could be at risk for acquiring a disease that could actually kill her.

After the three friends finish their coffee, Ava thanks Dexter and Kimberly for their advice. Driving home, Ava promises herself she will talk to Justin later that day about his sexual history, safe sex and whether he has been tested for sexually transmitted infections. She is a little nervous about how she will bring it up, but knowing that most people have these conversations and the potential consequences of not having these conversations are enough to convince Ava that she had to do it.

Control Group
Narrative About Nutrition

Title: "How My Friends Taught Me To Eat Healthier"

Dexter, Kimberly, and Ava are college freshmen who have been friends since middle school and tell each other everything. They meet at the same coffee shop every week to talk about topics like school, their families back home, and the people they have been dating. On this particular day, Ava is telling her friends that she thinks she has gained weight since she started college. "I feel like I have put on 5 or 10 pounds since the start of the semester," Ava says. "I'm not sure why I'm gaining weight, but I wish I knew so I could do something about it." Dexter and Kimberly think they might know why Kimberly has gained a little bit of weight. "I think the problem is the all-you-can eat dining plan for freshmen," Kimberly says. "Girls our age only need about 2,000 calories a day to maintain a healthy weight. Maybe you're eating more calories than you're used to since you have access to unlimited food.

Dexter chimed in. "It's normal for college freshmen to put on weight," he says. "We're living on our own for the first time, making our own decisions regarding what we eat, and on top of that, we have to try and make time to exercise even though we're taking a lot of classes and working also!" Ava agrees with both Kimberly and Dexter. "So what should I do?" she asks. Kimberly says, "All of the food in the dining hall is full of fat and sugar. You should make a conscious effort to eat more whole grains, fruits, and vegetables." Dexter nodded before adding, "Kimberly is right. And not only do vegetables and fruits have fewer calories than junk food, but they also provide you with vitamins, nutrients, and energy to get through your day."

After the friends finish their coffee, Ava thanks Dexter and Kimberly for their advice. Driving home, Ava promises herself she will start to eat better. She is a little worried that she will not always be able to always make good food choices, but knowing that most college freshmen struggle to maintain their weight makes her realize she's not alone and gives her the confidence that she can follow through on her plan to eat a more wholesome diet.

Appendix B

Georgia State University
Department of Communication
Informed Consent

Title: How College Students Seek Information About Health Issues

Principal Investigator: Dr. Holley Wilkin
Student Investigator: Michael Tannebaum

I. Purpose:

You are invited to participate in a research study. The purpose of the study is to investigate how young adults seek information about health topics such as nutrition, sexual health, and exercise. You are invited to participate because you are a college student. A total of about 400 participants from Georgia State University will be recruited for this study. Participation will require about 20 minutes of your time to complete today's survey and about 15 minutes to complete a second survey in about one month.

II. Procedures:

If you decide to participate, you will complete two questionnaires separated by about three weeks. Both questionnaires will be administered online via Qualtrics. The first survey should take about 20 minutes and the second one should take about 15 minutes.

As compensation for your time, you will be given extra credit in the class in which you learned about this study. Your teacher has agreed to give you 0.5% of the points in the course if you complete only the first survey and 1% of the points in the course if you complete both surveys.

If you do not wish to take this survey or are not 18 years of age, you have the option to complete two alternate assignments in lieu of both surveys for the same amount of extra credit. In lieu of the first survey, you can write a 1-page paper discussing how this class in which you learned about this survey could help you with the career that you want to pursue. In lieu of the second survey, you can write a 1-page paper about why you chose your particular college major (or a college major you are considering).

You are allowed to only take the first survey. However, you are not allowed to only take the second survey. Similarly, you are allowed to complete only the first alternate assignment. However, you are not allowed to complete only the second alternate assignment.

III. Risks:

In this study, you will not have any more risks than you would in a normal day of life.

IV. Benefits:

Participation in this study may not benefit you personally. Overall, we hope to gain information about how young adults acquire information about health issues such as nutrition, safe sex, and exercise.

V. Voluntary Participation and Withdrawal:

Participation in this research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. Whatever you decide, you will not lose any benefits to which you are otherwise entitled.

VI. Confidentiality:

We will keep your records private to the extent allowed by law. Dr. Holley Wilkin and Michael Tannebaum will have access to the information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board, the Office for Human Research Protection). To protect your identity, you will be assigned a 5-digit code, which you will enter when you take both surveys to enable responses to be matched. The 5-digit code will be the last three digits of your student identification number (your Panther ID) and the last two letters of your last name (####AA). For example, a student named John Smith whose Panther ID was 005-15-3141 would use the code “141th.” At the end of the survey, you will be directed to a second survey where you will be asked to enter your name so we can inform your teacher of your participation. There will be no way to link your name to your responses.

We will use the aforementioned code on all study materials instead of your name. The information you provide will be stored on a password-protected website. Your name and other facts that might point to you will not appear when we present this study or publish its results. All findings will be summarized and reported in group form to further ensure individuals cannot be matched to answers. You will not be identified personally.

VII. Contact Persons:

Contact Dr. Holley Wilkin (hwilkin@gsu.edu; 404-413-5657) and Michael Tannebaum (mtannebaum1@student.gsu.edu; 770-313-5482) if you have questions, concerns, or complaints about this study. You can also call if you think you have been harmed by the study. Call Susan Vogtner in the Georgia State University Office of Research Integrity at 404-413-3513 or svogtner1@gsu.edu if you want to talk to someone who is not part of the study team. You can talk about questions, concerns, offer input, obtain information, or suggestions about the study. You can also call Susan Vogtner if you have questions or concerns about your rights in this study.

VIII. Copy of Consent Form to Subject:

If you would like a copy of this consent form, please print it now. You may also e-mail the student investigator, Michael Tannebaum (mtannebaum1@student.gsu.edu) for a copy.

If you are willing to volunteer for this research and are at least 18 years of age, please click the box that says “I agree”. You will then begin the survey. If you are unwilling to volunteer for this research or are not at least 18 years of age, please check the box that says, “I disagree.”

Appendix C

To begin, you will be assigned a 5-digit code, which will be used to keep your identity private and to match your responses from this survey with the one you will take in three weeks. The 5-digit code is the last three digits of your student identification number (your Panther ID) and the last two letters of your last name (###AA).

Please type your 5-digit code: _____ (Example: 412DY)

Section A: Demographics

To begin, we are going to collect some information about your background. None of this information will be matched to your responses.

1. Are you male or female? ___ Male ___ Female
2. How old are you? _____ years old
3. What is your major?

___ Speech	___ Journalism	___ Psychology	___ English
___ Sociology	___ Accounting	___ Economics	___ Other (please indicate)
4. With what race/ethnicity do you most closely identify? (Check all that apply)

___ East Asian/Pacific Islander	___ Hispanic/Latino(a)	___ White/Caucasian
___ Black/African American	___ Native American	___ Other (please indicate)
5. To what extent do you consider yourself a religious person?

___ Very religious	___ Moderately religious	___ Slightly religious	___ Not religious
--------------------	--------------------------	------------------------	-------------------
6. What is your current religious preference? _____
 What specific denomination is that? _____
- 7a. What is the highest level of education your mother has achieved?

___ Some high school	___ High school graduate	___ Some college	___ College graduate
___ Advanced college degree	___ Don't know		
- 7b. What is the highest level of education your father has achieved?

___ Some high school	___ High school graduate	___ Some college	___ College graduate
___ Advanced college degree	___ Don't know		
8. Please estimate your parents' annual household income:

___ Less than \$25,000	___ \$25,000-\$49,000	___ \$50,000-\$99,000	___ \$100,000+
------------------------	-----------------------	-----------------------	----------------
9. How long have you lived in the United States?

___ Since birth	___ Other (please indicate the number of years)
-----------------	---
10. Where do you live?

___ On campus	___ Off campus alone or with roommates	___ Off campus with parents	___ Other
---------------	--	-----------------------------	-----------

Instructions: Think of a current romantic partner. If you do not have a current romantic partner, think of a current non-romantic sexual partner, a former romantic partner, or a friend with whom you would like to have a romantic relationship. The following questions will ask you to report on various details regarding your relationship (or desired

relationship) with that individual. We are curious to learn people’s opinions about their partner’s sexual health.

To begin, please select the status of the individual:

- (1) Someone you are dating and have a sexual relationship with
- (2) Someone you are NOT dating and have a sexual relationship with
- (3) Former romantic partner
- (4) Friend with whom you would like to have a romantic relationship

1. How old is the individual? _____ years old
2. What is the gender of the individual? ____ Male ____ Female
3. Have you ever been sexually active with the individual? _____ NO _____ YES
4. Are you currently sexually active with the individual? _____ NO _____ YES
5. If you answered “yes” to question 1 or 2, how often do/did you practice safe sex (e.g., using condoms, dental dams, etc.). *1 = Never to 7 = Always.*
6. Do you believe the individual has an STI? _____ YES _____ NO
7. How certain are you about your answer to the previous question? *1 = not at all certain to 7 = very certain*

[PARTICIPANTS READ NARRATIVE – SEE APPENDIX A].

Section B: Narrative Questions

Select the topic of the story you just read: (1) Sex, (2) Diet, (3) Exercise.

Indicate how much you agree or disagree with the following statements:

1. Young adults usually know most of the details of their partners’ sexual health and history.
[1 = Strongly disagree, 7 = Strongly agree]
2. Most young adults are comfortable asking partners whether they have been tested for sexually transmitted infections.
[1 = Strongly disagree, 7 = Strongly agree]
3. I can relate to the things the main character in the story is going through.
[1 = Strongly disagree, 7 = Strongly agree]

Section C: Issue Importance

Indicate how much you agree or disagree with the following statement:

1. It is important that I know about my partner’s sexual health such as their STI history.
[1 = Strongly disagree, 7 = Strongly agree]

Section D: Anxiety about contracting an STI

This section asks two questions about your thoughts on your risk of contracting an STI.

1. How concerned are you that you will become infected with an STI if you do not ask your partner about his or her sexual health?

[1 = Not at all concerned, 5 = Very concerned]

2. How worried are you that you will become infected with an STI if you do not ask your partner about his or her sexual health?

[1 = Not at all worried, 5 = Very worried]

Section E: Uncertainty Discrepancy

This section asks you about how much information you have and how much information you want in regard to your partner's sexual health.

1. How much information do you know about your partner's sexual health? [1 = Nothing, 7 = Everything].

2. How much information do you want to know about your partner's sexual health? [1 = Nothing, 7 = Everything].

3. Please rate the extent to which you would like to change your level of certainty regarding your partner's sexual health. [1 = I wish I knew a lot less about it, 7 = I wish I knew a lot more about it].

4. Please rate the extent to which you would like to change your level of certainty regarding your partner's sexual health. [1 = I want to know a lot more about it, 7 = I want to know a lot less about it].

5. How would you rate your level of knowledge about your partner's sexual health? [1 = Less than I want, 5 = More than I want].

Section F: Desired Knowledge

The following question asks you to consider how you feel about the knowledge you have about your partner's sexual health.

1. I know too much information about my partner's sexual health.

[0 = Disagree; 1 = Agree]

Section G: Anxiety Regarding the Uncertainty Discrepancy

This section asks you to consider how anxious you feel when you think about your partner's sexual health and history.

1. How anxious does it make you to think about the similarity/difference between how much you'd like to know and how much you actually know about your partner's sexual health?

[1 = Not at all anxious, 5 = Extremely anxious]

2. How anxious does it make you to think about how much/little you know about your partner's sexual health?
[1 = Not at all anxious, 5 = Extremely anxious]
3. My heart beats fast with anxiety when I think about how much/little I know about my partner's sexual health.
[1 = Strongly disagree, 5 = Strongly agree]
4. Thinking about how much/little I know about my partner's sexual health is calming. [R]
[1 = Strongly disagree, 5 = Strongly agree]
5. The size of the similarity/difference between how much I know and how much I'd like to know about my partner's sexual health is _____.
[1 = Extremely comforting, 5 = Extremely anxiety producing]

Section H: Fear Regarding the Uncertainty Discrepancy

This section asks you to consider how scared you feel when you think about your partner's sexual health and history.

1. How scared does it make you to think about the similarity/difference between how much you'd like to know and how much you actually know about your partner's sexual health?
[1 = Not at all scared, 5 = Extremely scared]
2. How scared does it make you to think about how much/little you know about your partner's sexual health?
[1 = Not at all scared / 5 = Extremely scared]
3. My heart beats fast with fear when I think about how much/little I know about my partner's sexual health.
[1 = Strongly disagree / 5 = Strongly agree]
4. Thinking about how much/little I know about my partner's sexual health is assuring. [R]
[1 = Strongly disagree / 5 = Strongly agree]
5. The size of the similarity/difference between how much I know and how much I'd like to know about my partner's sexual health is _____.
[1 = Extremely assuring/ 5 = Extremely scary]

Section I: Worry Regarding the Uncertainty Discrepancy

This section asks you to consider how worried you feel when you think about your partner's sexual health and history.

1. How worried does it make you to think about the similarity/difference between how much you'd like to know and how much you actually know about your partner's sexual health?
[1 = Not at all worried, 5 = Extremely worried]
2. How worried does it make you to think about how much/little you know about your partner's sexual health?
[1 = Not at all worried / 5 = Extremely worried]
3. My heart beats fast with worry when I think about how much/little I know about my partner's sexual health.
[1 = Strongly disagree / 5 = Strongly agree]

4. Thinking about how much/little I know about your partner's sexual health is comforting. [R]
[1 = Strongly disagree / 5 = Strongly agree]
5. The size of the similarity/difference between how much I know and how much I'd like to know about my partner's sexual health is _____.
[1 = Extremely comforting/ 5 = Extremely worrisome]

Section J: Guilt Regarding the Uncertainty Discrepancy

This section asks you to consider how guilty you feel when you think about your partner's sexual health and history.

1. How guilty does it make you to think about the similarity/difference between how much you'd like to know and how much you actually know about your partner's sexual health?
[1 = Not at all guilty, 5 = Extremely guilty]
2. How guilty does it make you to think about how much/little you know about your partner's sexual health?
[1 = Not at all guilty / 5 = Extremely guilty]
3. My heart beats fast with guilt when I think about how much/little I know about my partner's sexual health.
[1 = Strongly disagree / 5 = Strongly agree]
4. Thinking about how much/little I know about your partner's sexual health is soothing. [R]
[1 = Strongly disagree / 5 = Strongly agree]
5. The size of the similarity/difference between how much I know and how much I'd like to know about my partner's sexual health is _____.
[1 = Extremely soothing/ 5 = Extremely guilt-producing]

Section K: Outcome Expectancies

This section asks you to think about what would happen if you talked to your partner about his or her sexual health.

1 = A lot more negatives than positives, 7 = A lot more positives than negatives

Outcome expectancies for direct information seeking.

1. Talking to my partner directly about his or her STI status would produce:
2. Asking my partner what he or she thought about his or her STI status would produce:
3. Approaching my partner to ask about his or her STI status would produce:

Outcome expectancies to do nothing:

1. Doing nothing about the situation would produce:
2. Doing nothing to figure out about my partner's STI status would produce:
3. Doing nothing to learn about my partner's STI status would produce:

Outcome expectancies to actively avoid information:

1. Deliberately not talking to my partner directly about his or her status would produce:

2. Deliberately not asking my partner what he or she thought about his or her STI status would produce:
3. Avoiding talking to my partner about his or her STI status would produce:

Section L: Efficacy

This section asks you to think about what how easy or difficult it would be for you to talk to your partner about his or her sexual health.

Communication Efficacy

1 = Strongly disagree, 7 = Strongly agree

1. I have the ability to approach my partner to ask about his/her sexual health.
2. I don't have the communication skills to ask my partner about his/her sexual health. [R]
3. I am confident in my ability to ask my partner about his/her sexual health.
4. I am confident in my ability to ask the right questions to my partner about his/her sexual health.

Coping Efficacy

1 = Strongly disagree, 7 = Strongly Agree

5. I feel I can manage discovering whether my partner has an STI.
6. I would not be able to deal with being at risk for an STI. [R]
7. I have no doubt that I could handle finding out that I am at risk for an STI.
8. I feel confident that I could cope with discovering that I am at risk for an STI.
9. I feel that I could cope with the news that that I am at risk for an STI.

Target efficacy – Ability

1 = Strongly disagree, 7 = Strongly Agree

10. My partner can provide me with information about my risk for an STI.
11. I don't think my partner would a useful source for information about my risk for an STI. [R]
12. I don't feel my partner has the information necessary to answer questions about my risk for an STI. [R]

Target efficacy – Honesty

1 = Strongly disagree, 7 = Strongly Agree

13. If asked, my partner would be completely honest about my risk for an STI.
14. If asked, my partner would not give me the "full story" about my risk for an STI. [R]
15. If asked, my partner would tell me everything s/he knew about my risk for an STI.

Section M: Information seeking from partner (retrospective) *

Consider your *entire history* with the individual when you answer the next three questions.

1. During my interaction with my partner, I have sought
[1 = No, 7 = A lot of] information about my risk for STIs.
2. How many questions have you asked your partner about your risk for an STI?
[1 = No questions, 7 = A lot of questions]
3. To what extent have you tried to get information from your partner about your risk for an STI?
[1 = Not at all, 7 = A lot]

Section N: Information seeking intent from partner

Think about what you plan to do in your upcoming interactions with your partner *during the next three weeks* and rate the extent to which each statement reflects what you plan to do.

1. How likely are you to ask your partner directly about his or sexual health?
[1 = Not at all, 5 = Very likely]
2. How much effort will you exert to seek information from your partner in the next three weeks about his or her sexual health?
[1 = No effort, 5 = A lot of effort]
3. To what extent will you probe for more insights in the next three weeks from your partner about his or her sexual health?
[1 = Not at all, 5 = A lot of probing]
4. How likely do you intent to talk to your partner in the next three weeks about his or sexual health?
[1 = Not at all likely, 5 = Very likely]

Section O: Partner Communication

Consider how many times you and your partner have discussed each of the following five items within the last 6 months.

Note: If you have not had a sex partner in the past six months, please select “Not Applicable” for each item. If you have had a sex partner but have not had these discussions, select “0”.

0 (*never*), 1 (*sometimes/1-3 times*), 2 (*often/4-6 times*), 3 (*a lot/7 or more times*), Not Applicable

1. How to prevent pregnancy
2. How to use condoms
3. How to prevent the AIDS virus
4. How to prevent STIs
5. Your partner’s sexual history

Section P: Sexual Assertiveness for Communication of HIV Risk-Related Information

This section asks you to reflect on how often willing you would be to ask your partner about different sexual health issues.

1 = Never, 5 = All or almost all of the time

1. I would ask if I want to know if my partner ever had an HIV test.
2. I would ask my partner about the AIDS risk of his or her past partners, if I want to know.
3. I would ask if I want to know if my partner ever had a sexually transmitted disease.
4. If I want to know, I would ask my partner if he or she ever had sex with someone of the same gender.
5. I would ask if I want to know if my partner ever had sex with someone who shoots drugs with a needle.

Section Q: Physician Communication

This section asks you to consider how likely you are to ask a doctor about sexual health issues in *the next six months*.

1. How likely is it that you will seek information from your doctor in the next six months about STI prevention or risks? [1 = Not at all, 5 = Very likely]
2. How much effort will you exert to seek out information from your doctor in the next six months about the STI prevention or risks? [1 = Not at all, 5 = A lot of effort]
3. To what extent will you probe for more insights from your doctor in the next six months about the STI prevention or risks? [1 = Not at all, 5 = A lot of probing]
4. How likely are you to talk to your doctor in the next six months about STI prevention or risks? [1 = Not at all, 5 = Very likely].

Section R: STI Testing and History

The next section asks you about your history of STI testing and diagnoses.

1. Have you ever been tested for an STI? ___NO___YES___ UNSURE
2. If you answered 'yes' to question 1, when was the last time you were tested for an STI?
___ < 1 month ago, ___ 1-6 months ago, ___ 6-12 months ago, ___ 1+ year ago
3. Have you ever been diagnosed with a human papillomavirus? ___ NO ___ YES ___ UNSURE
4. Have you ever been diagnosed with HIV? ___ NO ___ YES ___ UNSURE
5. Have you ever been diagnosed with herpes? ___ NO ___ YES ___ UNSURE
6. Have you ever been diagnosed with chlamydia? ___ NO ___ YES ___ UNSURE
7. Have you ever been diagnosed with gonorrhea? ___ NO ___ YES ___ UNSURE
8. Have you ever been diagnosed with syphilis? ___ NO ___ YES ___ UNSURE

Appendix D

Instructions: Thank you for taking the second survey. As with the first survey, we are interested in understanding how young adults seek sexual health information from their partners and from other places like the media or their friends.

To begin, enter the 5-digit code you provided when you completed the first survey. As a reminder, the 5-digit code is the last three digits of your student identification number (your Panther ID) and the last two letters of your last name (###AA).

Please type your 5-digit code: _____ (Example: 412DY)

Now, think about THE SAME person you thought of when you completed the first survey. As with the first survey, please indicate the current status of the relationship you have with the individual:

- (1) Someone you are dating and have a sexual relationship with
- (2) Someone you are NOT dating and have a sexual relationship with
- (3) Former romantic partner
- (4) Friend with whom you would like to have a romantic relationship

[PARTICIPANTS WHO SELECTED 1 OR 2 WILL BE DIRECTED TO SECTION A. PARTICIPANTS WHO SELECTED 3 OR 4 WILL SKIP SECTIONS A-C AND BEGIN WITH SECTION D]

Section A: Direct Information seeking

Since the first survey, indicate the extent to which the statements below describe your interactions with your partner. To make the questions shorter, we've used "the issue" instead of "my partner's sexual health and history" for this section.

1 = Completely false, 2 = Somewhat false, 3 = Slightly false, 4 = Neither true nor false, 5 = Slightly true, 6 = Somewhat true, 7 = Completely true, Not Applicable

1. I asked my partner what he or she thought about the issue.
2. I approach my partner to ask about the issue.
3. I talked to my partner about what he or she thought about the issue.

Section B: Indirect Information Seeking

Since the first survey, indicate the extent to which the statements below describe your interactions with your partner. To make the questions shorter, we've used "the issue" instead of "my partner's sexual health and history" for this section.

1. I just sat back and saw what happened with the issue.
2. I just let communication about the issue unfold naturally.

Section C: Information Avoidance

Since the first survey, indicate the extent to which the statements below describe your interactions with your partner. To make the questions shorter, we've used "the issue" instead of "my partner's sexual health and history" for this section.

1. I went out of my way to avoid information about the issue.
2. I ignored information from my partner about the issue.
3. I made an attempt to avoid seeking information about the issue.

Section D: Mediated Information Channels

Since the first survey, how often did you try to find information about STIs or safe sex from each of the following sources?

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often

1. Internet (excluding social media sites)
2. Social media sites
3. Television
4. Newspapers or magazines
5. Books

Section E: Other Interpersonal Channels

Since the first survey, how often did you try to find information about STIs or safe sex from each of the following sources?

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often

1. Friends
2. Family
3. Doctor

Section F: STI Testing

1. *Since the first survey*, have you been tested for an STI? ___ Yes ___ No ___ Not sure

Section G: Self-disclosure

For this section, there are four questions that ask you to consider if you would be willing to tell your partner if you were diagnosed with an STI.

1 = Strongly Disagree, 7 = Strongly Agree

1. If I had a sexually transmitted infection, I would tell my partner even if he or she did not ask.
2. If I had a sexually transmitted infection, I would tell my partner if he or she asked.
3. I would feel guilty if I had a sexually transmitted infection and did not tell my partner.
4. I would feel anxious if I had a sexually transmitted infection and did not tell my partner.

Section H: Shame

For this section, there are six questions that ask you how you feel about sexually transmitted infections (STIs).

1 = Strongly disagree, 7 = Strongly Agree

1. People with sexually transmitted infections have been hanging with the wrong crowd.
2. Getting a sexually transmitted infection means I don't keep myself clean.
3. People with sexually transmitted infections should be ashamed of themselves.
4. Getting a sexually transmitted infection means a person is dirty.
5. Getting a sexually transmitted disease means I don't take care of myself.
6. Getting examined for a sexually transmitted disease means I'm not clean.

Section I: Stigma

For this section, there are six questions that ask you about how others would feel if they knew you had a sexually transmitted infection (STI).

1 = Not at all, 4 = Very Much

1. If you had an STI, people would avoid you?
2. If you had an STI, people would think you were unclean?
3. If you had an STI, other people would think badly of you?
4. If you had an STI, other people would not want to be friends with you?
5. If you had an STI, other people would be disgusted by you?
6. If you had an STI, other people would be uncomfortable around you?

Section J: Parent Communication

This section asks you to reflect on how often you and your parents talked about five sexual health issues when you were growing up.

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often

1. Sex
2. How to use condoms
3. Protecting yourself from STIs
4. Protecting yourself from the AIDS virus
5. Protecting yourself from becoming pregnant (or from your partner becoming pregnant).

Section K: Friend Communication

This section asks you how often you and your friends talk about five sexual health issues.

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often

1. Sex
2. How to use condoms
3. Protecting yourself from STIs
4. Protecting yourself from the AIDS virus
5. Protecting yourself from becoming pregnant (or from your partner becoming pregnant).