A Hierarchical Generalized Linear Model of Condom Use among Latino MSM: Constructs for HIV Counseling Interventions

by Robert J. Zeglin

B.S. in Psychology, May 2009, University of Pittsburgh at Johnstown
M.A. in Counseling, January 2012, Montclair State University

A Dissertation submitted to

The Faculty of
The Graduate School of Education and Human Development
of The George Washington University
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

January 31, 2016

Dissertation directed by

Kenneth C. Hergenrather
Professor of Counseling

The Graduate School of Education and Human Development of The George Washington University certifies that Robert J. Zeglin has passed the Final Examination for the degree of Doctor of Philosophy as of November 23, 2015. This is the final and approved form of the dissertation.

A Hierarchical Generalized Linear Model of Condom Use among Latino MSM: Constructs for HIV Counseling Interventions

Robert J. Zeglin

Dissertation Research Committee:

Kenneth C. Hergenrather, Professor of Counseling, Dissertation Director

Paul J. Poppen, Professor of Psychology, Committee Member

Jaehwa Choi, Associate Professor of Educational Research, Committee Member

Dedication

This project, the work that went into it and the product here now, is dedicated to four outstanding people: Mom, Dad, Kirk, and Amy. I am lucky enough to have the unconditional love and support of four wonderful parents. Without you, I could not have achieved the many things I have achieved, had the tremendous experiences that I have had, or learned the valuable lessons that I have learned. This is for and because of you.

Thank You & I Love You

Acknowledgments

I think, first, that it is important to acknowledge the person who has bore the brunt of the canceled plans, late nights, and requests to “read this and tell me if it makes sense” that went into completing this project. So thank you, Nikki. You took all of the above in stride and never did so without a smile. I would not have survived the grind of the past year without your unwavering reassurance and support. You were (and are) a tremendous source of strength for me. I am looking forward to tackling whatever comes next for us, especially so that I can return the favor.

I would also like to acknowledge a small band of wonderful individuals who, at different points in my journey, contributed so much to my life and to my work. Cheri, Mary, and the “COBRAS” (Carolyn, Bina, and Susan), thank you for pushing me to continue this work and for supporting my passion along the way. Cheri, thank you for always being a solid center of gravity when I sometimes (you might say often) lost my way. Mary, we have spent three years in the academic trenches together; a significant proportion of variance (thought you would appreciate the quant term) of my growth both personally and professionally is thanks to your friendship. And the “COBRAS,” thank you for the mentorship that quickly became friendship. I’m so very lucky to count you three among my friends.

I have been equally lucky within my professional life, having had the opportunity to work with (and for) some amazing individuals. My very first professional inspiration came from Dr. Sharon Bertsch-Walstad at UPJ. You very graciously agreed to take me on as a research assistant, instilling a passion for research and inquiry that has persisted all these years later. This dissertation is the very first branch on a tree that you planted

almost 10 years ago. Around the same time, Dr. Reece Rahman ignited in me a curiosity for the clinical world of psychology. Your wisdom, humor, and love for clinical work had a resounding impact on me, directing me toward the field of clinical mental health counseling.

A short time later, while in New Jersey, Dr. Kathy Gainor at Montclair State University became a model for me of what a counseling educator ought to be. You always took the time to provide feedback, encouragement, and guidance. Any future counseling students that visit my office are able to do so because of a comment that you made to me during one of my many visits to your office: "Go get your PhD." As with all feedback that you gave me, I clearly followed it. At the same time, Ms. Gail Sternitzke encouraged my clinical passion, offering me the opportunity to serve as Director of a wonderful mental health day program for individuals with developmental disabilities. Thank you for taking a (rather large) chance on me and for supporting me as we worked to make the program better and stronger. Your guidance and support showed me how passion, creativity, and collaboration can improve the lives of our clients.

Finally, here at GWU, I had the extreme pleasure of working for and with Dr. Kenneth Hergenrather. I cannot thank you enough for all of the time and effort that you dedicated to my growth as a counselor, a researcher, and a professional. These last three years have been incredibly rewarding because of your mentorship. I am left, I suppose, with one final question for you: What is a sea monster's favorite snack?

To all of these people and more, I owe a remarkable thanks.

Abstract of Dissertation

A Hierarchical Generalized Linear Model of Condom Use among Latino MSM: Constructs for HIV Counseling Interventions

There are approximately 1.2 million people in the United Stated living with HIV/AIDS. At the end of 2012, 75.3% of persons living with HIV/AIDS (PLWHA) were males, with the majority of those being men who have sex with men. The rate of new HIV diagnoses among males is more than four times greater than the rate among females. Of new HIV diagnoses in 2013, approximately 67% were among Black/African American and Hispanic/Latino individuals. Though the total number of Black males living with HIV is notably higher, a greater proportion of Latino men are infected through sexual activity with other men. Unprotected anal intercourse (UAI) is the riskiest sexual activity for contracting HIV. The present study utilized hierarchical generalized linear modeling, with secondary data, to assess the multi-level effects of Latino cultural sexual beliefs regarding condom use across sexual encounters. Results suggest that Latino male sexual beliefs associated with sexual acquiescence moderated the influence of arousal on the likelihood of unprotected insertive anal intercourse and moderated the influence of relationship closeness on the likelihood of unprotected receptive anal intercourse (URAI). The study findings suggest that beliefs associated with sexual acquiescence also had a direct effect on the likelihood of URAI. The application of the study findings for counseling professionals include: 1) the proposed creation of an HIV-prevention counseling intervention that prioritizes the holistic sexuality of clients and 2) judiciously incorporating sexuality coursework in the formal training of counselors.

Table of Contents

Dedication iii

Acknowledgments iv

Abstract of Dissertation vi

List of Figures ix

List of Tables x

Chapter 1: Introduction 1

Summary of Problem 1

Knowledge Gaps 5

Theoretical Framework 6

Research Questions and Hypotheses 8

Implications of Study 10

Summary of Methodology 11

Key Definitions 13

Chapter 2: Literature Review 15

HIV 15

Men Who Have Sex with Men 23

HIV Risk Factors 24

HIV Prevention 29

Role of Counseling in HIV Prevention 34

Social Cognitive Theory 37

Social Cognitive Theory and the Current Study 43

Data Structure 46

Recommendations for Future Inquiry 48
Summary and Current Study 50
Chapter 3: Methods 52
Research Questions and Hypotheses 52
Participants 54
Measures 56
Procedure 60
Analysis 61
Chapter 4: Results 67
Research Questions and Hypotheses 67
Exploratory Factor Analysis of LSBS 68
Descriptive Statistics 73
Hierarchical Generalized Linear Models 75
Summary 81
Chapter 5: Discussion 83
Discussion and Interpretation 83
Implications for Theory 98
Implications for Practice 99
Counseling Education Policy Implications 110
Considerations for Future Research 111
Limitations 114
Conclusion 115
References 116

List of Figures

Figure 1.1 9

Figure 2.1 38

Figure 2.2 43

Figure 3.1 54

Figure 4.1 71

Figure 4.2 71

Figure 4.3 71

Figure 4.4 74

Figure 4.5 77

Figure 4.6 78

Figure 4.7 80

Figure 4.8 82

Figure 5.1 85

Figure 5.2 101

List of Tables

Table 3.1 56

Table 3.2 58

Table 3.3 66

Table 4.1 72

Table 4.2 74

Table 4.3 75

Table 4.4 76

Table 4.5 79

Table 5.1 103

Chapter 1: Introduction

December 1st of every year, the White House displays a large red ribbon in the front portico to recognize the 39 million people worldwide, including 658,000 in the United States, that have died from complications associated an incurable disease (Centers for Disease Control and Prevention [CDC], 2014b; United States Department of Health and Human Services [USDHHS], 2015a; World AIDS Day, 2015). This disease, later classified as Acquired Immunodeficiency Syndrome (AIDS) was first reported by the CDC in 1981 (see CDC, 1981). Eventually, the cause of this epidemic was identified as a small retrovirus, the Human Immunodeficiency Virus (HIV). HIV is a sexually transmitted infection (STI); 9 out of 10 cases of HIV are contracted from sexual contact (CDC, 2015a; USDHHS, 2015a). The current study seeks to add to the literature base informing counseling interventions to reduce transmission of HIV via sexual contact. The information gained from this study is anticipated to aid in the development of counseling interventions for Latino men who have sex with men (MSM).

Summary of Problem

Approximately 1.2 million people in the United States are living with HIV/AIDS, with approximately 50,000 new cases each year (CDC, 2015b). In 2013, 57% of these new cases were in individuals between the ages of 20 and 40. Approximately 67.5% of new HIV diagnoses in 2013 were among Black/African American and Hispanic/Latino individuals. The rate of new HIV diagnoses among males (29.5 per 100,000) is more than four times greater than the rate among females (6.9 per 100,000). Of all people living with HIV/AIDS (PLWHA) by the end of 2012, 75.3% were males (CDC, 2015b). According to the CDC (2014a), MSM are “more severely affected by HIV than any other

group" (para. 1) in the United States. The term MSM is a classification for men who, regardless of their identified sexual orientation (e.g., homosexual, bisexual, heterosexual), report having had sexual contact with other men (Doll et al., 1992). This classification helps to capture men who are engaging in sexual activity with other men yet may not identify as homosexual or bisexual, either due to cultural norms or being on the "down low" (i.e., identifying as straight and hiding same-sex behavior; Martinez & Hosek, 2005; Wolitski, Jones, Wasserman, & Smith, 2006). MSM comprise approximately two thirds of new HIV cases each year and more than have of all PLWHA (CDC, 2014a). In a study of 8,153 MSM in 21 major metropolitan areas, 19% of participants were HIV+ and 44% of those were unaware of their status (CDC, 2010).

Among MSM, race is associated with infection rates, with racial minority MSM being disproportionally impacted by HIV (CDC, 2010, 2013c; Prejean et al., 2011). In 2013, there were 8,097 Latinos males diagnosed with HIV, a little more than half the number of Black males diagnosed with HIV. However, of the cases with documented known routes of transmission, 68.1% of the Latino males HIV were infected through male-to-male sexual contact, while 57.9% of Black males were infected by male-to-male sexual contact (CDC, 2015b). It is clear that continued inquiry into the facilitating variables of the sexual transmission of HIV among MSM, particularly Latino MSM, is crucial.

People living with HIV/AIDS can experience varied health effects as a result of the disease or from opportunistic infections that take advantage of the body's compromised immune system (Adler, 2001; USDHHS, 2015a; Volberding et al., 2010). The consequences of these effects can impact an individual's mental health, physical

health, and neurological health (CDC, 2015a; USDHHS, 2015a; Volberding et al., 2010). Approximately half of PLWHA have a diagnosed comorbid mood/anxiety or drug abuse disorder (Gaynes, Pence, Eron Jr, & Miller, 2008; Pence, Miller, Whetten, Eron, & Gaynes, 2006). This includes a prevalence rate of approximately 22% for depression, nearly twice the rate than among the general population (Orlando et al., 2002). Examples of common physical health effects for PLWHA include fatigue, diarrhea, difficulty completing activities of daily living (ADLs), and body shape changes (Erlandson et al., 2014; Persson, 2005; Smith & Vazquez, 2010; Sullivan & Dworkin, 2003; Tramarin et al., 2004; United States Department of Veterans Affairs, 2015). Heaton et al. (2010), in a sample of 1,555 PLWHA from across the country, reported that more than half displayed symptoms of HIV-associated neurocognitive disorders (HAND). HAND includes difficulties with learning, maintaining attention, and the retrieval of new information. Neurocognitive impairments can also affect executive functioning, impairing an individual's ability to retrieve words or to plan, execute, or monitor behavior (American Psychiatric Association, 2013; Ellis et al., 2009; Antinori et al., 2007).

Of all HIV infections in the United States, approximately 93% are transmitted by sexual contact. The remaining infections are predominantly contracted via injection drug use. Very few HIV infections, less than 1%, are transmitted through childbirth, occupational exposure, and blood/organ/tissue transplants (CDC, 2015a; USDHHS, 2015a). Because of this, significant research has been done in HIV prevention targeting sexual risky behaviors. The risk of transmission is not the same for all sexual activity; some activities are riskier than others. Unprotected anal intercourse (UAI) is the riskiest of all sexual activity. Unprotected receptive anal intercourse (URAI; i.e., individual's

partner inserts penis into his anus) is riskier than unprotected insertive anal intercourse (UIAI; i.e., individual inserts his penis into partner's anus). This is because the mucous membrane of the anus can be severely irritated during anal intercourse and has been shown to be rich in t-cells, being more densely saturated with t-cells than semen and blood. Therefore, if HIV-infected ejaculate contacts the irritated mucous membrane, seroconversion is possible (CDC, 2015a; Li et al., 2010; Sheth & Thorndycraft, 2009; USDHHS, 2015a; Zuckerman et al., 2004). Seroconversion of an insertive partner from an infected receptive partner is also possible, however is considerably less likely. The mucous membrane of the penile meatus is smaller (i.e., less surface area) and less likely to become irritated during sexual activity (CDC, 2015a; Sheth & Thorndycraft, 2009; USDHHS, 2015a).

The risk of transmission of HIV during anal intercourse is significantly lessened with condom use (McKay, 2007). This is because condoms provide an "essentially impermeable barrier to particles the size of STD pathogens" (CDC, 2013a, p. 1). Consistent condom use is more than 70% effective at protecting against HIV during receptive anal intercourse and insertive anal intercourse (Smith, Herbst, Zhang, and Rose, 2015). Put succinctly, condoms are "the single, most efficient, available technology to reduce the sexual transmission of HIV and other sexually transmitted infections" (The Joint United Nations Programme on HIV/AIDS, 2009, para. 2). Condom use during risky sexual encounter can significantly reduce the chance of contracting an STI. Accordingly, aligning to social cognitive theory and social action theory, condom use is an example of a public health self-regulatory goal (Bandura, 2001; Ewart, 1991; Latkin & Knowlton, 2005). For this reason, it is important within the field of HIV prevention to

continue research attempting to identify predictors of condom use and of non-condom use (i.e., UAI). This knowledge can be translated into counseling interventions by identifying viable constructs to be targeted in said interventions. von Sadovszky et al. (2014) suggested tailoring such interventions to the participants' culture to improve its effectiveness. Additionally, Warren et al. (2008) highlighted the need for rigorous attention to the cultural correlates of UAI among MSM and aligned this with a call for culturally sensitive interventions. Rhodes et al. (2011), through focus group methodology, suggested that Latino cultural norms may be associated with UAI. In the aggregate, this literature suggests that culture is an important construct to include in research hoping to contribute to the development of interventions designed to prevent UAI. Readers can find a more detailed literature review in Chapter 2.

Knowledge Gaps

Despite the sizable body of literature regarding Latino MSM, UAI, and counseling interventions, there remain significant gaps in the knowledge base. These are briefly outlined below.

1) Knowledge Base of Counselors: Despite the general density of information within the literature regarding culture and condom use, no research was located that assessed the degree to which professional counselors (e.g., LPC, LMHC) are aware of this information and/or are incorporating this information into their work with Latino MSM. If counselors are unfamiliar with and/or not incorporating the information, this may indicate a strong need for the development of an intervention that includes Latino cultural beliefs among its constructs.

2) Latino Cultural Norms: There is presently, as mentioned above, emerging

evidence that Latino cultural beliefs are associated with UAI. What remain unknown are the specific norms within Latino culture that predict UAI.

3) Measuring UAI: Challenges in data collection and population availability confound some measures of UAI. Assessing condom use at last sexual contact, for example, is an inelegant measure because it is insensitive to behavior patterns (i.e., condom use or non-use at the most recent sexual contact could be the exception and not the rule). Multilevel analyses, with sexual encounter nested within individual, can address this.

4) Latino Cultural Norms Moderating Effects: The current literature largely investigates the direct effect of Latino cultural beliefs on condom use. There is a need to assess whether and to what extent Latino cultural norms influence decision-making in varying environmental contexts via moderating effects.

5) Effectiveness and Efficacy of Culturally Sensitive Interventions: Aligning with recommendation #2 above, interventions deigned to promote counseling as prevention will need to be rigorously tested and eventually validated. At present, there is still a need to complete the first step in this process of identifying viable constructs to include in eventual interventions.

Theoretical Framework

Because the research questions posed in the current study involve personal characteristics that are hypothesized to influence decision-making processes during a particular sexual encounter, the theoretical framework guiding this study needs to be able to account for multilevel interactions between person and environment. Social cognitive theory (Bandura, 1986) is able to account for this interaction through its concept of

reciprocal determinism. Reciprocal determinism is the process by which an individual's behavior, an individual's personal characteristics, and environmental influences simultaneously affect each other (Bandura, 1986; 2012). This theory suggests, therefore, that an individual's personal characteristics and environmental influence cooperatively interact to determine one's behavior.

An individual's personal characteristics can shape behavior via the individual's beliefs towards the behavior (Ajzen, 1985, 1991). Research has shown this to be true regarding condom use among MSM (Franssens, Hospers, & Kok, 2009; Kok, Hospers, Harterink, & De Zwart, 2007). Calabrese, Reisen, Zea, Poppen, and Bianchi (2012), for example, reported that Latino men who believed that wearing a condom resulted in a loss of sexual pleasure were significantly more likely to engage in UAI. The beliefs associated with a particular behavior can be derived from varying sources and influences (Ajzen, 1985; Bandura, 1986; 2012); this can include one's culture (Bandura, 2002). Cultural beliefs toward behavior can influence the execution or non-execution of that behavior. Moreover, congruent with reciprocal determinism, these cultural beliefs can and do interact with environmental influences to guide behavior (Bandura, 1986; 2002; 2012).

Environmental influences provide the context for behavior (Bandura, 2012). Social action theory (Ewart, 1991) highlights the effect of context on health-behavior decision-making, noting the importance of "social-contextual influences that constrain or enhance self-regulatory mechanisms" (p. 932). Results reported by Zea et al. (2009) supported this, showing that contextual factors present within a particular sexual encounter (i.e., relationship closeness, seroconcordance) were associated with UAI.

Additionally, Zea et al. (2009) demonstrated the cross-level interactions between personal characteristics and environmental influences. These effects were further demonstrated by Cooper (2010) and support the use of social cognitive theory to address the research questions of the present study. Readers can find a more detailed explanation of social cognitive theory in chapter 2.

Research Questions and Hypotheses

The aim of the current analysis is to examine the relationship between Latino cultural sexual beliefs and condom use decision-making with the hope of providing sound recommendations for the development of culturally-congruent counseling interventions for Latino MSM. More precisely, the study will seek to identify: 1) what specific cultural beliefs are involved in this process and 2) whether they moderate factors that have already been shown to be environmental influences on condom use decision-making in this population. This will be achieved through the answering of four research questions via statistical testing of 23 separate hypotheses. The first research question informs the later ones and is congruent with results of Calabrese et al. (2006), wherein three factors of the LSBS were identified: 1) Romance/Passion, 2) Relinquishment of Agency, and 3) Hypersexuality. The first research question and corresponding hypothesis is:

RQ1. Do the items presented in the Latino Sexual Beliefs Scale (LSBS) yield psychometrically sound constructs?

H_1: The LSBS will yield three psychometrically sound constructs.

Assuming the null for H_1 is rejected, there are 22 additional hypotheses being tested in the study (11 for UIAI and 11 for URAI); the conceptual model of these hypotheses is presented in Figure 1.1. These research questions and corresponding hypotheses are:

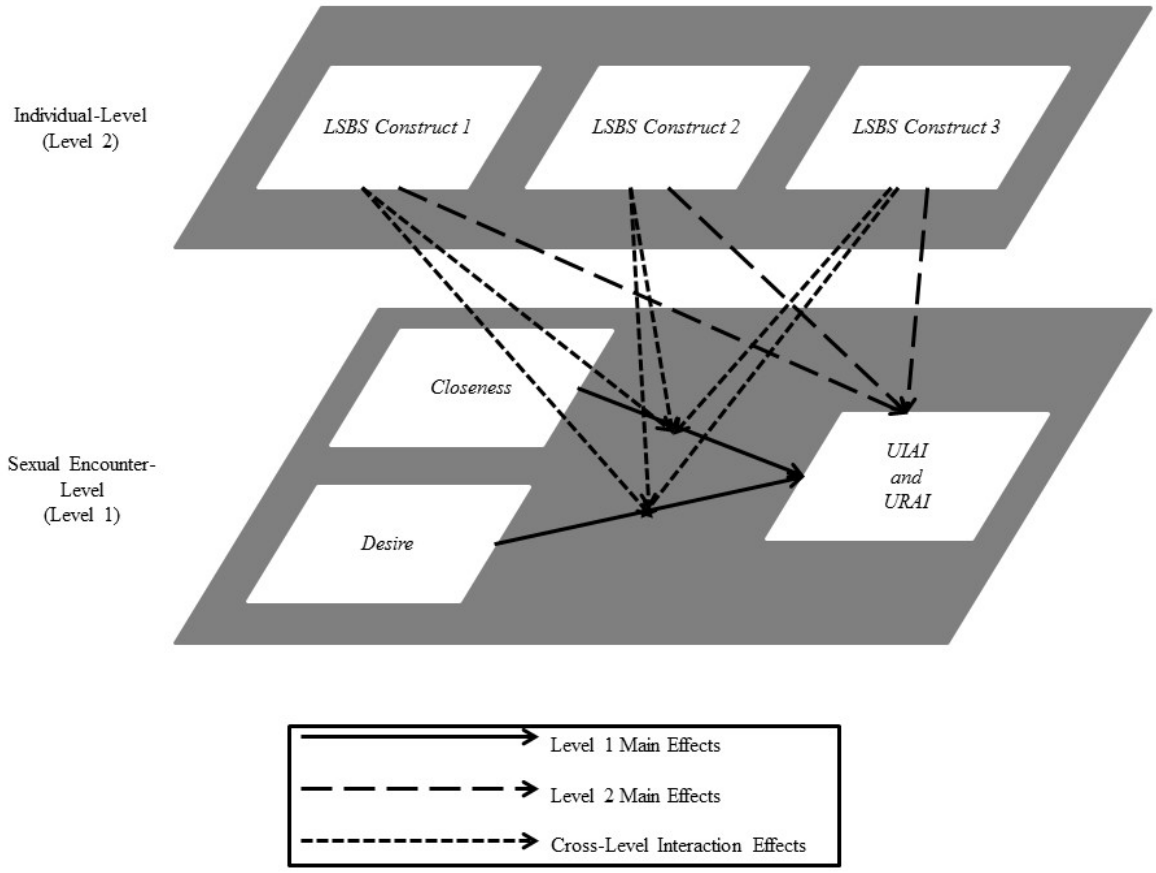


Figure 1.1: This figure displays the hierarchical generalized linear model that will simultaneously test all of the statistical hypotheses.

RQ2. Do any of these constructs predict condom use at the encounter level?

H_2 – H_4: LSBS constructs 1; 2; and 3 will each predict higher odds of UIAI

H_5 – H_7: LSBS constructs 1; 2; and 3 will each predict higher odds of URAI

RQ3. Do closeness and sexual desire maintain their predictive relationship with condom use at the encounter level?

H_8 – H_9: Closeness and sexual desire will predict higher odds of UIAI

H_{10} – H_{11}: Closeness and sexual desire will predict higher odds of URAI

RQ4. Do any of the LSBS constructs moderate the relationships of closeness or sexual desire on condom use at the sexual encounter level?

H_{12} – H_{14}: LSBS constructs 1; 2; and 3 will each moderate closeness effect on UIAI

H_{15} – H_{17}: LSBS constructs 1; 2; and 3 will each moderate closeness effect on URAI

H_{18} – H_{20}: LSBS constructs 1; 2; and 3 will each moderate sexual desire effect on UIAI

H_{21} – H_{23}: LSBS constructs 1; 2; and 3 will each moderate sexual desire effect on URAI

Implications of Study

The results of this study could offer significant contributions to the field of HIV/AIDS prevention and counseling in at least three concrete ways. First the study can help to elucidate the specific Latino cultural sexual beliefs involved in the situational condom-use decision making of Latino MSM. This is the first known quantitative study to do so. Understanding how an individual's personality characteristics, including those guided by cultural norms, influence health-related decision-making is a critical part of public health prevention research (Ewart, 1991; Lindbladh & Lyttkens, 2002; Savage, Dumas, & Stuart, 2013). This understanding can help to guide marketing campaigns, program design, and counseling interventions. Additionally, the analysis can support the validity of the LSBS by offering a rigorous factor analysis thereof, yielding psychometrically validated scales of Latino cultural sexual beliefs for use in future research.

Second, the current study can identify the role that these cultural beliefs have on the effects of closeness and sexual desire in condom-use decision-making. Research has

shown that these factors are significantly associated with UAI (Jarama et al., 2005; Wilson, Díaz, Yoshikawa, & Shrout, 2009; Zea et al., 2009). The present analysis can add to this knowledge by offering a clearer understanding of how Latino culture, specifically sexual beliefs, may interact with these known associations. It is possible, for example, that some Latino cultural sexual beliefs, enhance the effect of sexual desire on UAI, thus identifying that belief as a target for further exploration and possible intervention.

Finally, the study findings can strengthen the clinical work of counselors working with Latino MSM. The current study can aid these counselors by a) enhancing their counseling acumen in the multicultural competency domains of 1) Attitudes and Beliefs and 2) Knowledge (Association for Multicultural Counseling and Development [AMCD], 1996) and b) informing the creation of a culturally sensitive HIV risk reduction counseling intervention for Latino MSM by identifying the possible constructs to target within future interventions. By better understanding the cultural norms experienced and expressed by Latino MSM, counselors working with this population prior to or after seroconversion (i.e., becoming infected with HIV), can offer more culturally competent support. This, as research as shown (Kurth et al., 2014; O'Donnell, Stueve, Joseph, & Flores, 2014) can significantly reduce the community-level infection rates among MSM.

Summary of Methodology

The current study will use secondary data collected by a National Institutes of Health (NIH) project (NIH, 2003); the principal investigator (PI) on the project was Maria Cecelia Zea from George Washington University (see Zea et al., 2009). In all, NIH (2003) included 482 participants, of which 146 (30.3%) were Brazilian, 169 (35.1%)

were Colombian, and 167 (34.6%) were Dominican. The sample had a mean age of 36.37 (SD = 9.54). All participants were male and reported sexual contact with a man in the last 6 months. The NIH (2003) project was a multilevel design, with items being asked at the person-level (i.e., the individual-level) and at the encounter-level. During the four-year study, researchers were able to collect data on 1,777 sexual encounters nested within 482 MSM (see Zea et al., 2009).

The individual-level variable of interest is Latino cultural sexual beliefs (LSBS). The NIH (2003) data collection included a 13-item Latino Sexual Beliefs Scale (see Calabrese et al., 2006; Lo, Reisen, Poppen, Bianchi, and Zea, 2011). The present analysis will conduct a factor analysis of the LSBS congruent with the recommendations of Anna and Osborne (2005) and Costello and Osborne (2005). The resulting factors will be used in the present analysis as level-2 variables in a hierarchical generalized linear model. In their piloting of a 10-item version of the LSBS, Calabrese et al. (2006) identified the three aforementioned factors loading across eight of the items. H_1 of the current study is congruent with this finding and informs the later hypotheses, as the number of level-2 variables is correlated to the number of possible level-2 direct effects and cross-level interactions (i.e., moderating effects).

For H_2-H_{23} of the study, hierarchical generalized linear modeling (HGLM) will be used. As mentioned above, the level-2 variables will be the resulting LSBS factors. The two level-1 variables of interest (i.e., the encounter-level variables) will be sexual desire and closeness. The direct effects of these level-1 variables on UAI can be tested using the traditional multiple regression equation: $\eta = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + R$. To also simultaneously test the direct effects of the level-2 variables on UAI and their moderating

effects on the level-1 variables the following HGLM equation can be used (Raudenbush & Bryk, 2002): $\eta = (\gamma_{00} + \gamma_{01}W_1 + \gamma_{02}W_2 + \gamma_{03}W_3 + u_0) + (\gamma_{10} + \gamma_{11}W_1 + \gamma_{12}W_2 + \gamma_{13}W_3 + u_1)(X_1) + (\gamma_{20} + \gamma_{21}W_1 + \gamma_{22}W_2 + \gamma_{23}W_3 + u_2)(X_2) + R$. The reader can find a full explanation of the study's methodology in Chapter 3.

Key Definitions

Latino cultural sexual beliefs. Latino cultural sexual beliefs are culturally normative values surrounding sex among Latinos. Calabrese at al. (2006), detailing the role of these values in sexual decision-making, noted that "there is a particular set of characteristics and expectations that is commonly presumed to apply to Latino men and may hinder their enactment of sexual precautions" (para. 1). To test this, Calabrese et al. piloted a 10-item Latino Sexual Beliefs Scale (LSBS); their factor analysis yielded three scales incorporating eight of the items. Later, three additional items were added to subsequent iterations of the LSBS. The study will conduct another factor analysis on the full 13-item version in order to identify psychometrically sound constructs contained with the LSBS.

Closeness. Closeness, as conceptualized in the current study, is defined as the level of perceived intimacy present within the sexual encounter. Intimacy, as it pertains to sexuality, is a non-physical, emotional, and perhaps spiritual closeness between people (Zeglin & Mitchell, 2014). The present study will utilize a single-item measure of closeness presented in NIH (2003). The item asked participants "How would you describe your relationship with this person at the time of the sexual encounter" and was scored on a 4-point Likert scale representing increasing levels of closeness.

Sexual desire. Sexual desire is the self-reported iteration of physiological arousal

(Chivers, Seto, Lalumiere, Laan, & Grimbos, 2010). The study conceptualizes sexual desire as the degree to which the participant was sexually aroused and wished to engage in sexual intercourse. A single-item measure of sexual desire presented in NIH (2003) will be used in the current study. The item asked participants "On this occasion, prior to any physical contact, how much did you want to have sex" and was scored on a 4-point Likert scale representing increasing levels of sexual desire.

Unprotected anal intercourse. Unprotected anal intercourse is, within the present study, conceptualized as anal intercourse (i.e., a male inserts his penis into the anus of his partner) without the use of a condom. Within a UAI encounter between two men, there are two sex roles, receptive partner and insertive partner. The HIV transmission risks for these two roles is notably different (CDC, 2015a; Wei & Raymond, 2011; Zeglin, 2015; USDHHS, 2015a). Because of this, the current analysis will investigate the two roles separately, using items presented in NIH (2003) that asked about sexual role and condom use during each sexual encounter.

Chapter 2: Literature Review

This chapter, Chapter 2, will review the relevant extant literature regarding HIV/AIDS statistics, HIV/AIDS infection risk factors, the health effects of HIV/AIDS, the men who have sex with men (MSM) population, and the role of counseling in disease prevention. This will include a discussion of the literature regarding Latino men who have sex with men (MSM), a population with high HIV incidence rates. Chapter 2 will also include a presentation of social cognitive theory, the theory-base to be used in the present analysis, and a discussion of the necessary data structure for multilevel analyses. Finally, this chapter will conclude with an outline of the remaining questions for future academic inquiry and a presentation of the aim of the current study.

HIV

HIV statistics. There are approximately 1.2 million people living with Human Immunodeficiency Virus (HIV) or Acquired Immunodeficiency Syndrome (AIDS) in the United States (CDC, 2014b). Approximately 50,000 individuals are diagnosed with HIV in the US annually. For every 100,000 individuals living in the US, 12-15 are diagnosed with HIV each year and eight are diagnosed with AIDS each year (CDC, 2015b; Zeglin & Stein, 2015). In 2013, 57% of new HIV diagnoses were in individuals between the ages of 20 and 40. Meanwhile, 60% of all people living with HIV/AIDS (PLWHA) are between the ages of 40 and 60 (CDC, 2015b). The rate of new HIV diagnoses in 2013 for Black/African American PLWHA and Hispanic/Latino PLWHA was 8.5 and 2.8 times that of White PLWHA respectively. Approximately 67.5% of new HIV diagnoses in 2013 were among Black/African American and Hispanic/Latino individuals. Similarly, of all PLWHA, 62.9% are Black/African American and Hispanic/Latino. Approximately

32.2% are White. The rate of new HIV diagnoses among males (29.5 per 100,000) is more than four times greater than the rate among females (6.9 per 100,000). Of all PLWHA by the end of 2012, 75.3% were males. (CDC, 2015b).

HIV/AIDS background. HIV is a retrovirus using the body's white blood cells, called t-cells or CD4 cells, to replicate/duplicate itself, destroying the host cell in the process. HIV is found in the body wherever t-cells are found (e.g., blood, semen, pre-ejaculate, breast-milk). HIV, unlike most other viruses, cannot be naturally cleared from the body by the body's immune system. Because of this, the amount of HIV in the body's system, referred to as the viral load, increases as the body's supply of t-cells, called the CD4 count, decreases. As this process advances, and the disease progresses in damaging the immune system, the body's ability to fight off infection becomes increasingly compromised (CDC, 2015a; USDHHS, 2015a). This progression occurs through three stages: 1) the acute infection stage, 2) the clinical latency stage, and 3) AIDS.

AIDS is the third stage of the HIV infection, the end stage. It is diagnosed when an individual has a CD4 count of less than 200 t-cells/mm^3 of blood. A CD4 count at this level is likely to compromise one's immune system and increase risk of additional infections. Because individuals with HIV/AIDS have compromised immune systems, they are vulnerable to opportunistic infections (OI), referred to as "AIDS-Defining Conditions." OIs include certain cancers (e.g., Kaposi sarcoma), infections, and life-threatening clinical presentations (e.g., Isosporiasis, Cytomegalovirus retinitis). An individual with HIV can also be diagnosed with AIDS when diagnosed with an OI, regardless of their CD4 count (Adler, 2001; CDC, 2008, 2015a; USDHHS, 2015a;

Volberding et al., 2010).

HIV transmission. HIV is categorized as a sexually transmitted infection (STI), an infection primarily transferred from person to person via sexual contact (Adler, 2001; CDC, 2015a; USDHHS, 2015a). Approximately 93% of all HIV infections in the United States are transmitted by sexual contact. The remaining infections are predominantly contracted via injection drug use. Sexual contact and injection drug use account for approximately 99% of all HIV diagnoses. A very small percentage, less than 1%, of HIV infections are transmitted through childbirth, occupational exposure, and blood/organ/tissue transplants (CDC, 2015a; USDHHS, 2015a).

Sexual contact is the most frequent route of transmission because of the irritation of mucous membranes during sexual activity (CDC, 2015a; USDHHS, 2015a). These membranes, located at the openings of the body (e.g., vagina, anus, mouth, penile meatus) reduce friction and thus reduce irritation. These membranes are highly dense with t-cells in order to fight off possible contaminants from the outside (Mattapallil et al., 2005; Mowat & Viney, 1997; Sheth & Thorndycraft, 2009). When these membranes become irritated during sexual activity, the immune system responds by increasing the level of t-cells in the area. HIV is able to transfer into the bloodstream via the mucous membranes, particularly when these membranes are irritated or damaged (e.g., tearing; Adler, 2001; CDC, 2015a; Sheth & Thorndycraft, 2009; USDHHS, 2015a). This is the process by which one partner infects another, also called seroconversion. The risk of transmission is not the same for all sexual activity; some activities are riskier than others.

Receptive anal intercourse is the riskiest of all sexual activity. This is because the mucous membrane of the anus can be severely irritated during anal intercourse and has

been shown to be rich in t-cells, being more densely saturated with t-cells than semen and blood. Therefore, if HIV-infected ejaculate contacts the irritated mucous membrane, seroconversion is possible (CDC, 2015a; Li et al., 2010; Sheth & Thorndycraft, 2009; USDHHS, 2015a; Zuckerman et al., 2004). Though considerably less likely, seroconversion of an insertive partner from an infected receptive partner is possible; insertive anal intercourse is the second riskiest sexual activity. The mucous membrane of the penile meatus is smaller (i.e., less surface area) and less likely to become irritated during sexual activity, making the transfer of HIV more difficult (CDC, 2015a; Sheth & Thorndycraft, 2009; USDHHS, 2015a). However, because of the density of HIV in the anal mucous membrane of receptive partners, there is still considerable risk for the insertive partner (Kiviat et al., 1998; Li et al., 2010; Zuckerman et al., 2004).

Receptive vaginal intercourse is the third riskiest sexual activity (CDC, 2015a; USDHHS, 2015a). This is because HIV-infected ejaculate can contact the mucous membranes of the female genital tract (CDC, 2015a; Gupta et al., 2002; Sheth & Thorndycraft, 2009). Transmission is less likely than in receptive anal sex because the mucous membranes of the female genital tract are less prone to irritation and tearing during sexual activity because of the vagina's natural lubrication mechanisms. Insertive vaginal intercourse is less risky than receptive vaginal sex, again because of the relatively small mucous membrane of the penile meatus (CDC, 2015a; Levin, 2013; Sheth & Thorndycraft, 2009; USDHHS, 2015a). Though not zero, the risk of transmission from oral sex is extremely low. As with other forms of sexual activity, receptive oral sex is riskier than insertive oral sex (Baggaley, White, & Boily, 2008; CDC, 2014c, 2015a; Sheth & Thorndycraft, 2009; USDHHS, 2015a). Patel et al. (2014), in a review of 15

peer-reviewed articles, reported that receptive anal intercourse is more than 12 times as risky as insertive anal intercourse, 17 times riskier than receptive vaginal intercourse, 34 times riskier than insertive vaginal intercourse, and approximately 138 times riskier than both receptive and insertive oral sex.

HIV effects on health. The health effects of HIV/AIDS are variable between individuals and over time as the disease progresses through the three stages of the HIV infection. During the acute infection stage, the 2-7 week period immediately after exposure to the HIV, the HIV virus is replicating at a fast pace, dramatically increasing viral load. Individuals can experience acute retroviral syndrome (ARS) as a result of this process. Signs and symptoms of ARS include chills, diarrhea, fatigue, fever, malaise, muscle aches, nausea, night sweats, rash, sore throat, and swollen lymph nodes. It is not uncommon for people with ARS to ascribe these symptoms to the flu or other common infections, not suspecting that they have been infected with HIV. Approximately 15% of individuals are hospitalized due to ARS (CDC, 2015a; Ellis, Calero, & Stockin, 2009; MacNeale & Dinulos, 2006; USDHHS, 2015a).

As the infection progresses to the second stage, the clinical latency stage, the body begins to create HIV antibodies to fight off the virus. During this stage, which can last decades, HIV replicates at a considerably slower rate but remains active in the body. Some PLWHA may present with few to no symptoms while others may experience chronic debilitating symptoms with significant physical difficulties (e.g., fever, diarrhea, depression, weight loss/gain). PLWHA may also experience changes in the severity of their symptoms over time. As a result, HIV/AIDS can significantly affect an individual's physical health, mental health and neurological health (CDC, 2015a; USDHHS, 2015a;

Volberding et al., 2010).

Physical health effects. As HIV/AIDS progresses, CD4 counts decrease and viral load increases, diminishing the physical health of PLWHA. Common physical health effects for PLWHA include fatigue, diarrhea, difficulty completing ADLs, and body shape changes (Erlandson et al., 2014; Persson, 2005; Smith & Vazquez, 2010; Sullivan & Dworkin, 2003; Tramarin et al., 2004; United States Department of Veterans Affairs, 2015). Volberding et al. (2010) noted that physical health effects are best measured by clinical assessments, biomarkers, and/or ability to performs ADLs. Hays et al. (2000), in a sample of 2,864 PLWHA, reported that physical health-related quality of life significantly declined as individuals progressed from asymptomatic HIV to symptomatic HIV to AIDS. Oursler et al. (2006) reported that PLWHA are significantly less able to perform many ADLs (e.g., eat without help, run, walk uphill) as the disease progress through these same three phases. An individual's viral load and CD4 count are often used to assess disease progression.

PLWHA who have CD4 counts of <51 t-cells/mm^3, 51-200 t-cells/mm^3, and 201-500 t-cells/mm^3 are 5.94, 2.42, and 1.30 times more likely than PLWHA with CD4 counts of >500 t-cells/mm^3 to report an inpatient hospitalization respectively (Fleishman et al., 2005). In a prospective cohort study of over 52,000 participants, Guiguet et al. (2009) reported that higher viral loads and lower CD4 counts were significantly predictive of Kaposi's sarcoma, non-Hodgkin lymphoma, cervical cancer, Hodgkin's lymphoma, lung cancer, and liver cancer. Additionally, higher viral load and lower CD4 counts are correlated to mortality among PLWHA (Gabillard et al., 2013; Hogg et al., 2001; Ledergerber, 2004).

Mental health effects. As the HIV infection progresses, the mental health quality of life for PLWHA progressively decreases (Bing et al., 2000; Hays et al., 2000). Volberding et al. (2010) noted that "mood and substance abuse disorders are common comorbidities" (p. 27) among PLWHA. Approximately 50% of PLWHA have a diagnosed comorbid mood/anxiety or drug abuse disorder (Gaynes, Pence, Eron Jr, & Miller, 2008; Pence, Miller, Whetten, Eron, & Gaynes, 2006). This includes a prevalence rate of approximately 22% for depression, nearly twice the rate of the general population (Orlando et al., 2002). Depression has been correlated with further compromised immune functioning in PLWHA. For individuals with chronic severe depression, the neurologic structures responsible for some immune system cell synthesis, dispersal, and efficacy can be compromised, resulting in a slower response to illness and OIs (Ellis et al., 2009; Leonard, & Myint, 2009; Pucak, & Kaplin, 2005). Depression in PLWHA has been identified as a significant independent predictor of a lower CD4 count and an increased likelihood of a detectable viral load (Boarts, Sledjeski, Bogart, & Delahanty, 2006).

In a review of 18 peer-reviewed studies, Komiti et al. (2001) reported that PLWHA have higher rates of suicidal ideation, suicide attempts, and completed suicides. Haller and Miles (2003) reported that almost half of PLWHA with suicidal ideation in their sample reported a moderate to high likelihood of attempting suicide. Among men receiving care at a community HIV clinic, 59% reported suicidal ideation and half attempted it. Suicide accounts for approximately 4% of all deaths for PLWHA, over twice the rate of the general population (CDC, 2015c; Data Collection on Adverse Events of Anti-HIV Drugs Study Group, 2010; Lewden et al., 2005).

Neurocognitive health effects. Among PLWHA, neurocognitive impairments present "either as a primary, direct effect of HIV infection or as a consequence of an opportunistic infection" (Volberding et al., 2010, p. 27). Neurocognitive impairments include difficulties with learning, maintaining attention, and the retrieval of new information. Neurocognitive impairments also affect executive functioning, impairing an individual's ability to retrieve words or to plan, execute, or monitor behavior (American Psychiatric Association, 2013). Ellis et al. (2009) detailed the mechanisms by which HIV damages the connections between neurons in the brain. Ellis et al. referred to these mechanisms as: 1) viral factors, 2) host factors, and 3) co-factors. Viral factors are associated with proteins within the DNA of the HIV virus directly damaging neurons. Host factors are associated with the HIV virus altering the function of brain activities. Lastly, co-factors are associated with behavioral comorbidities that affect brain function (e.g., drug abuse).

Neurocognitive impairments resulting from HIV infection are referred to as HIV-associated neurocognitive disorders (HAND; Ellis et al., 2009; Antinori et al., 2007). The severity of HAND is assessed using a three-level classification system: 1) Asymptomatic neurocognitive disorder, 2) Mild neurocognitive disorder, and 3) HIV-associated Dementia (HAD). PLWHA must show impairments in their neurocognitive functioning in order to be diagnosed with HAND; these include attention, language, executive function, complex motor skills, simple motor skills, memory, and sensory perceptual skills (Antinori et al., 2007; Clifford & Ances, 2013). In a study of over 1,500 PLWHA, Heaton et al. (2010) reported that 52% displayed symptoms of HAND, with 33%, 12%, and 2% classified as asymptomatic, mild, and HAD respectively. There is

growing evidence that increasing viral load and lowered CD4 counts are correlated with HAND (Clifford & Ances, 2013; Becker et a., 2009; Heaton et al., 2010).

Men Who Have Sex with Men

In the United States, the population most impacted by HIV and, therefore, most vulnerable to the health effects of HIV is MSM. According to the CDC (2014a), MSM in the United States are "more severely affected by HIV than any other group" (para. 1). The term MSM, first introduced by Doll et al. (1992), is a classification for men who, regardless of their identified sexual orientation (e.g., homosexual, bisexual, heterosexual), report having had sexual contact with other men. MSM, although accounting for 2% of the US population, comprise approximately 63% of new HIV cases annually. In a study of 8,153 MSM in 21 major metropolitan areas, 19% were HIV+ (CDC, 2010). By 2011 in the US, there were 489,121 MSM living with HIV; this is approximately 56% of all PLWHA (CDC, 2014a). Because of the high incidence and prevalence rates of HIV/AIDS within the MSM community and the highly infectious nature of anal intercourse for both partners, MSM are at increased risk for HIV infection (Beyrer et al., 2012; Li et al., 2010).

Among MSM, demographic variables are associated with HIV risk behaviors, HIV prevalence and incidence, and HIV transmission. Race is associated with infection rates, with racial minority MSM, including Latinos, being disproportionally impacted by HIV (CDC, 2010, 2013c; Prejean et al., 2011). The CDC (2010) reported that Latino MSM were 15% more likely than White MSM to be diagnosed with HIV and 137% more likely than White MSM to be unaware of their HIV status. Similarly, Lieb et al. (2010) reported that Latino MSM are approximately 1.5 times more likely than White MSM to

die from complications from the disease. In 2013, 8,097 Latinos males were diagnosed with HIV, a little more than half the number of Black males that were diagnosed with HIV. However, of the cases with documented known routes of transmission, 68.1% of the Latino males living with HIV were infected through male-to-male sexual contact, while 57.9% of Black males were infected by male-to-male sexual contact (CDC, 2015b). Though the total number of Black males living with HIV is notably higher, a greater proportion of Latino males are becoming infected through sexual contact with other men. It is clear from these data that continued inquiry into the facilitating variables of the sexual transmission of HIV among MSM, particularly Latino MSM, is crucial.

HIV Risk Factors

Fundamentally, there appears to be two classes of risk factors: 1) individual-level and 2) social/environmental-level. Individual-level risk factors are those that exist within and are engaged in by the individual (e.g., risky sexual behaviors, demographics). Social/environmental-level risk factors are circumstances and contexts that facilitate the spread of HIV within a community and/or that put community members at greater risk for HIV infection (e.g., risky situations, poverty, access to healthcare, sexism, stigma and discrimination, incarceration patterns, civilian dislocation as a result of war; Frye et al., 2006; Garnett, 2007; Johnson et al., 2010; Mustanski, Newcomb, Du Bois, Garcia, & Grov, 2011; Poundstone, Strathdee, & Celentano, 2004; Remien & Mellins, 2007). There is evidence that individual-level factors alone do not adequately account for the increased risk of HIV-infection among minority MSM populations (Friedman, Cooper, & Osborne, 2009; Millett, Flores, Peterson, & Bakeman, 2007).

Beyrer et al. (2012) noted that, within the MSM community, the high rate of

infection and the risk of multiple infections and re-infection challenges "vaccine and other biomedical approaches to prevention" (p. 368; e.g., prophylaxes and treatment as prevention). Because condom use, as mentioned above, is an efficient behavioral HIV prevention strategy, and though there is tremendous extant literature on the factors associated with HIV testing (Fuqua et al., 2012; Helms et al., 2009; MacKellar et al., 2006;), prophylactic medication use (Landovitz et al., 2013; Liu et al., 2008; Mansergh et al., 2010), and treatment adherence (Rintamaki, Davis, Skripkauskas, Bennett, & Wolf, 2006; White, Gordon, & Mimiaga, M2014; Vissman et al., 2011), the present analysis will seek to add to the research literature regarding condom use and will highlight the corresponding literature below.

Individual-level. Noar (2007) noted that individual-level risk factors help "to understand why individuals engage in risky sexual behavior" (p. 392). In a systematic review of 313 peer-reviewed articles, Mustanski et al. (2011) identified several individual-level risk factors for unprotected anal intercourse (UAI) among young MSM including drug and alcohol use, sensation-seeking, depression, anxiety, internalized homophobia, impulsivity, and condom use self-efficacy. These risk factors have also been shown to be significantly associated with UAI in adult MSM. For example, a systematic review of 42 studies (Woolf & Maisto, 2009) reported that "UAI was significantly associated with frequent alcohol use as well as heavy alcohol use and risk for an alcohol use disorder" (p. 773). Other research has supported the reported associations between UAI and internalized homophobia (Folch, Muñoz, Zaragoza, & Casabona, 2009; Ross, Rosser, Neumaier, & Positive Connections Team, 2008), sensation seeking and impulsivity (Berg, 2008; Kalichman, Weinhardt, DiFonzo, Austin,

& Luke, 2002; Shuper, Joharchi, & Rehm, 2014), depression and anxiety (Houston, Sandfort, Dolezal, & Carballo-Diéguez, 2012; Mustanski, 2007), and condom use self-efficacy (Teng & Mak, 2011; Widman, Golin, Grodensky, & Suchindran, 2013) among adult MSM. These risk-factors, and others, can vary greatly across cultures (Rhodes et al., 2011; Warren et al., 2008).

Research regarding risk-factors among Latino MSM has yielded largely similar results. For example, using respondent driven modeling to collect a sample of 190 Latino MSM, Rhodes and McCoy (2015) reported that increased knowledge of STIs and increased condom use self-efficacy were consistently significantly associated with condom use. Similar results were reported by Zea, Reisen, Poppen, and Bianchi (2009), wherein condom use self-efficacy was a significant predictor of lower odds of UAI among a sample of 482 Latino MSM. Poppen, Reisen, Zea, Bianchi, and Echeverry, (2004) reported that drug use and depression were significant predictors of UAI; results varied between UIAI and URAI, supporting the importance of analyzing these two roles separately when investigating Latino MSM and condom use.

Connection to Latino culture has also been identified as significantly associated with UAI. For example, O'Donnell et al. (2002), in a sample of 465 Latino MSM, reported that greater connection to Latino culture reduced the likelihood of UAI by 40%. This trend was also found in Poppen et al. (2004), wherein lower Latino acculturation was predictive of UAI. Rhodes et al. (2011), through focus group methodology, suggested that Latino cultural norms may be associated with UAI. Another focus group study involving over 300 Latino MSM (Diaz & Ayala, 1999) identified three salient Latino cultural sexual beliefs relating to condom use: 1) loss of control, 2) love and

intimacy, and 3) fatalism, resignation, and rebellion. Loss of control is associated the relinquishment of responsibility for one's safe sexual activity to an outside influence (e.g., masculinity, drugs, partner). Love and intimacy refers to the notion that condoms depersonalize the sexual experience. Lastly, fatalism, resignation, and rebellion highlights the belief that HIV is an inevitable result of homosexual activity and cannot be escaped. These beliefs "provide a useful window to understand the structural, social and cultural forces that give meaning and regulate sexual practices" (p. 290). Jarama, Kennamer, Poppen, Hendricks, and Bradford (2005), in their sample of 250 Latino MSM, reported that higher self-reported machismo (i.e., a Latino conceptualization of masculinity) was statistically significantly predictive of UAI. Also, Calabrese et al. (2006) conducted a factor analysis on a Latino sexual beliefs scale (LSBS) derived from their earlier qualitative work. This factor analysis yielded three constructs: 1) Romance/Passion, 2) Relinquishment of Agency, and 3) Hypersexuality. They reported that, in their preliminary analysis of 120 Latino MSM, relinquishment of agency and hypersexuality significantly predicted UAI. Lo, Reisen, Poppen, Bianchi, and Zea, (2011), when aggregating these factors however, did not find a significant relationship between Latino cultural beliefs and UAI, suggesting that evaluating the separate constructs comprising the LSBS has substantial merit.

Social/environmental-level. In addition to the individual-level predictors of UAI, there are notable social/environmental-level factors to also consider including levels of homophobia in the community, level of sexual minority presence in the community, concentrated affluence in a community, alcohol or drug use, venue of sexual encounter, and levels of graffiti (Frye et al., 2006). Social/environmental factors can be thought of

as either proximal (being contextually close to a UAI encounter; e.g., sex role, location of sexual encounter, drug use, performance of certain sexual acts) or distal (being farther removed from a particular UAI encounter; e.g., level of sexual minority presence in the community, availability of condoms in the community, crime rate). These distinctions are helpful in conceptualizing social/environmental-level factors associated with UAI (and other health-related behaviors), but have been challenged as ineffective in understanding the social epidemiology of health behavior (Agar, 2003; Krieger, 2008). Krieger (2008) noted that proximal-distal "levels coexist simultaneously, not sequentially, and exert influence accordingly" (p. 227). Congruent with this, though the current study will only investigate proximal factors, literature has been included that highlights important findings including proximal as well as distal social/environmental predictors of UAI. Concerning distal factors, for example, in a multilevel analysis involving 385 young MSM, Frye et al. (2010) reported that higher neighborhood residential instability (i.e., percent of individuals who moved in the last 5 years) and lower neighborhood gay presence (i.e., percent of household headed by same-sex couples) significantly predicted UAI; these results varied between URAI and UIAI, furthering the need to investigate these behaviors separately. Rhodes and McCoy (2015) reported that having fewer experiences of homophobia was statistically significantly associated with condom use, supporting the findings concerning neighborhood gay presence presented in Frye et al. (2010). Halkitis et al. (2013) reported similar results in a sample of 592 MSM, with individual housing stability predicting condom use. Regarding proximal factors, literature suggests that these factors can "create contextual influences…that constrain or facilitate self-protective acts" (i.e., health promoting

behaviors; Ewart, 1991, p. 938). This is evidenced by the results reported in Zea et al. (2009) study of Latino MSM, wherein closeness with partner, concern over STIs, and seroconcordance were significant predictors of condom use within a particular sexual encounter. In sum, the individual- and social/environmental-level factors influence each other, either cooperatively or antagonistically, within any particular sexual encounter (Gorbach & Holmes, 2003). Research (and the development of interventions) seeking to better understand HIV risk behavior is best served by careful attention to this interaction. As such, theories of HIV risk behavior require a nuanced and multilevel understanding of human behavior (Cooper, 2010; Ewart, 1991).

HIV Prevention

Condom use. Consistent condom use has been shown to significantly reduce the risk of contracting HIV during any particular sexual encounter (McKay, 2007). Varghese, Maher, Peterman, Branson, and Steketee (2002) calculated the risk of contracting HIV per sexual act by aggregating reported rates among published studies. They reported that using condoms reduced the relative risk of contracting HIV by 20 times for MSM. In a longitudinal study of over 4,000 MSM, Koblin et al. (2006) reported that the multiplicative attributable risk for seroconversion of unprotected receptive anal intercourse with partners of unknown HIV status, with partners thought to be HIV-, and with partners thought to be HIV+ were 28.4%, 21.6% and 18.3% respectively. This suggests that one fifth to one fourth of seroconversions is attributable to unprotected receptive anal intercourse regardless of the suspected HIV status of the partner. Using time-to-event modeling, Smith, Herbst, Zhang, and Rose (2015) reported that, among 3,490 MSM, consistent condom use is more than 70% effective at protecting

against HIV during receptive anal intercourse and insertive anal intercourse. Fundamentally, unprotected anal intercourse (UAI) is a considerable HIV risk behavior (CDC, 2014a, 2014e; Koblin et al., 2006; National Aids Trust, 2010; USDHHS, 2015a). As mentioned above however, unprotected receptive anal intercourse (URAI) is considerably riskier than unprotected insertive anal intercourse (UIAI). Beyrer et al. (2012) reported that the "HIV disease burden in MSM is explained largely by the high per-act and per-partner transmission probability of HIV transmission" (p. 368). Beyrer reported that decreasing the per-act transmission risk of HIV among MSM could significantly reduce overall HIV incidence; avoiding UAI through consistent condom use is a demonstrated effective mechanism by which to accomplish this goal. The Joint United Nations Programme on HIV/AIDS (2009) reported that condoms are "the single, most efficient, available technology to reduce the sexual transmission of HIV and other sexually transmitted infections" (para. 2).

Because condom use is highly effective in preventing HIV transmission, many interventions have been designed to increase condom use. In a systematic review of reviews, von Sadovszky, Draudt, and Boch (2014) found that such interventions are generally effective at increasing condom use. Similar results were found by Scott-Sheldon, Huedo-Medina, Warren, Johnson, and Carey (2011) in their systematic review of 67 interventions. Recent examples of interventions to increase condom use include the Many Men, Many Voices (3MV; Wilton et al., 2009) and the Treatment Advocacy Group (TAP; McKirnan, Tolou-Shams, & Courtenay-Quirk, 2010). Both of these interventions have been shown to be effective at significantly increasing self-reported condom use rates among MSM in randomly controlled trials. There are, however, few behavioral

interventions designed for or normed on Latino MSM (O'Donnell, Stueve, Joseph, & Flores, 2014). In one exception to this, O'Donnell et al. (2014) investigated the efficacy of another intervention that is typically used for Latino heterosexual individuals (Video Opportunities for Innovative Condom Education and Safer Sex; O'Donnell, O'Donnell, San Doval, Duran, & Labes, 1998) on Latino MSM, finding that MSM in the intervention group displayed a significantly steeper decline in UAI than did individuals in the control group. Much like in instrument development, however, this and similar post-hoc investigations (i.e., safari studies) do not take adequate *a priori* consideration of culture in the development of the intervention (see Tanzer, 2005). There is continued need to rigorously investigate the role of Latino culture in condom use decision-making for MSM in order to support culturally attuned interventions for this population.

Prophylaxes. Recent advances in HIV biomedical research have produced two medicinal prophylactic measures: 1) Pre-exposure prophylaxis (PrEP), and 2) Post-exposure prophylaxis (PEP). Consisting of two medicines delivered in pill form, PrEP is a once daily medication designed to prevent the HIV infection from propagating in the body if exposed to the infection (CDC, 2014d; 2015f, USDHHS, 2015a). PrEP, according to the CDC (2014d), is clinically indicated for several populations, including MSM who have had unprotected sex or have been diagnosed with another STI. Grant et al. (2010), in a prospective study of 2,499 MSM over a median of 1.2 years, reported that PrEP reduced the relative risk of HIV infection by 95%. Review boards for two European studies (i.e., PROUD and IPERGAY) have recently closed the placebo arms of the studies because of the evidenced high efficacy of PrEP in the treatment arms; all participants in the studies are now receiving PrEP (Cairns, 2014; Wright, 2015). Though

PrEP appears to be a highly effective prevention strategy, the cost of PrEP can be prohibitively high (over $1,000 per month; Boerner, 2014) and is therefore an unlikely solution to reducing HIV infection rates.

PEP is used as an emergency response to contact with possible HIV-infected fluids through occupational exposure (e.g., doctors, nurses, other healthcare workers) or unprotected sexual contact. The medicines in PEP hinder the ability for HIV to replicate in the body, increasing the body's chance of clearing the virus from the system. To be most effective, PEP should be taken within 72 hours of exposure and is prescribed for 28 days (CDC, 2015e; USDHHS, 2015a). PEP has been shown to reduce the risk of HIV infection after occupational exposure by 81% (Cardo et al., 1997). Literature is mixed in the reporting of PEP as an effective preventative HIV treatment for MSM, with some research reporting increased infection rates after PEP use (Detels & Winslow, 2012; Heuker, Sonder, Stolte, Geskus, & Van Den Hoek, 2012; Puro et al., 2012). The CDC (2015e) noted that PEP is not appropriate for individuals with frequent exposure to HIV, which can include MSM.

Treatment as prevention. Highly active antroretroviral therapy (HAART), medicines first introduced in the 1990s to prevent the replication of HIV in the body, significantly lengthens the life of PLWHA. This is because HAART decreases viral load, maintaining healthy CD4 counts. Successful HAART treatment is defined as having an undetectable viral load. It is important to note that this does not mean that the individual is cured; though the virus is still present in the blood, it is not replicating rapidly enough to produce a detectable amount of the virus (CDC 2013d; Palella et al., 2006; Rhodes, Hergenrather, Wilkin, & Wooldredge, 2009). When the viral load is suppressed to

undetectable levels, the risk of transmission is significantly diminished. Because of this, there is an opportunity to use effective HAART treatment as a prevention strategy.

This approach is often referred to as the HIV treatment cascade or the HIV care continuum and begins with getting at-risk populations including MSM tested for HIV (USDHHS, 2015a). The functional hypothesis underpinning the treatment cascade begins with HIV testing, positing that a certain portion of those individuals (i.e., those who test positive for HIV) will be referred for HIV care. Subsequently, a subset of individuals receiving referrals will go on to initiate treatment. Finally, of individuals who initiate care, a portion will remain compliant with treatment, thus reducing viral load to undetectable levels and preventing the spread of HIV (Cohen et al., 2011, 2012; USDHHS, 2015a). Each of these steps in the cascade is supported in the literature. For example, there is evidence that men who receive testing and are HIV-positive are less likely to have unprotected anal intercourse with HIV-negative or HIV-unknown men, reducing the community incidence rate (Poppen, Reisen, Zea, Bianchi, & Echeverry, 2005; Zablotska et al., 2009). After testing, PLWHA within the treatment cascade are networked with health organizations to begin HAART. Throughout their life, PLWHA should regularly meet with their healthcare professionals and be adherent to HAART (USDHHS, 2015a). A HAART adherence rate of 95% is needed in order to achieve an 80% likelihood of having an undetectable viral load; research has reported that actual HAART adherence rates range from 36% to 70% (Becker, Dezii, Burtcel, Kawabata, & Hodder, 2002; Heckman, Catz, Heckman, Miller, & Kalichman, 2004; Smith, Rublein, Marcus, Brock, & Chesney, 2003). Viral suppression, congruent with the treatment cascade approach, has been shown to reduce HIV transmissions by as much as 25 times

(Cohen et al., 2011, 2012). Via executive order in 2013, President Obama signed the HIV Care Continuum Initiative, directing federal agencies to prioritize the treatment cascade in national HIV prevention strategies and programs (Obama, 2013).

Role of Counseling in HIV Prevention

The treatment cascade and related HIV/AIDS related services are provided through non-profit AIDS Service Organizations (ASOs). ASOs provide HIV/AIDS education and testing services (International Council of AIDS Service Organizations [ICASO], 2015). This includes post-test HIV counseling regarding medication adherence, safe sex, injection drug use, and health needs (ICASO, 2015; Kelly et al., 2000). These programs receive funding from the Federal Ryan White Program to help support the costs associated with delivering health care to populations most effected by HIV/AIDS (USDHHS, 2015b). Parts A and D of the Federal Ryan White Program assist in funding an array of services including mental health services. Though these appropriations are designed for services targeting PLWHA, Kelly et al. (2000) noted the important role of ASOs in HIV prevention as well, including the use of mental health services.

Many HIV risk behaviors, including UAI, are the end result of an individual's own decision-making processes (Ewart, 1991; Reyna, 2008). For this reason, counselors and other mental health professionals may be particularly well-suited to provide preventative care. This is because counseling and psychotherapy can provide an understanding of and help facilitate changes to clients' behavioral decision-making processes (Alexopoulos, Raue, & Areán, 2003; American Counseling Association [ACA], 2015; Kelly & Murphy, 1992; National Institute of Mental Health, 2015). The

United States Preventative Services Task Force (Curry, Grossman, Whitlock, & Cantu, 2014) noted that "counseling interventions are preventive services designed to help persons engage in healthy behaviors and limit unhealthy ones" (p. 407). Trained professional counselors use their understanding of human behavior to assist clients in evaluating, confronting, and adjusting their behavioral patterns. This is achieved through completion of a thorough diagnostic assessment, culturally-sensitive case conceptualization, relevant goal-setting, and timely interventions (MacCluskie, 2011; Young, 2013). The possible role of counselors in HIV prevention was supported when Croteau, Nero, and Prosser (1993), at the height of the HIV/AIDS epidemic, posited that "counselors and other human development professionals can, and perhaps should, be in the forefront of providing HIV and AIDS prevention education" (p. 294).

Literature has shown that counseling services can help to prevent HIV infection by significantly reducing HIV risk behavior among MSM (Eaton, Cherry, Cain, & Pope, 2011; Koblin & EXPLORE Study Team, 2004; O'Donnell, Stueve, Joseph, & Flores, 2014), and has been shown to reduce the rate of HIV acquisition by 18.2% (Koblin & EXPLORE Study Team, 2004). Even a single counseling session has been shown to be effective at reducing UAI as much as one year after the intervention (Dilley et al., 2002). These interventions employed common counseling techniques (e.g., motivational interviewing, cognitive reframing) to improve communication skills, decision-making processes, and self-talk. Counseling interventions are also an effective tool for reducing HIV risk behavior including medication adherence and serosorting (i.e., sexual intercourse only with other individuals with HIV) among MSM already living with HIV, thus reducing the general infection rate (Healthy Living Project Team, 2007; Kalichman,

Rompa, & Cage, 2005; Kurth et al., 2014). von Sadovszky et al. (2014) and Croteau et al. (1993) have both noted that the effectiveness of interventions could be still greatly enhanced if the intervention is tailored to accommodate the cultural background of clients.

The counseling field has made a notable shift toward multicultural competence and sensitivity to culture within the counseling process (Council for Accreditation of Counseling and Related Educational Programs, 2009; Stadler, Suh, Cobia, Middleton, & Carney, 2006). The ACA (2014) ethical code stipulates that counselors embrace "approaches that support the worth, dignity, potential, and uniqueness of individuals within their historical, cultural, economic, political, and psychosocial contexts" (p. 20). The AMCD (1996) outlines the three domains of multicultural competency: 1) Attitudes and Beliefs (e.g., sensitivity to one's own values and biases, respect for others' values), 2) Knowledge (e.g., specific knowledge about the population), and 3) Skills (e.g., able to adapt techniques to best fit with client). Counselors should be able and ready to conceptualize clients and their distress within a culturally-competent context. This may be particularly true since culture has been shown to influence an individual's decision-making processes (Briley, Morris, & Simonson, 2000; Lehman, Chiu, & Schaller, 2004). As mentioned above, Latino culture (including Latino acculturation) has been shown to be significantly associated with condom-use decision-making among MSM (Diaz & Ayala, 1999; O'Donnell et al., 2002; Poppen et al., 2004; Rhodes et al., 2011). This, however, may not be nuanced enough information to guide counselors in their work with Latino MSM. It is important for research to continue to uncover how and why Latino culture and condom-use decision-making are linked; this information could much more

significantly inform the knowledge and the attitudes domains of multicultural competence for counselors in their practice (AMCD, 1996).

Counseling interventions designed to aid in disease prevention are more effective when they are designed with an underlying evidence- or theory-base (Fishbein, 2000; Fishbein, & Ajzen, 2005; Kelly & Murphy, 1992; von Sadovszky, Draudt, & Boch, 2014). Rotheram-Borus et al. (2009) noted that a common factor among all effective HIV interventions is a solid foundation in a theory of human behavior. Herbst et al. (2005), in their meta-analysis of 33 studies, also highlighted the importance of theory, finding that "interventions that reported a basis in behavioral theory were associated with efficacy" (p. 237). This is because theories of human behavior provide scientifically validated constructs for interventions to target. It is similarly important for research to incorporate these theories in order to better translate findings into actionable interventions.

Social Cognitive Theory

A theory of human behavior frequently applied in counseling and utilized in research is Bandura's (1986) social cognitive theory (see Andersen & Chen, 2002; Cervone, Shadel, & Jencius, 2001; Lent & Maddux, 1997; Lent et al., 2005). Social cognitive theory details the role of internal cognitive processes on behavior and learning, and is presented as the dynamic and reciprocal interaction of three factors: 1) an individual's behavior, 2) an individual's personal characteristics, and 3) environmental influences (Bandura, 1986; 2012). This supplement to Bandura and Walters' (1963) social learning theory prioritizes the process of reciprocal determinism. Reciprocal determinism is the process by which each of the components "operate as interacting

determinants of each other" (p. 18; see Figure 2.1). For example, personality characteristics and environmental context are continuously cooperating to influence behavior. This suggests that social cognitive theory could bridge the space between the aforementioned individual-level and social/environmental-level risk factors.

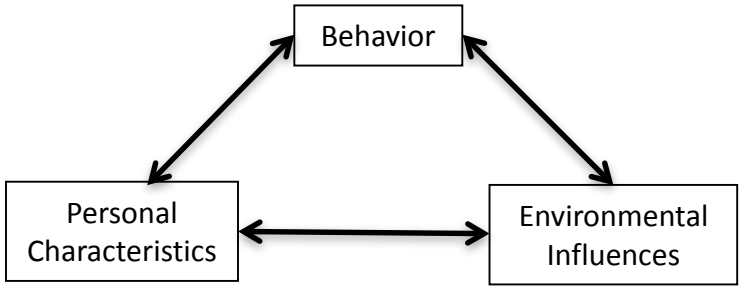


Figure 2.1: This figure displays the components of social cognitive theory and the reciprocal determinism between them.

Personal characteristics—Behavior. The field of psychology is predicated on the notion that people's behavior is heavily influenced by many personal characteristics including their attitudes, beliefs, values, self-efficacy, and motivation (Bandura, 1986). For example, in a study of 482 Latino MSM, Calabrese, Reisen, Zea, Poppen, and Bianchi (2012) reported that men who believed that wearing a condom resulted in a loss of sexual pleasure were significantly more likely to engage in UAI. Mustanski (2007) reported that personality characteristics, specifically anxious affect (e.g., nervous, irritable, restless), can moderate the effect of contextual anxiety on HIV risk behavior among MSM. The theory of planned behavior (TPB; Ajzen, 1985, 1991) is an example of one attempt to explain the influence of personal characteristics on behavior. According to TPB, an individual's intention to perform a behavior is significantly correlated with their performance of that behavior, which is the confluence of their 1) attitudes toward the behavior, 2) perceived subjective norm beliefs about the behavior,

and 3) perceived level of control over the behavior. Kok, Hospers, Harterink, and De Zwart (2007) in a sample of over 1,300 MSM, reported that these three components accounted for 55% of the variance in condom use intention. Similar results were reported by van Kesteren, Hospers, van Empelen, van Breukelen, and Kok (2007) in a sample of 296 MSM, with these personal beliefs explaining more than 50% of the variance in condom use intentions in a statistically significant model. Additionally, the three components of TPB statistically significantly accounted for 28% of the variance in condom use intentions among young MSM (Franssens, Hospers, & Kok, 2009).

Because social cognitive theory prioritizes the notion of reciprocal determinism, the relationship of influence between personal characteristics and behavior is bidirectional (Bandura, 1986, 2012). That is to say that one's behavior could also influence their personal characteristics. The theory of cognitive dissonance is an example of this. Festinger (1962) defined cognitive dissonance as the psychological upset that results from simultaneously holding two contradictory values, beliefs, or schemas. To reduce this dissonance, the theory of cognitive dissonance suggests that individuals may change their preexisting views to accommodate the new contradictory information. This is frequently seen after a person engages in a behavior that conflicts with their established values or beliefs. After the behavior is executed, the individual often changes his/her beliefs to better align with the behavior (Cooper, Mirabile, Scher, Brock, & Green, 2005; Harmon-Jones & Harmon-Jones, 2007). For example, Dickson-Gomez, Weeks, Convey, and Li (2011) reported that peer health advocates (PHA), because of cognitive dissonance, reduced their own HIV risk behaviors as they were offering health information to peers about HIV risky behavior. The PHAs changed their behavior to

settle the cognitive dissonance created by providing health information while simultaneously engaging in risky behavior. Further supporting the role cognitive dissonance as a mechanism of behavior influencing personal characteristics, Huebner, Neilands, Rebchook, and Kegeles (2011) reported, in a statistically significant model, that past condom use behavior had a stronger predictive association with future condom attitudes than did past condom attitudes on future condom use behavior.

Environmental influences—Behavior. Social cognitive theory posits that environmental influences affect behavior. Bandura (1986, 2012) suggested that stimuli within one's environment could initiate, mitigate, or moderate behavior. For example, Pollock and Halkitis (2009) reported, in a sample of 311 MSM in New York City, that the environmental context of a sexual encounter was a statistically significant predictor of UAI, with men significantly more likely to engage in UAI at bareback sex parties and in bathhouses/sex clubs than in other locales (e.g., gym, bar, work). Associations between environmental influences and behavior support the promulgation of social action theory (Ewart, 1991). Social action theory focuses on the role of "social-contextual influences that constrain or enhance self-regulatory mechanisms" (p. 932). Congruent with this, Zea et al. (2009) reported that contextual factors present within a particular sexual encounter (i.e., relationship closeness, seroconcordance) were associated with UAI.

Consistent with social cognitive theory's concept of reciprocal determinism, one's behavior can also influence their environment and the behaviors of others. For example, Bandura (1986) humorously noted that "we are all acquainted with problem-prone individuals who, through their irksome conduct, breed negative social climates" (p. 29). One individual's behavior can significantly impact and influence the contextual standards

of a group, thereby influencing the behavior of others in the group. Bandura (1986, 2001) stressed the principal role of modeling in this influence on others. Latkin and Knowlton (2006) highlighted the significant benefit that behavioral modeling of condom use can have within MSM communities. Correspondingly, in a community-based participatory research (CBPR) study, participants in Rhodes et al. (2011) indicated the need for role models in the creation and implementation of interventions to increase condom use among MSM. One such intervention, EDGE (Mausbach, Semple, Strathdee, Zians, & Patterson, 2007), prioritizes the use of role-play and skill rehearsal in enhancing condom use for MSM methamphetamine users. Of the current 15 good or best practices listed by the CDC to be used with the MSM population (CDC, 2015d), nine include role plays and/or behavioral modeling in their intervention strategy.

Personal characteristics—Environment influences. The final bidirectional influence is that between personal characteristics and environmental context. As stated previously, one's beliefs, attitudes, schemas, and morals compose the personal characteristics that are fashioned over time and represent the confluence of personal standards that underpin a person's behaviors (Bandura, 1986, 2012). Bandura (1991) posited that these standards "are drawn from the tutelage of influential persons in one's social environment or from the standards prescribed by them" (p. 254). HIV/AIDS interventions targeting communities and promoting community empowerment demonstrate this, calling attention to the lowered personal standards associated with sexual behavior in oppressed and disempowered communities (Beeker, Guenther-Grey, & Raj, 1998; Crossley, 2001). For example, Diaz, Ayala, and Bein (2004), in a sample of 912 Latino MSM, reported that risky sexual behavior (i.e., UAI) is partially attributable

to community oppression, mediated by increased likelihood of being in difficult sexual situations (e.g., sex under the influence of drugs, sex with an unequal power balance, sex to escape negative emotions). Aligning with this, the CyBER/M4M intervention designed by Rhodes et al. (2007) used tenets of community empowerment to provide chat-room based support to MSM, helping to inform the sexual behavior personal standards (i.e., norms and expectations) of men participating in chatrooms.

Social cognitive theory, through reciprocal determinism, posits that personal characteristics can also influence one's environment. Personal characteristics dictate into which environments individuals enter (Bandura, 1986, 1991, 2012). Bandura (1986) summarized this process by stating that "the environment is inoperative until it is actualized" (p. 28). For example, emerging evidence shows that MSM who identify as "barebackers" may be more likely than MSM who do not identify as such to seek out sexual encounters online via internet chat sites (Elford, Bolding, Davis, Sherr, & Hart, 2007; Halkitis & Parsons, 2003). Still, compared to the other five influences inherent in social cognitive theory, there remains a relative paucity of research investigating the influential role of personal characteristics onto environmental context within the HIV/AIDS literature for MSM. The scant evidence available prioritizes the catalytic role of an individual's personal characteristics (e.g., beliefs, values, morals, culture) in creating risky situations (Cooper, 2010). For example, Zeglin (2015), in a systematic review of 31 sources (e.g., peer-reviewed articles, book chapters), reported that masculinity was identified as facilitating several HIV risk scenarios for MSM (e.g., lower medication adherence, drug use, partner concurrency). Similarly, Bianchi et al. (2010) reported that Latino cultural sexual scripts for MSM highlight the role of specific

personal characteristics (i.e., passion, spontaneity), possibly facilitating situations with high HIV risk (e.g., lack of preparedness, loss of control).

Social Cognitive Theory and the Current Study

The current study proposes to assess the predictors of condom use within the social cognitive theory framework using hierarchical generalized linear modeling. In essence, the study will test the effect of personal characteristics and environmental influences on behavior. Also, possible interaction effects between personal characteristics and environmental influences will be examined. The target behavior is condom use during a particular sexual encounter. The personal characteristic being tested is that of Latino cultural beliefs and the environmental influences are emotional closeness and sexual desire. Figure 2.2 graphically displays the relationship of these variables within the social cognitive theory framework, with arrows denoting the planned targets of analysis.

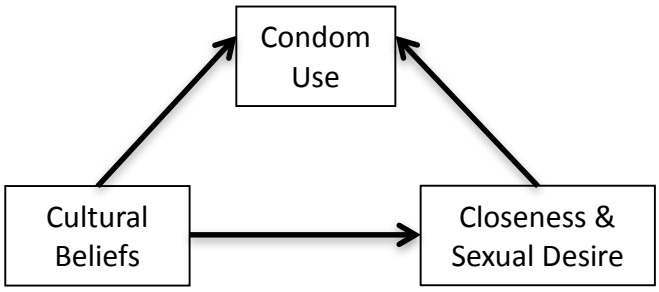


Figure 2.2: This figure displays the components of social cognitive theory as they apply to the current study.

Condom use as behavior. According to CDC (2013e), abstinence—avoiding sexual activity—is the most effective way to prevent contraction of STIs including HIV.

However, abstinence can be difficult to maintain. Sexual activity opens an individual up to contracting STIs. For individuals choosing to engage in sexual activity involving penetration by a penis, condoms are a highly effective protection against many common STIs including human papillomavirus (HPV), chlamydia, gonorrhea, trichomoniasis, hepatitis B, genital herpes, and HIV (CDC, 2013b). This is because condoms, when used correctly and without problems, provide an "essentially impermeable barrier to particles the size of [STI] pathogens" (CDC, 2013a, p. 1). Because of this, condom use is an example of a behavior that, according to social cognitive theory and social action theory, is a public health self-regulatory goal (Bandura, 2001; Ewart, 1991; Latkin & Knowlton, 2005). Moreover, it is a self-regulatory goal that, as mentioned above, has been shown to be highly effective at protecting at against HIV (Koblin et al., 2006; McKay, 2007; Varghese et al., 2005). Condom use, as a self-regulatory sexual goal; behavior, can be difficult to accurately measure. There are numerous challenges with measuring condom use including social desirability, recall accuracy, and participation bias (Fenton, Johnson, McManus, & Erens, 2001; Noar, Cole, & Carlyle, 2006). Nonetheless, because of its aforementioned effectiveness and efficiency (i.e., considerably less expensive than PrEP), it remains a viable health-related outcome measure.

Culture as personal characteristic. Culture, through sharing of common beliefs, values, and norms, "provides its members with some degree of personal and social meaning" (Chi-Ying Chung & Bemak, 2002, p. 154). Culture aligns with social cognitive theory's definition of a personal characteristic as being part of what an individual thinks, feels, or believes (Bandura, 1986, 2012). Additionally, Bandura (2002) detailed the important influence of culture and the values, traditions, norms, and schemas

shaped by culture on an individual's behavior. Prioritized within this were the roles of self-efficacy, motivation, and agency. Cultural identity could also inform the components of TPB (Markus & Kitayama, 1991), an established theory explaining the relationship between personal characteristics and behavior as mentioned above. Taken together, this signals culture as an important personal characteristic to consider when investigating behavior.

Warren et al. (2008) highlighted the need for more rigorous attention to the cultural correlates of condom use among MSM and aligned this with a call for culturally sensitive interventions. There is growing support for the assertion that the lived experiences of cultural minority populations including oppression, prejudice, and gender-roles may facilitate risky sexual behavior including UAI (Diaz et al., 2004; Marín, 2003). Aligning with this, von Sadovszky et al. (2014) suggested tailoring interventions to the participants' culture to improve the effectiveness of the intervention. The current study, congruent with this recommendation, further explores the role of culture on UAI behavior among Latino MSM to help inform future interventions for this population.

Closeness and sexual desire as environmental influences. As highlighted in Ewart (1991), environmental influences can create situational context. A detailed review by Misovich, Fisher, and Fisher (1997) emphasized the role of relationship closeness in HIV risk behavior including UAI. They hypothesized that this environmental influence existed regardless of the individual's personal characteristics, highlighting the contextual effects of this association. Relationship closeness has consistently been shown to be correlated to UAI, with MSM more likely to engage in UAI with close/main partners than with casual partners (Carballo-Diéguez, Remien, Dolezal, & Wagner, 1997; Hensel,

Rosenberger, Novak, & Reece, 2012; Hoff, Chakravarty, Beougher, Neilands, & Darbes, 2012). Mustanski, Newcomb, and Clerkin (2011), in a hierarchical generalized linear model involving 413 sexual partnerships nested within 122 MSM, reported that men who indicated that their relationship was serious were 7.82 times more likely than men who indicated that the relationship was less than serious to report UAI. Also, among 180 MSM, reports of greater arousal were significantly predictive of UAI (i.e., less likely to wear condoms when having greater sexual desire; Golub, Kowalczyk, Weinberger, & Parsons, 2010).

Research involving Latino MSM demonstrates similar results. In focus groups of 31 Latino MSM, UAI was often accredited to a desire for emotional closeness and intimacy (Balán, Carballo-Diéguez, Ventuneac, & Remien, 2009). Jarama et al. (2005) also reported that greater sexual attraction also significantly predicted UAI in Latino MSM. Zea et al. (2009), in their hierarchical generalized linear model involving 1,777 sexual encounters nested within 413 Latino MSM, reported that both greater relationship closeness and sexual desire were statistically significant contextual predictors of UAI. Wilson, Díaz, Yoshikawa, and Shrout (2009) reported similar results in their sample of 270 Latino MSM, with relationship closeness and sexual desire both significantly increasing the odds of UAI. These results support the results of Diaz and Ayala (1999), wherein the Latino cultural sexual beliefs of loss of control and love and intimacy were associated with UAI.

Data Structure

Social cognitive theory, as presented in this chapter, highlights the interaction between the individual and the environmental context. One individual may be exposed to

varying contexts. Moreover, the individual may or may not behave rather differently between contexts despite and/or because of stable personal factors (Bandura, 1986; 2012). Data collected from the individual pertaining to these stable factors would be applicable across contexts. Whereas data collected regarding the context itself would vary across contexts to which the individual is exposed. This data structure is one type of nested data, wherein one level of data is nested within another; this is also sometimes called multilevel data for this reason (Goldstein, 2011; Raudenbush & Bryk, 2002; Stevens, 2012). For example, multiple contexts (i.e., level-1) would be nested within a single individual (i.e., level-2). Traditional linear regression is incapable of handling this form of data without either disaggregating the level-2 data onto the level-1 data (thus eliminating the assumption of independence of observations) or aggregating the level-1 data into level-2 (thus discarding within-group variance information). Raudenbush and Bryk (2002) summarizes by noting that "aggregating and disaggregating are both unsatisfactory" (p. xx) methods with which to analyze such data.

With such data sets, it is common for researchers to use survey research to gather data at both levels (Goldstein, 2011). Such a survey would contain items regarding stable personal factors as well as items regarding a specific event or context. These latter items would be repeated for as many events or contexts as necessary, while the former items are asked only once (Goldstein, 2011; Stevens, 2012). A recent National Institutes of Health (NIH; 2003) project proposed to collect HIV/AIDS epidemiologic data in precisely this way, proposing "an innovative approach with a theoretical model that includes variables at two levels" (para. 1). This project sought to include items at the "person level" (i.e., participant) as well as at the "situation level" (i.e., sexual encounter).

During the four-year study, researchers were able to collect data on 2,258 sexual encounters nested within 482 MSM (see Zea et al., 2009). This data has yielded 10 published articles (see NIH, 2003) on topics including condoms and pleasure (Calabrese et al., 2012), public sex (Reisen, Zea, Bianchi, & Poppen, 2011), circumcision (Reisen, Zea, Poppen, & Bianchi, 2008), and closeness and desire (Zea et al., 2009). To date, Zea et al. (2009) is the only published multilevel analysis using this data.

Recommendations for Future Inquiry

Considering the aforementioned research, there is a sizeable body of literature investigating the risk factors associated with HIV and condom use among Latino MSM to help inform counselors in their work with this population. However, there remain significant gaps in the knowledge base. The following are recommended areas of future research and are outlined briefly below.

1) Knowledge Base of Counselors: Despite the general density of information within the literature regarding culture and condom use, no research was located that assessed the degree to which counselors are aware of this information and/or are incorporating this information into their work with Latino MSM. This could be considered a needs assessment of sorts. If counselors are unfamiliar with and/or not incorporating the information, this may indicate a strong need for the development of an intervention that includes Latino cultural beliefs among its constructs.

2) Latino Cultural Norms: There is presently, as mentioned above, emerging evidence that Latino cultural is associated with UAI. What remains unknown are the specific norms within Latino culture that predict UAI. Save for the results of Diaz and Ayala (1999), which used qualitative interviews to identify three cultural norms

associated with condom use, and Calabrese et al. (2006), which piloted the LSBS and identified three valid constructs, little is known about the cultural norms involved in condom decision-making. There is to date no quantitative study evaluating the specific cultural norms associated with UAI.

3) Measuring UAI: Challenges in data collection and population availability confound some measures of UAI. Assessing condom use at last sexual contact, for example, is a very popular means by which to measure UAI. It is, however, an inelegant measure because it is insensitive to behavior patterns (i.e., condom use or non-use at the most recent sexual contact could be the exception and not the rule). Conversely, the most recent sexual encounter is more likely to be recalled accurately. Multilevel analyses, with sexual encounter nested within individual, can identify patterns in condom use across several sexual encounters.

4) Latino Cultural Norms Moderating Effects: The current literature largely investigates the direct effect of Latino cultural beliefs on condom use. Even with an understanding of specific cultural norms (see recommendation #2 above), this still does not elucidate the condom-use decision-making process for Latino MSM. Social cognitive theory and social action theory highlight the important role of context in decision-making. Aligning with this, there is a need to assess whether and to what extent Latino cultural norms influence decision-making in such context; this mean evaluating the moderating effects of Latino cultural beliefs on condom use. As mentioned above, multilevel analysis is a viable method by which to accomplish this goal.

5) Effectiveness and Efficacy of Culturally Sensitive Interventions: Interventions designed to promote counseling as prevention will need to be rigorously tested and

eventually validated. To aid in the interventions success, it should first be rooted in evidence- or theory-base, developed using community/stakeholder input, and tested using a randomly controlled trial. At present, there is still a need to complete the first step of identifying viable constructs to include in eventual interventions.

Summary and Current Study

The current study intends to address some of these more nuanced, though not immaterial, knowledge gaps. As mentioned above and aligning with social cognitive theory, one such gap is that of the interplay between the personal factors and environmental influences of behavior from which to develop counseling intervention for prevention of HIV infection among Latino MSM. Zea et al. (2009) was the only available multilevel analysis investigating this dynamic, nesting sexual encounters (i.e., environmental influence) within individuals (i.e., personal characteristics). Their findings, though precedential and informative, reported on UAI in its combined form. As prior research has indicated (e.g., Frye et al., 2010; Poppen, Reisen, Zea, Bianchi, & Echeverry, 2004), risk factors vary in significance between URAI and UIAI. This is an important note, considering the substantial disparity in HIV transmission risk between these two sexual roles (CDC, 2015a; Li et al., 2010; Sheth & Thorndycraft, 2009; USDHHS, 2015A; Zeglin, 2015; Zuckerman et al., 2004). The current study seeks to utilize similar methodology, placing closeness and sexual desire as encounter-level variables (i.e., environmental influences), while conducting separate analyses for URAI and UIAI.

Additionally, building off of the foundation provided by previous work highlighting the roles of closeness and sexual desire in UAI (e.g., Diaz & Ayala, 1999;

Wilson et al., 2009; Zea et al., 2009), especially considering the robust findings of Mustanski et al. (2011), the current study investigates the influence of Latino cultural beliefs on these elements. This aligns with the abovementioned need for more quantitative investigation of the specific cultural beliefs involved in the condom-use decision-making process. Though Lo et al., (2001) already undertook this task in a regression analysis, their results were non-significant. This may be due to the use of an aggregated LSBS scale, which had previously (see Calabrese et al., 2006) been shown to have three psychometrically sound constructs. The current study seeks to confirm these constructs through factor analysis methodology, and to use these distinct constructs as individual-level predictors (i.e., personal characteristics) in the multilevel analysis.

The aim of the current study is to address the lack of condom-use counseling interventions for Latino MSM by informing the knowledge necessary for counselors to engage in culturally competent practice with this population (AMCD, 1996). Considering the high infectivity of UAI and the efficient protective attributes of condoms, the current study proposes to clarify the role of culture in condom-use decision-making for Latino MSM. The Latino MSM population is disproportionately affected by HIV yet does not have interventions derived from culturally-sensitive quantified information (CDC, 2015b, 2015d; O'Donnell et al., 2014). Using the results of the current study, the possible constructs to include as components of HIV counseling prevention interventions for Latino MSM can be identified and synthesized; this can support an evidence- and theory-base for subsequent studies to begin validating such interventions.

Chapter 3: Methods

This chapter, Chapter 3, will present the secondary dataset, relevant research questions and hypotheses along with the methodology used to answer these questions. The goal of the current analysis is to examine the relationship between Latino cultural norms and condom use decision-making. More specifically, the study will seek to identify: 1) what specific cultural beliefs are involved in this process and 2) whether they moderate factors that have already been shown to be situational influences on condom use decision-making in this population. This research will utilize the abovementioned survey data collected in NIH (2003) from a sample of Latino MSM living in New York City. All variables were self-reported using Audio Computer-Assisted Self Interview (A-CASI).

Research Questions and Hypotheses

The study's research questions include several specific statistical analyses. The first research question informs the later ones and the corresponding hypothesis is congruent with results of Calabrese et al. (2006). This research question and hypothesis is:

RQ1. Do the items presented in the Latino Sexual Beliefs Scale (LSBS) yield psychometrically sound constructs?

H_1: The LSBS will yield three psychometrically sound constructs.

Hypothesis 1 was tested using factor analysis to identify possible constructs. These presently unknown constructs then served as independent variables at level-2 (i.e., the person level). In multilevel data, the number of independent variables at each level impacts the number of statistical tests and, therefore, the number the hypotheses

(Goldstein, 2011; Raudenbush & Bryk, 2002). Assuming the null for H_1 is rejected, there are 22 additional hypotheses being tested in the study (11 for UIAI and 11 for URAI). These research questions and corresponding hypotheses are:

RQ2. Do any of these constructs predict condom use at the encounter level?

$H_2 – H_4$: LSBS constructs 1; 2; and 3 will each predict higher odds of UIAI

$H_5 – H_7$: LSBS constructs 1; 2; and 3 will each predict higher odds of URAI

RQ3. Do closeness and sexual desire maintain their predictive relationship with condom use at the encounter level?

$H_8 – H_9$: Closeness and sexual desire will predict higher odds of UIAI

$H_{10} – H_{11}$: Closeness and sexual desire will predict higher odds of URAI

RQ4. Do any of the LSBS constructs moderate the relationships of closeness or sexual desire on condom use at the sexual encounter level?

$H_{12} – H_{14}$: LSBS constructs 1; 2; and 3 will each moderate closeness effect on UIAI

$H_{15} – H_{17}$: LSBS constructs 1; 2; and 3 will each moderate closeness effect on URAI

$H_{18} – H_{20}$: LSBS constructs 1; 2; and 3 will each moderate sexual desire effect on UIAI

$H_{21} – H_{23}$: LSBS constructs 1; 2; and 3 will each moderate sexual desire effect on URAI

Hypotheses 2 – 23 will be tested using hierarchical generalized linear modeling (HGLM) techniques. The *a priori* hypothesized model is presented in Figure 3.1. One HGLM model will be run for UIAI and one for URAI.

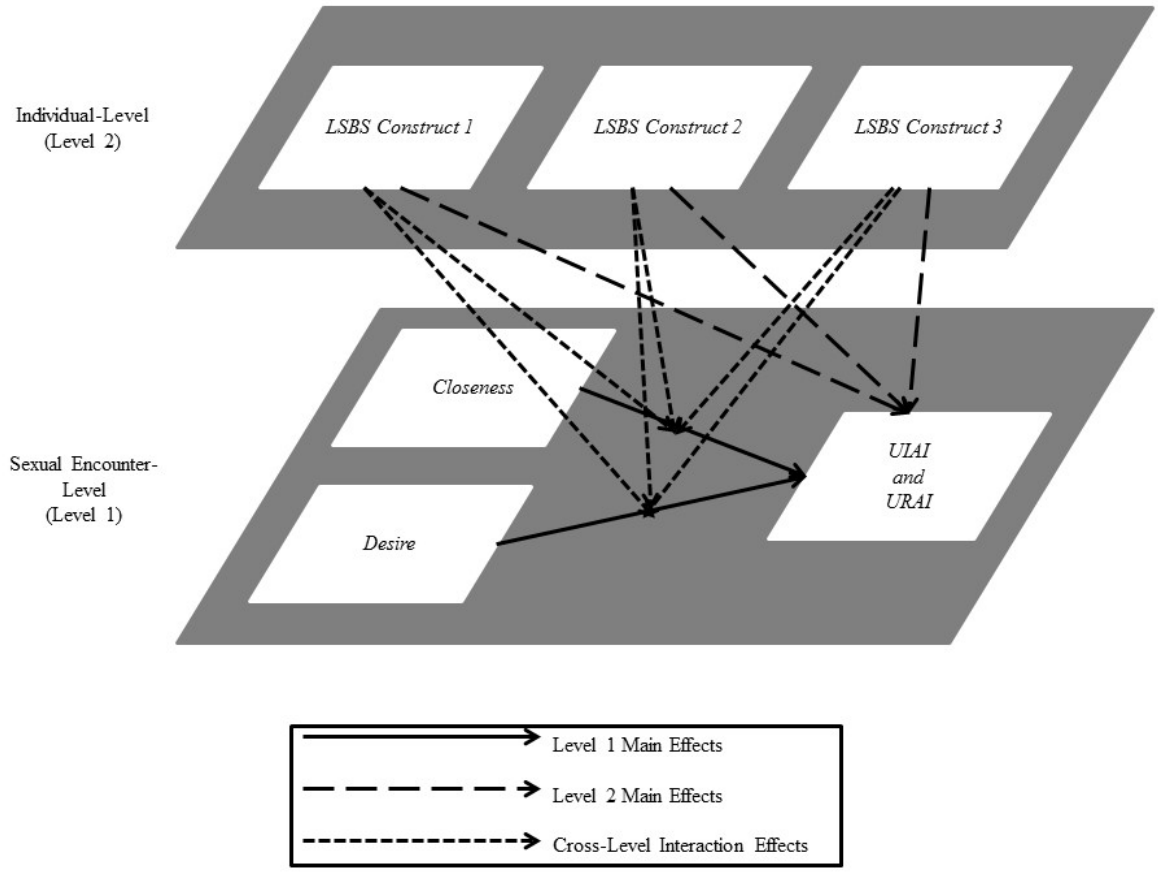


Figure 3.1: This figure displays the hierarchical generalized linear model that will simultaneously test all of the statistical hypotheses.

Participants

Population and sample. The population of the present study is Latino MSM living in the US. Secondary data will be used to access a sample of this population. The dataset utilized is the data collected through the NIH (2003) project by Zea and colleagues (see Zea et al. 2009). Data was collected using A-CASI; CASI surveys have been shown to promote more complete response patterns by participants (De Leeuw, Hox, & Kef, 2003; Fenton et al., 2001; Kurth et al., 2004). The men in NIH (2003) were recruited via advertisements (e.g., paper flyers), referrals from health organizations, and

snowball sampling methods. All participants were living in New York City and were of Brazilian, Columbian, or Dominican ethnicity and reported having had sexual contact with other men within the last six months; the men in this sample are all Latino MSM, the population of interest. In all, NIH (2003) included 482 participants, of which 146 (30.3%) were Brazilian, 169 (35.1%) were Colombian, and 167 (34.6%) were Dominican. The full sample had a mean age of 36.37 (SD = 9.54). The majority of the sample identified as gay (83.8%), bisexual (17.6), as MSM (12.2%), or on the "down low" (1.2); four participants (.8%) identified as straight. These percentages do not equal 100% because participants were allowed to mark more than one sexual orientation. The mean score on the LSBS was 3.07 (*SD* = .63). The mean scores for closeness and sexual desire were 2.45 (*SD* = 1.19) and 3.12 (*SD* = .82) respectively (see Table 3.1 for information regarding scales). The study will use the full sample.

Human participants and ethical considerations. Since secondary data was used, many of the typical ethical considerations regarding recruitment, informed consent, and data collection are not directly applicable. Indirectly, however, it is important to note that the study procedures presented in NIH (2003) were approved by the Institutional Review Board (IRB) of The George Washington University and by the NIH. The current study does not have access to personally identifiable information (PII); the researchers involved with the NIH (2003) project removed this information and only included participant ID numbers in the dataset to be used for the current study. Because of this, there is believed to be limited threat to participants as a result of the current study. To further protect participant data, the dataset will be permanently stored on a password protected flashdrive, which will remain locked in the author's desk within a locked office

that is housed at the Milken Institute School of Public Health at George Washington University and the dataset will only be accessed in that office. All data transformations will be done through creation of an SPSS syntax file; this prevents the need to save multiple copies of the SPSS data files, thus reducing risk of data breach. On July 15, 2015, The GWU IRB reviewed the current study's research proposal and does not consider it human subjects research.

Measures

The present study will utilize five measures contained within the NIH (2003) dataset. The Latino Sexual Beliefs Scale (LSBS), a single-item relationship closeness measure, a single-item sexual desire measure, and a two-item condom use measure will be used. All items and their possible responses were presented in English, Portuguese, and Spanish (e.g., "Latino men are passionate lovers/ Os homens latinos são amantes cheios de paixão/ Los hombres latinos son amantes apasionados"). Only the English translations are presented in the below detailed descriptions of measures. Table 3.1 offers a summary of the measures to be used in the study.

Table 3.1
Summary of Measures

Variable Assessed	Variable Type	Measure	Author (Year)[a]	Number of Items	Item Structure
Cultural Beliefs	Level-2 Independent	Latino Sexual Beliefs Scale	Calabrese et al. (2006)	13	Likert (1-5)
Closeness	Level-1 Independent	Author-created Measure	Zea et al. (2009)	1	Likert (1-4)
Sexual Desire	Level-1 Independent	Author-created Measure	Zea et al. (2009)	1	Likert (1-4)
UIAI	Dependent	Author-created Measure	Zea et al. (2009)	2	Dichotomous (Yes/No)
URAI	Dependent	Author-created Measure	Zea et al. (2009)	2	Dichotomous (Yes/No)

Note: [a]The listed citation is the reference in which the NIH (2003) items were first used

LSBS. The LSBS is a measure of cultural beliefs specific to sexuality within Latino culture. It was originally developed through qualitative interviews and piloted as a 10-item inventory (Calabrese et al., 2006). This pilot factor analysis, including 120 Latino MSM of Brazilian, Columbian, and Dominican origin, yielded three factors (Romance/Passion, Relinquishment of Agency, and Hypersexuality) incorporating eight items with factor loadings of at least .72 (M = .81). The eigenvalues of all scales were a minimum of one. Subsequent to this pilot analysis, three additional items were added to the LSBS, making a 13-item scale (see Lo et al., 2011). This 13-item full LSBS has a Cronbach's alpha of .81, signifying good internal consistency (Kline, 2013; Lo et al., 2011; Tavakol & Dennick, 2011). All items (e.g., "Latino men are passionate lovers," "Men have little control over their sexual impulses," "Saying 'no' to a potential sexual partner is difficult because it might hurt his feelings") are scored on a five-point Likert scale with 1 = "Strongly Disagree," 2 = "Disagree," 3 = "Neither Agree nor Disagree," 4 = "Agree," and 5 = "Strongly Agree." Table 3.2 presents the full 13-item LSBS along with the factors and loadings of the original eight items. The study will include a factor analysis of the full LSBS in order to identify psychometrically sound factors (see factor analysis section below). Only those with satisfactory eigenvalues, factor loadings, and internal consistency will be utilized in subsequent analyses (see research questions and hypotheses above). Because NIH (2003) conceptualized Latino cultural beliefs as an individual-level variable, the LSBS items were presented only once to the participants.

Closeness. In the NIH (2003) data, the level of relationship closeness during each sexual encounter was measured using a single item (i.e., "How would you describe your relationship with this person at the time of the sexual encounter?"). This was

answered on a 4- point Likert scale with 1 = “There was no relationship,” 2 = “There was a very limited relationship,” 3 = “There was a close relationship,” and 4 = “There was a very close relationship.” Though no psychometric data on this scale is available, this measure was successfully used in Zea et al. (2009). Additionally, a similar single-item 4-point Likert scale measure of emotional closeness was used in Wilson et al. (2009) to explore its relationship to UAI. Such single-item measures have been found to be no less valid than other lengthier multi-item measures of the same constructs (see Abdel-Khalek, 2006; Bergkvist & Rossiter, 2007; Robins, Hendin, & Trzesniewski, 2001). Nonetheless, the current study explored the psychometric properties of the closeness measure to ensure validity. Because relationship closeness was considered an encounter-level variable in NIH (2003), this item was presented to participants for each sexual encounter reported.

Table 3.2
Full 13-Item LSBS with Factors and Loadings from Original 8-item Version

Item	RP	RA	HS
1. Men have little control over their sexual impulses.			.85
2. Men are always ready for sex.			.89
3. Latino men are romantic when they are in love.	.81		
4. Latino men are passionate lovers.	.80		
5. Latino gay men prefer masculine men as partners.			
6. When Latino gay men are in love, they surrender themselves to their partners’ desires.	.77		
7. Fate determines whether a man will get a sexually transmitted disease.[a]		.72	
8. Sometimes it is better to go along with a sexual partner’s desires in order to avoid conflict.		.82	
9. Saying ‘‘no’’ to a potential sexual partner is difficult because it might hurt his feelings.		.80	
10. Sex without penetration seems incomplete.			
11. It is harmful for a man to have an erection (a hard-on) without ejaculating.			
12. It is hard to say no to a sexual partner who has been financially generous to me.			
13. Lovers who trust each other don’t use condoms.			

Note: [a]This item was worded as “If a man is meant to get a sexually transmitted disease, he will get it no matter what he does” in the original version of the LSBS; RP = Romance/Passion, RA = Relinquishing Agency, HS = Hypersexuality

Sexual desire. The NIH (2003) data uses a single-item measure of the level of sexual desire for each sexual encounter (i.e., "On this occasion, prior to any physical contact, how much did you want to have sex?"). This was answered on a 4-point Likert scale with 1 = "Not at all," 2 = "A little bit," 3 = "A moderate amount," and 4 = "A great deal." Again, there is no psychometric data available for this measure but was used successfully in Zea et al. (2009). Wilson et al. (2009), to investigate predictors of UAI among MSM, used a similar single 4-point Likert scale item to measure sexual attraction. Within the literature, sexual desire/arousal has frequently been measured via single-item measures (see Boldero, Moore, & Rosenthal, 1992; Kontula & Haavio-Mannila, 2009). Supporting the use of self-reported sexual desire, Chivers, Seto, Lalumiere, Laan, and Grimbos (2010), in a meta-analysis including over 1,918 males from 132 articles, found that self-report measures of sexual desire/arousal are strongly correlated to physiological genital measures of sexual desire/arousal (e.g., penile plethysmography). Still, psychometric testing of the sexual desire measure was conducted, again to ensure measurement validity. As with the closeness measure above, level of sexual desire was considered an encounter-level variable in NIH (2003) and the measure was presented to participants for each sexual encounter that they reported.

UAI. The variable of UAI, as mentioned above will be divided into UIAI and URIA. This approach is believed to offer a more nuanced understanding of the possible sexual-role based differences in condom use decision-making. Both UIAI and URIA will be measured using a constructed measure containing two items. Because condom use varies across sexual encounter and is therefore an encounter-level variable, NIH (2003) presented the condom use items to participants for each sexual encounter that they

reported.

UIAI. Unprotected insertive anal intercourse will be measured by computation. NIH (2003) includes an item asking if "You inserted your penis in your sexual partner's anus" and an item asking if "You wore a condom." Both of these items were answered via dichotomous "Yes" or "No" response options. Participants answering "yes" to the first item and "no" to the latter will be considered to have engaged in UIAI. All others will be considered to not have engaged in UIAI.

URIA. Unprotected receptive anal intercourse, much like UIAI above, will be measured by computation; NIH (2003) includes two items that will be used to compute URIA. The first asks if "Your sexual partner inserted his penis into your anus." The second item asks if "Your sexual partner wore a condom." Both of these items were answered via dichotomous "Yes" or "No" response options. Again, participants answering "yes" to the first item and "no" to the latter will be considered to have engaged in URAI. All others will be considered to not have engaged in URAI.

Procedure

The study, as mentioned above, used secondary data that was collected during the course of NIH (2003). NIH (2003) presented participants, via A-CASI, with demographic information survey items (e.g., age, sexual orientation), personal-level survey items (e.g., acculturation, depression), and encounter-level survey items (e.g., location, drug use, types of sexual behavior) for up to seven previous sexual encounters. The possible range of reported sexual encounters was 3—7. All participants were asked about their most recent, penultimate, and most memorable sexual encounter. Whether or not participants were asked about additional sexual encounters depended on their

responses to these items. For example, participants who reported that condom use during each of these encounters were asked about their most recent unprotected sexual encounter and vice versa. This pattern was continued for encounters involving sex in public place, sex in private place, and sex involving drug/alcohol use. In all cases, participants were able to indicate that such an encounter had never occurred. See Zea et al. (2009) for a detailed explanation of this process. For the current study, access to the data was requested as part of a course project and was granted by the PI and the team associated with NIH (2003). The final list of variables to be used in the current analysis will be submitted to the PI once the proposal for the study is accepted.

Analysis

As mentioned above (see research questions and hypotheses), the present study consisted of a two-step analysis. The first step was a factor analysis of the full 13-item LSBS measure. This was done in order to identify psychometrically sound constructs within the measure. These were then be used as individual-level variables in step two of the study, the HGLM modeling.

Exploratory factor analysis. There are four important considerations when conducting factor analysis: 1) sample size, 2) type of extraction, 3) type of rotation, and 4) technique to determine number of factors (Anna & Osborne, 2005; Costello & Osborne, 2005). Regarding consideration one, Stevens (2012) notes that the ideal sample size for factor analysis is between 5 – 20 participants for every item; Costello and Osborne (2005) recommend a 10:1 participant to item ratio. The full LSBS is 13 items, requiring a sample of at least 130 to be congruent with the above recommendations. The sample size was sufficiently large to conduct the factor analysis.

Regarding consideration two, since the aim of the factor analysis is not variable reduction, the extraction method would need to be sensitive to the shared variance between factors (Anna & Osborne, 2005). Therefore, congruent with the recommendations of Costello and Osborne (2005), the current analysis conducted descriptive statistical analysis on the full LSBS measure to determine normality. Showing no clear deviation from normality in the LSBS distribution, maximum likelihood extraction was used.

Concerning the third consideration, Costello and Osborne (2005) noted that behavioral sciences "generally expect some correlation among factors, since behavior is rarely partitioned into neatly packaged units that function independently of one another" (p. 3). This manifests in the present study because the LSBS factors are expected to share correlations, as they are believed to be somewhat subordinate to a larger collective cultural belief system. As such, the study opted to use oblique rotation over orthogonal rotation, allowing the factor extraction to be sensitive to this correlation.

Finally, pertaining to consideration four, the present study will follow the guidance of Anna and Osborne (2005), wherein it is recommended that factors be selected via a confluence of a theory-base, the Kaiser method, and scree plot analysis. Past research (Calabrese et al. (2006) identified three factors within the LSBS; this is the present study's theory-base that supported the construction of H_1 (see research questions and hypotheses). The present analysis also used the Kaiser method to supplement this theory-base, highlighting factors with eigenvalues ≥ 1.00. Ultimately however, a scree plot analysis, the technique prioritized by Costello and Osborne (2005), was employed to provide further support for the number of factors extracted, identifying factors that are

notably above the “elbow” of the scree plot curve. Further ambiguity was resolved by identifying the extraction results in which all factor loadings were greater than .300 and for which there was clear strength in factor interpretability, congruent with suggested best practices (Costello & Osborne, 2005; Williams, Brown, & Onsman, 2012). All facets of the factor analysis were conducted via SPSS syntax.

Hierarchical generalized linear modeling. The data required significant transformations prior to HGLM analysis. This included syntax to create two databases, one for level-1 (encounter-level) data and one for level-2 (personal-level) data. Level-1 data contained closeness, sexual desire, and condom-use regarding each sexual encounter, with participant ID numbers repeated for each sexual encounter reported by that particular participant (i.e., each participant will have multiple rows of data). Level-2 data included only one entry per participant and contained the LSBS factor data. After factor analysis, descriptive statistics for each LSBS factor were conducted in SPSS via syntax. Similarly, level-1 predictive analysis was conducted within SPSS. However, level-2 analysis and cross-level analysis was conducted with HLM 7 for Windows Software (Raudenbush, Bryk, & Congdon, 2004).

As discussed above (see data structure above), this type of multilevel data analysis allows for analysis of variance across levels of data, controlling for the variances explained by level-2 group membership (Raudenbush & Bryk, 2002; Woltman, Feldstain, MacKay, & Rocchi, 2012). As such, separate predictive equations are created to account for the multiple levels. Of note, because the outcome variable is dichotomous, and therefore nonlinear, a link function must be used to produce a linear measure. The outcome in this case is linked to the probability of an outcome (denoted as ϕ), and is

identified as η rather than *Y* as in models with linear outcomes (Raudenbush & Bryk, 2002). The level-1 equation was:

$$\eta = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + R$$

where η = log odds of UAI $\left(\frac{\phi}{1-\phi}\right)$, β_0 is the constant (i.e., intercept), β_1 is the regression coefficient of X_1 (i.e., closeness), β_2 is the effect of X_2 (i.e., sexual desire), and *R* is error. This equation tests RQ3. In multilevel analysis, each *X* becomes an outcome for level-2 equations. Assuming the null of H_1 is rejected, the predicted level-2 equations were therefore:

1) $\beta_{00} = \gamma_{00} + \gamma_{01} W_1 + \gamma_{02} W_2 + \gamma_{03} W_3 + u_0$

2) $\beta_{10} = \gamma_{10} + \gamma_{11} W_1 + \gamma_{12} W_2 + \gamma_{13} W_3 + u_1$

3) $\beta_{20} = \gamma_{20} + \gamma_{21} W_1 + \gamma_{22} W_2 + \gamma_{23} W_3 + u_2$

where γ_{00} is the overall mean intercept (i.e., intercept of the intercepts), γ_{01} is the regression coefficient of W_1 (i.e., LSBS construct 1) relative to its intercept, γ_{02} is the regression coefficient of W_2 (i.e., LSBS construct 2) relative to its intercept, and γ_{03} is the regression coefficient of W_3 (i.e., LSBS construct 3) relative to its intercept, γ_{10} is overall mean of β_1 adjusted for all *W*, γ_{20} is overall mean of β_2 adjusted for all *W*, γ_{11} is the regression coefficient for the effect of W_1 on β_1, γ_{12} is the regression coefficient for the effect of W_2 on β_1, γ_{13} is the regression coefficient for the effect of W_3 on β_1, γ_{21} is the regression coefficient for the effect of W_1 on β_2, γ_{22} is the regression coefficient for the effect of W_2 on β_2, γ_{23} is the regression coefficient for the effect of W_2 on β_3, u_0 is the random effects on the intercept, u_1 is the random effects on the slope of β_1, and u_2 is the random effects on the slope of β_2. Equation one tests RQ2 while equations two and three test RQ4. This produced a full hypothesized model for the study of:

$$\eta = (\gamma_{00} + \gamma_{01}W_1 + \gamma_{02}W_2 + \gamma_{03}W_3 + u_0) + (\gamma_{10} + \gamma_{11}W_1 + \gamma_{12}W_2 + \gamma_{13}W_3 + u_1)(X_1) + (\gamma_{20} + \gamma_{21}W_1 + \gamma_{22}W_2 + \gamma_{23}W_3 + u_2)(X_2) + R$$

This model will reveal the log odds of UIAI and URAI when all variables in the model are controlled for across the multilevel design. The effects of person were left to vary in the analysis, as a fixed effect model is inappropriate considering the high variability of behavior between individuals. Additionally, in order to increase interpretability and considering the hypothesis that all participants will indicate a certain level of endorsement of Latino cultural sexual beliefs, the HGLM analysis will use grand mean-centering for all Level-2 variables (Raudenbush & Bryk, 2002; Woltman et al., 2012;).

Two preliminary multiple logistic regressions were conducted, one for UIAI and one for URAI. The predictor variables were mean-centered LSBS (as in Lo et al., 2001), closeness, and desire. For this analysis, mean LSBS was disaggregated from the person-level onto the encounter-level. Operationally, this means that each sexual encounter reported by an individual included the same mean LSBS score, thus violating the assumption of independence of observations (Raudenbush & Bryk, 2002; Woltman et al., 2012). Nonetheless, a disaggregated multiple regression can be a helpful pilot test of the study's hypotheses. A significant regression model was found for both UIAI and URAI, validating the inclusion of these variables in an HGLM model. The results, presented in Table 3.3, indicate that closeness and desire were significant independent predictors of both UIAI and URAI, supporting the results of Zea et al. (2009) and of Wilson and colleagues (2009). Latino sexual beliefs were not significantly associated with either, congruent with the results of Lo et al. (2001). These results support the rationale for studying the multi-level effects of Latino sexual beliefs on UAI.

Table 3.3

Preliminary Disaggregated Multiple Logistic Regression for Predictors of UAI

	UIAI			URAI		
Variable	B	OR	99.5% CI	B	OR	99.5% CI
LSBS	.159	1.17	[.95, 1.44]	.126	1.13	[.94, 1.37]
Closeness	.375	1.46**	[1.30, 1.63]	.337	1.40**	[1.27, 1.55]
Desire	.222	1.25**	[1.07, 1.47]	.215	1.24**	[1.07, 1.44]
χ^2		62.53**			60.46**	

Notes: LSBS = Latino sexual beliefs scale; UIAI = Unprotected insertive anal intercourse; URAI = Unprotected receptive anal intercourse; * = $p < .05$; ** = $p < .01$

Chapter 4: Results

This chapter, Chapter 4, will present the statistical results of the analyses performed to answer the four research questions. Broadly, as described in Chapter 2, the analyses will seek to identify what (if any) relationship exists between the person-level sexual beliefs of Latino MSM and two encounter-level predictors of UAI, closeness and sexual desire. Preliminary analysis presented in Chapter 3 showed that these variables produced a significant predictive model for both UIAI and URAI. This, however, was a disaggregated model. Chapter 4 will present the multilevel HGLM modeling results, preceded by the results of the exploratory factor analysis of the 13-item LSBS.

Research Questions and Hypotheses

For this study, the following research questions were asked, presented along with their corresponding alternative hypotheses:

RQ1 – Do the items presented in the LSBS yield psychometrically sound constructs?

H_1: The LSBS will yield three psychometrically sound constructs.

Assuming the null for H_1 is rejected, there are 22 additional hypotheses being tested in the study (11 for UIAI and 11 for URAI). These are presented below.

RQ2 – Do any of these constructs predict condom use at the encounter level?

H_2: LSBS construct 1 will predict higher odds of UIAI.

H_3: LSBS construct 2 will predict higher odds of UIAI.

H_4: LSBS construct 3 will predict higher odds of UIAI.

H_5: LSBS construct 1 will predict higher odds of URAI.

H_6: LSBS construct 2 will predict higher odds of URAI.

H_7: LSBS construct 3 will predict higher odds of URAI.

RQ3 – Do closeness and sexual desire maintain their predictive relationship with condom use at the encounter level?

H_8: Closeness will predict higher odds of UIAI.

H_9: Sexual desire will predict higher odds of UIAI.

H_{10}: Closeness will predict higher odds of URAI.

H_{11}: Sexual desire will predict higher odds of URAI.

RQ4 – Do any of the LSBS constructs moderate the relationships of closeness or sexual desire on condom use at the sexual encounter level?

H_{12}: LSBS construct 1 will moderate closeness effect on UIAI.

H_{13}: LSBS construct 2 will moderate closeness effect on UIAI.

H_{14}: LSBS construct 3 will moderate closeness effect on UIAI.

H_{15}: LSBS construct 1 will moderate closeness effect on URAI.

H_{16}: LSBS construct 2 will moderate closeness effect on URAI.

H_{17}: LSBS construct 3 will moderate closeness effect on URAI.

H_{18}: LSBS construct 1 will moderate sexual desire effect on UIAI.

H_{19}: LSBS construct 2 will moderate sexual desire effect on UIAI.

H_{20}: LSBS construct 3 will moderate sexual desire effect on UIAI.

H_{21}: LSBS construct 1 will moderate sexual desire effect on URAI.

H_{22}: LSBS construct 2 will moderate sexual desire effect on URAI.

H_{23}: LSBS construct 3 will moderate sexual desire effect on URAI.

Exploratory Factor Analysis of LSBS

RQ1. Using SPSS Software Version 22.0, the 13 items of the LSBS were entered into an exploratory factor analysis in order to answer RQ1. Results of the factor analysis,

saliently presented in the scree plot shown in Figure 4.1, suggest that a two-factor version of the 13-item LSBS most appropriately fits the data, rejecting the theory-based H_1.

Congruent with the recommendations of Kahn (2006), the factors were named by considering the common theme present throughout all included items, while noting that "more weight should be given to stronger structure coefficients when naming factors" (p. 699). Factor one contained six items; the three most highly loading items were "Latino men are passionate lovers", "Latino men are romantic when they are in love," and "When Latino gay men are in love, they surrender themselves to their partners' desires." These three items each align with romantic love; the original factor analysis of the 10-item LSBS scale (Calabrese et al., 2006) found that these three items formed a single factor, calling it "Romance/Passion." The present analysis is sensitive to another latent theme present in these three items: a sense of earnestness (e.g., "passionate lovers," "surrender themselves"). This theme, teamed with the theme of urgency (called "Hypersexuality" by Calabrese et al., 2006) displayed in some of the other items included on the factor, presented that the romance contained a notable libidinal insistence. As such, the present study identified the first factor as the *Romantic Exigency Factor*.

The second factor contained seven items; the three most highly loadings items were "Sometimes it is better to go along with a sexual partner's desires in order to avoid conflict," "Saying 'no' to a potential sexual partner is difficult because it might hurt his feelings," and "It is hard to say no to a sexual partner who has been financially generous to me." Each of these three items contain language that suggests passivity in sexual decision making. Calabrese et al. (2006), found that the first two items created a single factor, calling it "Relinquishing Agency." The concept of "relinquishment," however,

does not appear to apply to the remaining items on the second factor; these items maintain the theme of passivity, but rather highlighted deference to a general immutability of sexuality (e.g., "Sex without penetration seems incomplete," "It is harmful for a man to have an erection (a hard-on) without ejaculating"). As such, the present study identified the second factor as the *Sexual Acquiescence Factor.*

Congruent with the recommendations of Costello and Osborne (2005), all factor loadings are > .300, there are no cross-loadings > .300, and all factors have more than three items. The first factor, Romantic Exigency Factor (REF), contains six items with an average loading of .627, Cronbach's α = .80, and split-half reliability = .75. The second factor, Sexual Acquiescence Factor (SAF), contains seven items with an average loading of .574, Cronbach's α = .78, and split-half reliability = .75. Factor scores were generated for both of these factors. As seen in Figures 4.2 and 4.3 respectively, the factor scores were approximately normally distributed. The results of the factor analysis are presented in Table 4.1. Additionally, descriptive statistics were conducted for Romantic Exigency Beliefs (M = 3.83, SD = .687) and Sexual Acquiescence Beliefs (M = 2.42, SD = .828); these were the means used for the centering of these variables in the HGLM.

Effect on hypotheses. Because H_1 was not supported by the factor analysis, yielding two factors rather than the hypothesized three, the subsequent research questions required amendment prior to testing. With only two factors at level-2, the number of hypotheses is now 16. The adjusted research questions and hypotheses are therefore:

RQ2 – Do the two LSBS constructs predict condom use at the encounter level?

H_2: REF will predict higher odds of UIAI.

H_3: SAF will predict higher odds of UIAI.

H_4: REF will predict higher odds of URAI.

H_5: SAF will predict higher odds of URAI.

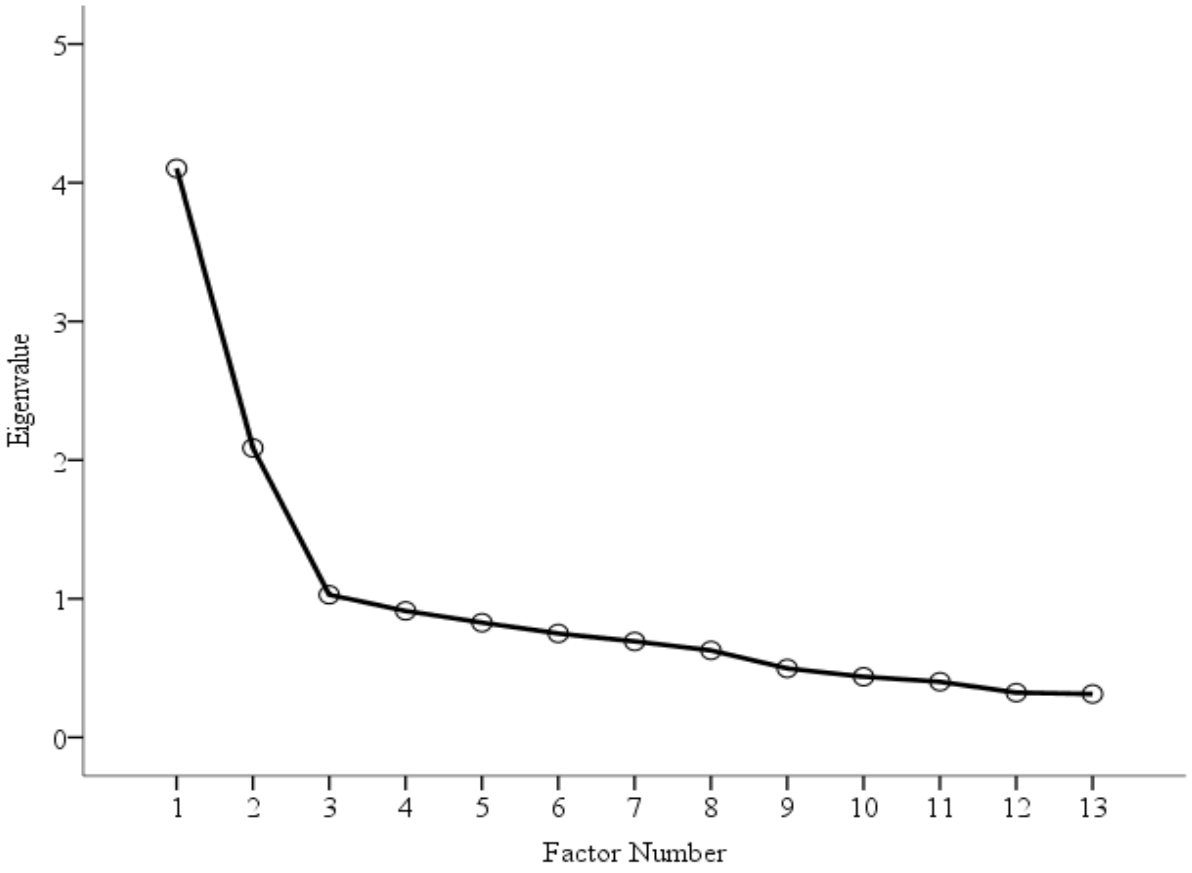
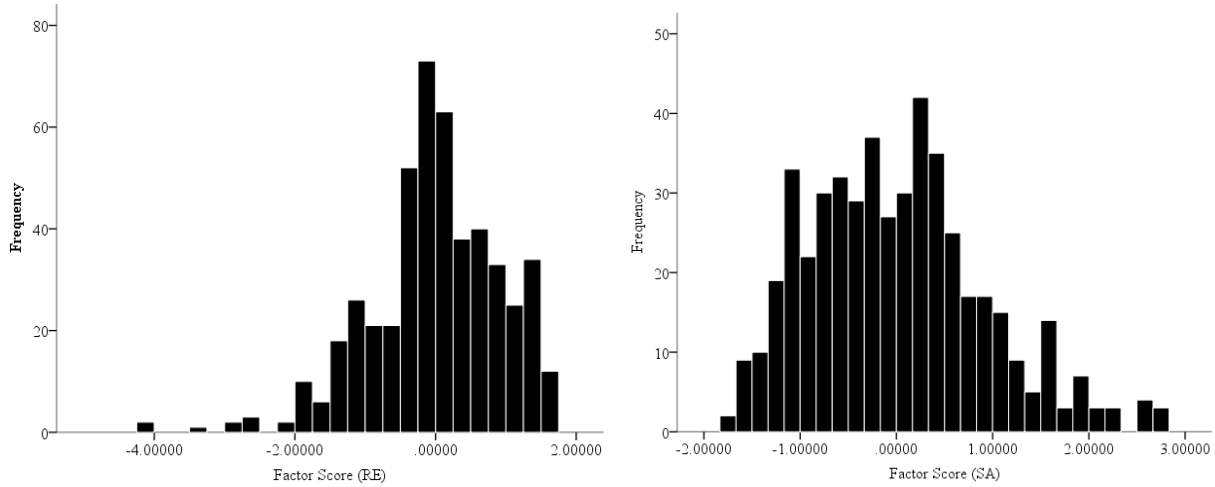


Figure 4.1: This figure displays the scree plot from the 13-item LSBS factor analysis.



Figures 4.2 and 4.3: These figures display the distribution of factor scores for REF (Left) and SAF (Right).

Table 4.1

LSBS Factor Analysis Including Loadings from Original 8-item Version

	Present Analysis		Original Analysis		
Item	Romantic Exigency	Sexual Acquiescence	RP	RA	HS
• Latino men are passionate lovers.	.85		.80		
• Latino men are romantic when they are in love.	.82		.81		
• When Latino gay men are in love, they surrender themselves to their partners' desires.	.69		.77		
• Latino gay men prefer masculine men as partners.	.54				
• Men are always ready for sex.	.44				.89
• Men have little control over their sexual impulses.	.42				.85
• Sometimes it is better to go along with a sexual partner's desires in order to avoid conflict.		.80		.82	
• Saying ''no'' to a potential sexual partner is difficult because it might hurt his feelings.		.76		.80	
• It is hard to say no to a sexual partner who has been financially generous to me.		.60			
• Fate determines whether a man will get a sexually transmitted disease.[a]		.58		.72	
• It is harmful for a man to have an erection (a hard-on) without ejaculating.		.49			
• Sex without penetration seems incomplete.		.42			
• Lovers who trust each other don't use condoms.		.37			

Note: [a]This item was worded as "If a man is meant to get a sexually transmitted disease, he will get it no matter what he does" in the original version of the LSBS; RP = Romance/Passion, RA = Relinquishing Agency, HS = Hypersexuality

RQ3 – Do closeness and sexual desire maintain their predictive relationship with condom use at the encounter level?

H_6: Closeness will predict higher odds of UIAI.

H_7: Sexual desire will predict higher odds of UIAI.

H_8: Closeness will predict higher odds of URAI.

H_9: Sexual desire will predict higher odds of URAI.

RQ4 – Do the two LSBS constructs moderate the relationships of closeness or sexual desire on condom use at the sexual encounter level?

H_{10}: REF will moderate closeness effect on UIAI.

H_{11}: SAF will moderate closeness effect on UIAI.

H_{12}: REF will moderate closeness effect on URAI

H_{13}: SAF will moderate closeness effect on URAI.

H_{14}: REF will moderate sexual desire effect on UIAI.

H_{15}: SAF will moderate sexual desire effect on UIAI.

H_{16}: REF will moderate sexual desire effect on URAI.

H_{17}: SAF will moderate sexual desire effect on URAI.

A graphical presentation of these adjusted hypotheses can be found in Figure 4.4.

Descriptive Statistics

After completion of the factor analysis, descriptive statistics were conducted on all variables included in the analysis. Though some of this information may be previously discussed in this or earlier chapters, Table 4.2 collectively presents the means, standard deviations, and correlation coefficients for the independent variables and Table 4.3 presents the frequencies of and related mean differences for the dependent variables.

As mentioned above, the means presented for REF and SAF are the means used for the grand mean-centering employed during the HGLM modeling.

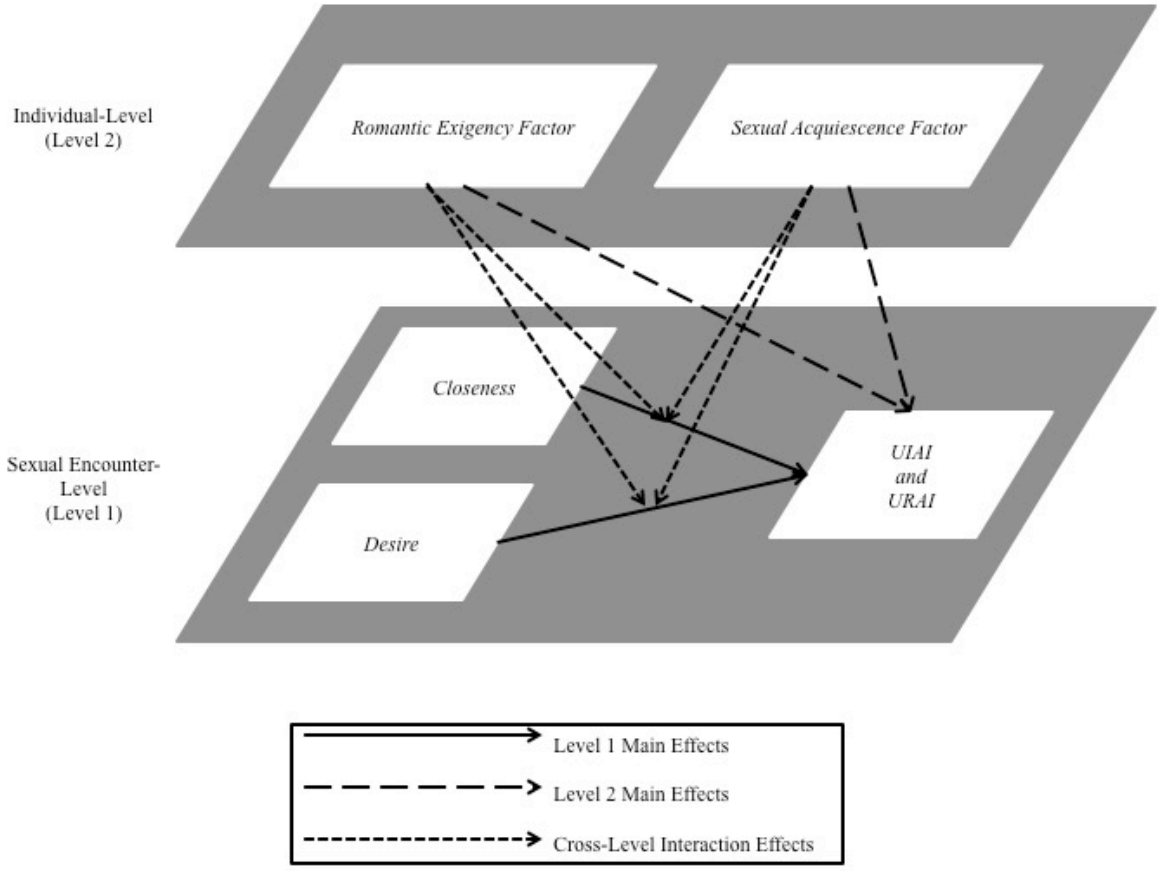


Figure 4.4: This figure displays the hierarchical generalized linear model used to simultaneously test all of the statistical hypotheses.

Table 4.2
Descriptive Statistics and Correlation Coefficients for Independent Variables

	Range	*M*	*SD*	1	2	3	4
1) REF	1 – 5	3.83	.687	1			
2) SAF	1 – 5	2.42	.828	.337**	1		
3) Closeness	1 – 4	2.45	1.19	-.003	-.088**	1	
4) Desire	1 – 4	3.12	.822	.148**	-.041	.144**	1

Notes: REF = Romantic Exigency Factor; SAF = Sexual Acquiescence Factor; * = $p < .05$; ** = $p < .01$

Table 4.3
Descriptive Statistics and Mean Differences for Dependent Variables within 2,258 Total Reported Sexual Encounters

	N "Yes"	% "Yes"	RE[a]	SA[a]	Closeness[a]	Desire[a]
UIAI	326	14.4	3.86/3.82	2.40/2.40	2.91/2.38**	3.27/3.09**
URAI	397	17.6	3.82/3.82	2.47/2.38*	2.85/2.37**	3.28/3.09**

Notes: [a]Mean scores are reported for "Yes"/"No" groups; REF = Romantic Exigency Factor; SAF = Sexual Acquiescence Factor; UIAI = Unprotected insertive anal intercourse; URAI = Unprotected receptive anal intercourse; * = $p < .05$; ** = $p < .01$

Hierarchical Generalized Linear Models

Adjustments to equation. To answer RQ2 – 4, HLM 7 for Windows Software (Raudenbush et al., 2004) was utilized. However, due to the results of RQ1, the Level-2 equations tested were now:

1) $\beta_{00} = \gamma_{00} + \gamma_{01}W_1 + \gamma_{02}W_2 + u_0$

2) $\beta_{10} = \gamma_{10} + \gamma_{11}W_1 + \gamma_{12}W_2 + u_1$

3) $\beta_{20} = \gamma_{20} + \gamma_{21}W_1 + \gamma_{22}W_2 + u_2$

where W_1 is the Romantic Exigency Beliefs score and W_2 is the Sexual Acquiescence Beliefs score; these variables were grand mean-centered. Accordingly, the mixed model was reconfigured to:

$$\eta = (\gamma_{00} + \gamma_{01}W_1 + \gamma_{02}W_2 + u_0) + (\gamma_{10} + \gamma_{11}W_1 + \gamma_{12}W_2 + u_1)(X_1) + (\gamma_{20} + \gamma_{21}W_1 + \gamma_{22}W_2 + u_2)(X_2) + R$$

UIAI model. The UIAI model included 479 Latino MSM in level-2 (three participants did not have sufficient data to be included in the modeling) and 1,971 sexual encounters in level-1 (287 encounters did not have sufficient data to be included in the modeling). The first model analyzed was the null model, also called the intercept only model (i.e., $\eta = \gamma_{00} + u_0 + R$). This model provided the information necessary to

compute the intra-class correlation (ICC). The ICC, signified as ρ, is computed as τ_{00} / ($\tau_{00} + \sigma^2$) where τ_{00} is the level-2 variance and σ^2 is the level-1 variance. The UIAI null model yielded τ_{00} = .02 and σ^2 = .13. The ICC is therefore ρ = .02 / (.02 + .13) = .13. This indicates that approximately 13% of the variance in η (i.e., the log odds of reporting UIAI) is at the person-level, suggesting that the remaining 87% is at the encounter-level. The results of the full UIAI HGLM model are presented in Table 4.4; a graphical presentation of the significant UIAI effects is available in Figure 4.5.

Table 4.4
Results of the UIAI HGLM Modeling

Fixed Effects	Coefficient	Standard Error	Odds Ratio	95% CI
Intercept (β_{00})				
Intercept (γ_{00})	-3.132	.21	.04**	[.03, .07]
REF (γ_{01})	-.179	.25	.84	[.52, 1.36]
SAF (γ_{02})	.366	.23	1.44	[.92, 2.26]
Closeness Slope (β_{10})				
Intercept (γ_{10})	.335	.04	1.40**	[1.28, 1.52]
REF (γ_{11})	.008	.06	1.01	[.90, 1.14]
SAF (γ_{12})	.067	.05	1.07	[.96, 1.19]
Desire Slope (β_{20})				
Intercept (γ_{20})	.184	.06	1.20**	[1.07, 1.36]
REF (γ_{21})	.072	.08	1.08	[.92, 1.26]
SAF (γ_{22})	-.151	.07	.86*	[.75, .99]
Random Effects	Variance			
Intercept (u_0)	1.60			
Closeness Slope (u_1)	.27			
Desire Slope (u_2)	.14			

Notes: REF = Romantic Exigency Factor; SAF = Sexual Acquiescence Factor; * = p < .05; ** = p < .01

RQ2. The UIAI model, presented in Table 4.4, indicates that neither Romantic Exigency Beliefs nor Sexual Acquiescence Beliefs are significantly associated with the reporting UIAI during a sexual encounter (ps > .11). That is to say that neither of these constructs have a direct effect on UIAI. These results fail to reject the null hypotheses for H_2 and H_3.

RQ3. The UIAI model, presented in Table 4.4, indicates that both closeness (*t*-ratio = 1.60, $p < .001$) and sexual desire (*t*-ratio = 3.01, $p = .003$) are significantly positively associated with reporting UIAI during a sexual encounter. Increasing levels of relationship closeness and sexual desire in a sexual encounter are associated with increased log odds of UIAI. These results indicate that the null hypotheses for H_6 and H_7 can be rejected.

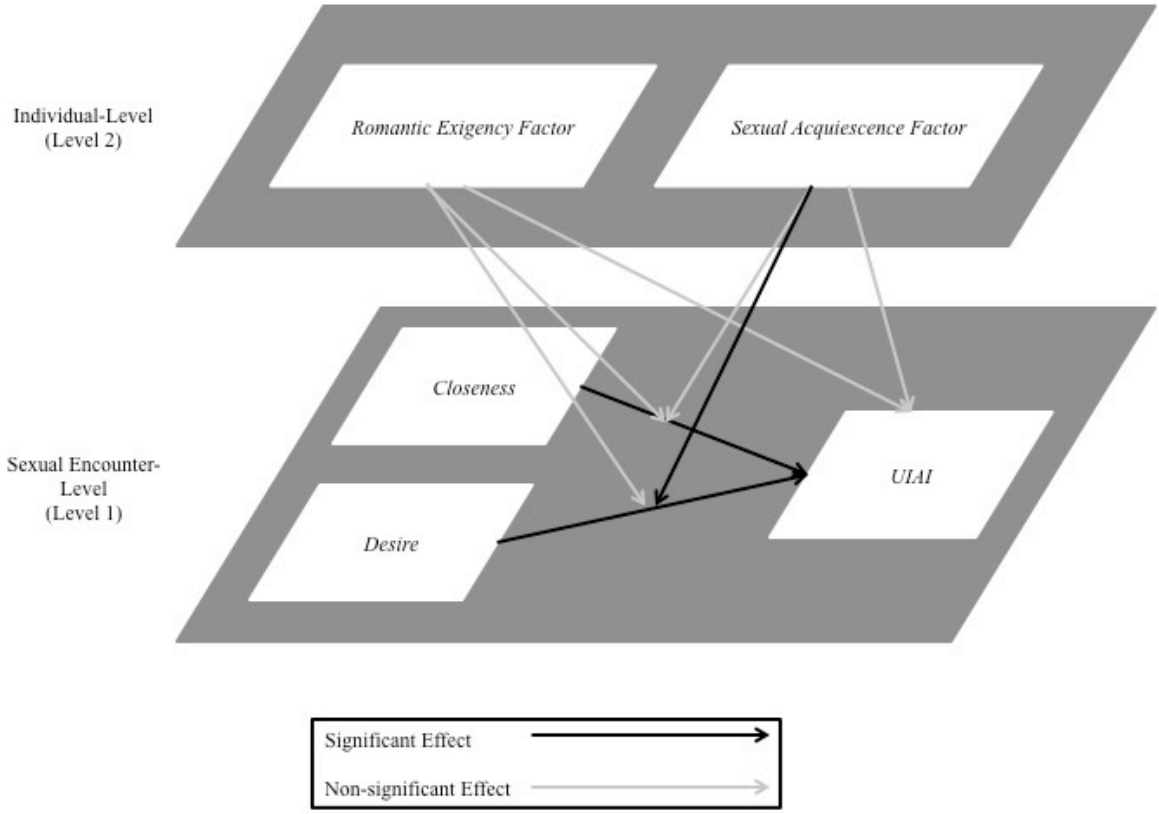


Figure 4.5: This figure displays the significant effects found in the hierarchical generalized linear model used to test for predictors of UIAI.

RQ4. Finally, the UIAI model indicates that Sexual Acquiescence Beliefs significantly negatively moderate the effect of sexual desire on UIAI (*t*-ratio = -2.11, $p = .04$). Participants with higher than average scores on the SAF scale

report a less steeply sloped relationship between sexual desire and the log odds of UIAI; that is to say that sexual desire becomes less necessary in predicting UIAI for individuals scoring highly on the SAF scale. This moderating effect is presented graphically in Figure 4.6, where the "Low SAF Group" are those scoring in the first quartile (i.e., SAF $\leq$ 1.86) and those in the "High SAF Group" are those scoring in the fourth quartile (i.e., SAF $\geq$ 2.89). Also, this table presents the predicted probability (PP) of UIAI by converting log odds (i.e., η) into probabilities via the following equation: PP = $\frac{\exp(\eta)}{[\exp(\eta)+1]}$. These results suggest that the null hypotheses for H_{15} can be rejected while the null hypotheses for H_{10}, H_{11}, and H_{14} fail to be rejected.

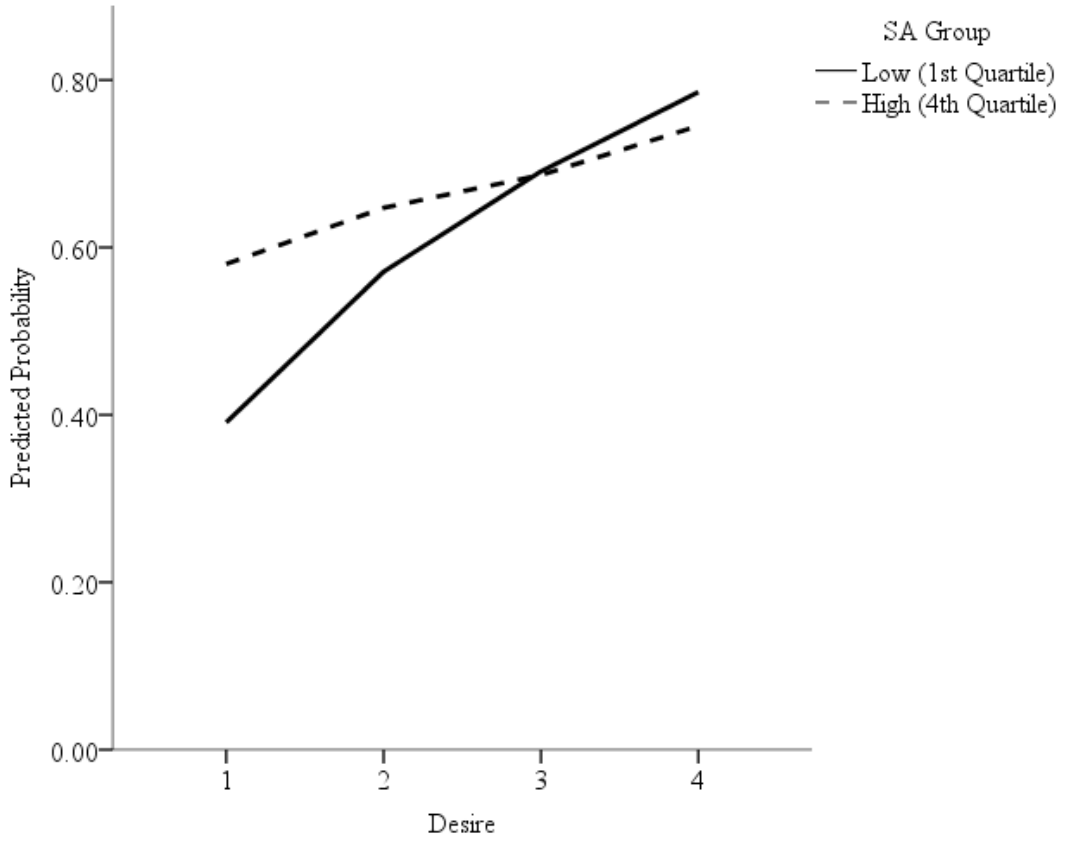


Figure 4.6: This figure displays the cross-level interaction effect between Sexual Acquiescence Beliefs (SAF) and Desire on the probability of reporting UIAI

URAI model. The URAI model also included 479 Latino MSM in level-2 (three participants did not have sufficient data to be included in the modeling) and 1,971 sexual encounters in level-1 (287 encounters did not have sufficient data to be included in the modeling). As with UIAI, the null model was analyzed first (i.e., $\eta = \gamma_{00} + u_0 + R$). The URAI null model yielded τ_{00} = .02 and σ^2 = .15. The ICC is therefore ρ = .02 / (.02 + .15) = .12. This indicates that approximately 12% of the variance in η (i.e., the log odds of reporting URAI) is at the person-level, suggesting that the remaining 88% is at the encounter-level. The results of the full URAI HGLM model are presented in Table 4.5; a graphical presentation of the significant UIAI effects is available in Figure 4.7.

Table 4.5
Results of the URAI HGLM Modeling

Fixed Effects	Coefficient	Standard Error	Odds Ratio	95% CI
Intercept (β_{00})				
Intercept (γ_{00})	-3.279	.22	.04**	[.03, .06]
REF (γ_{01})	-.385	.26	.68	[.41, 1.14]
SAF (γ_{02})	.789	.26	2.20**	[1.32, 3.67]
Closeness Slope (β_{10})				
Intercept (γ_{10})	.327	.04	1.39**	[1.27, 1.51]
REF (γ_{11})	.049	.06	1.05	[.94, 1.18]
SAF (γ_{12})	-.114	.05	.89*	[.80, .99]
Desire Slope (β_{20})				
Intercept (γ_{20})	.304	.06	1.36**	[1.20, 1.53]
REF (γ_{21})	.033	.08	1.03	[.87, 1.22]
SAF (γ_{22})	-.087	.08	.92	[.79, 1.07]
Random Effects	Variance			
Intercept (u_0)	.74			
Closeness Slope (u_1)	.19			
Desire Slope (u_2)	.13			

Notes: REF = Romantic Exigency Factor; SAF = Sexual Acquiescence Factor; * = p < .05; ** = p < .01

RQ2. The URAI model, presented in Table 4.5, indicates that Romantic

Exigency Beliefs is not significantly associated with the reporting URAI during a sexual encounter (p = .14), failing to reject the null hypothesis for H_4. The URAI modeling found a significant direct effect of Sexual Acquiescence Beliefs onto the reporting of URAI (t-ratio = 3.03, p = .003), with higher than average endorsement of SAF positively correlating with the log odds of URAI. The null hypothesis for H_5 can be rejected.

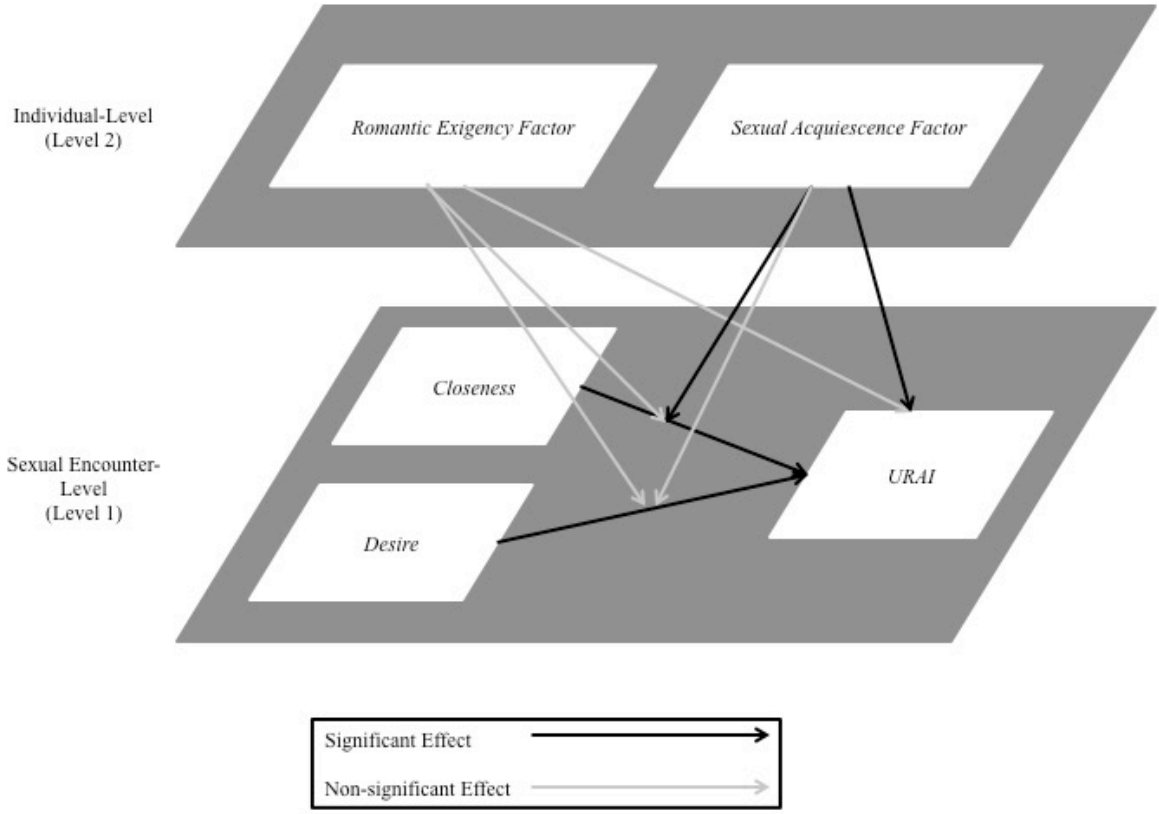


Figure 4.7: This figure displays the significant effects found in the hierarchical generalized linear model used to test for predictors of URAI.

RQ3. The URAI model, presented in Table 4.5 above, indicates that both closeness (t-ratio = 7.47, $p < .001$) and sexual desire (t-ratio = 4.84, $p < .001$) are significantly positively associated with reporting URAI during a sexual encounter.

Increasing levels of relationship closeness and sexual desire in a sexual encounter are both associated with increased log odds of URAI. These results indicate that the null hypotheses for H_8 and H_9 can be rejected.

RQ4. The URAI model indicates that scores on the Sexual Acquiescence Beliefs scale have a significant negative cross-level interaction with closeness (*t*-ratio = -2.16, *p* = .03). Participants with higher than average endorsement of SAF experience a less steeply sloped relationship between closeness and the log odds of URAI; that is to say that closeness becomes less necessary in predicting URAI for individuals scoring highly on the SAF scale. This moderating effect is presented in Figure 4.8. As with Figure 4.6, the low and high SAF groups represent participants who scored in the first and fourth quartiles respectively. These results suggest that the null hypotheses for H_{13} can be rejected while the null hypotheses for H_{12}, H_{16}, and H_{17} fail to be rejected.

Summary

The results of the present analysis provided support for rejecting 7 of the 17 of the null hypotheses tested. The hypothesized number of factors in the LSBS (i.e., three) was incorrect, as RQ1 produced a two-factor model. These factors are Romantic Exigency Beliefs (mean loading = .627, Cronbach's α = .80) and Sexual Acquiescence Beliefs (mean loading = .574, Cronbach's α = .78). These factors were then entered into level-2 of the HGLM modeling. In the UIAI model, both closeness and desire were significantly associated with the log odds of reporting UIAI during a sexual encounter. Additionally, a significant negative cross-level interaction between Sexual Acquiescence Beliefs and desire was found. In the URAI modeling, Sexual Acquiescence Beliefs, closeness, and desire all were shown to have significant direct effects on the log odds of reporting

URAI. Additionally, modeling showed that Sexual Acquiescence Beliefs has a significant negative moderating effect on closeness. The implications of these findings are presented in the following chapter, Chapter 5.

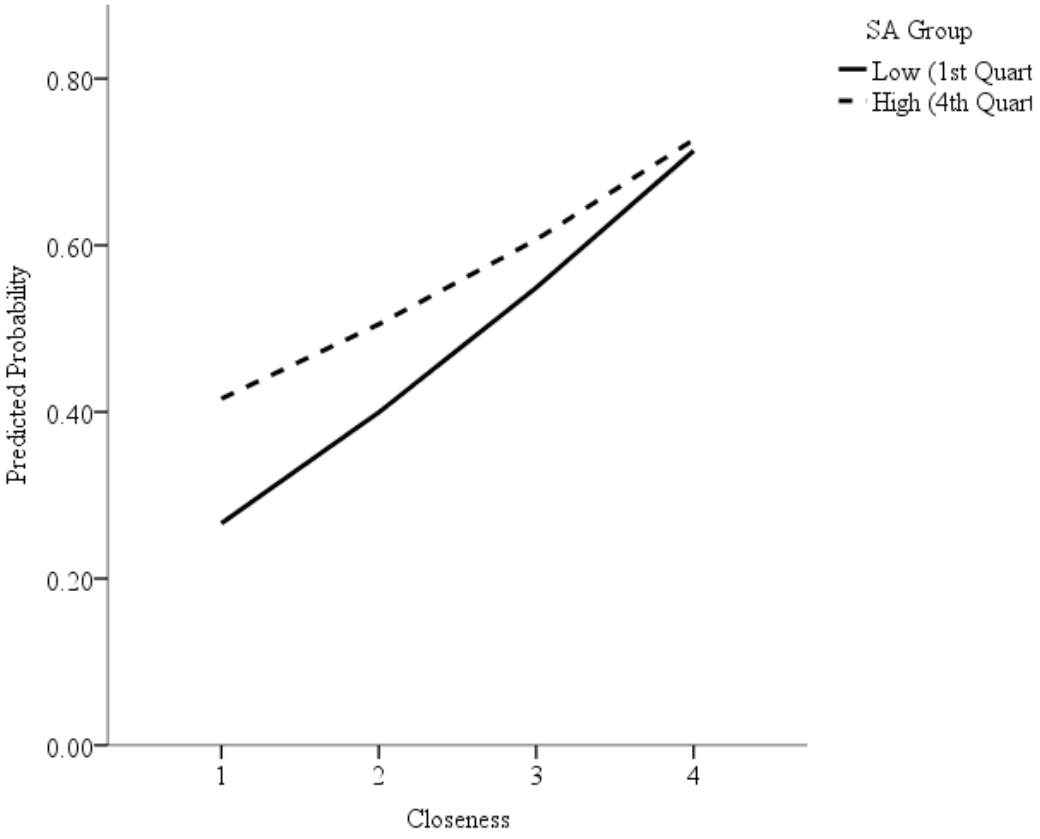


Figure 4.8: This figure displays the cross-level interaction effect between Sexual Acquiescence Beliefs (SAF) and Closeness on the probability of reporting URAI

Chapter 5: Discussion

The preceding chapters provided the background information, theoretical framework, methodology, and results of the present analysis. The goal of this study was to explore the interactions that may exist between the personal characteristics associated with Latino sexual beliefs and encounter-level predictors of condom use during anal intercourse. Additionally, this study investigated the two sex roles involved separately (i.e., insertive and receptive). As stated in Chapter 4, the results of the analysis supported seven of the hypotheses. This chapter, Chapter 5, will present the interpretation of these findings, address the implications for counseling practice via a proposed HIV-prevention counseling intervention for Latino MSM, provide considerations for future research, and state the limitations of the present study.

Discussion and Interpretation

Hypothesis 1. It was hypothesized that the LSBS would yield three psychometrically sound factors. From the analysis, a two-factor model of the LSBS was identified. These two factors, based on the most salient shared themes within the items, were labeled as the Romantic Exigency Factor (REF) and Sexual Acquiescence Factor (SAF). The phenomenological commonality between these factors and the use of oblique rotation was supported by the statistically significant correlation found between the two factors. The analysis suggests that the REF and SAF are potentially sound Latino cultural sexual beliefs as measured by the LSBS.

These two factors are also supported by existing literature. For example, they share the same qualities as those presented by Calabrese et al. (2006) and Diaz and Ayala (1999). Diaz and Ayala (1999), upon which Calabrese et al. (2006) based their

development of the LSBS, posited that Latino cultural sexual beliefs relating to condom use to include 1) loss of control, 2) love and intimacy, and 3) fatalism, resignation, and rebellion. These three themes juxtaposed the two factors identified in the current analysis suggest that there may some notable overlap, again calling attention to the shared variance discussed above. Regarding the non-overlapping qualities, Diaz and Ayala's (1999) construct of "Love and Intimacy" appears to clearly align with REF while "Fatalism, Resignation, and Rebellion" appears to be congruent to SAF. The overlap emerges when considering Diaz and Ayala's (1999) construct of "Loss of Control." This theme appears to be broadly present in both REF and SAF, suggesting that the loss of sexual control expressed by the men in Diaz and Ayala (1999) may have varying etiologies. In fact, Diaz and Ayala suggest as much, noting three possible routes of losing control: 1) from high sexual arousal, 2) from the influence of alcohol and/or drugs and situations, 3) to more powerful partners. Though the LSBS does not mention alcohol or drug use, both of the first two routes suggest losing control of one's self, aligning with the exigency component identified in factor one of the present study. However, route three suggests a loss of sexual control to another person, aligning with the acquiescence captured in SAF. This overlapping relationship between Diaz and Ayala's (1999) construct of "Loss of Control," REF, and SAF is presented in Figure 5.1 below. The results of hypothesis 1 suggest that conceptualizing the factors (and their constituent themes) in this way can aid in later development of meaningful and culturally congruent counseling interventions. Interpretation of the factors' phenomenological formation is presented below.

The REF – containing beliefs related to romanticism, urgency, and passion – was

identified as a possible component within Latino cultural sexual norms. The primacy of romance and monogamy within Latino culture, including among MSM, is documented in the literature (Abalos, 2002; Bianch et al., 2010; Diaz, 1998; Nardi, 2000). The affinity for love, passion, and romance within relationships is heavily socially constructed (see De la Mora, 2009; Reich, 2004). Organista (2012) stated that, because some Latino MSM who follow such cultural scripts may assume that other Latino men do as well, these beliefs may potentiate risky sexual encounters (e.g., UAI). Additionally, regarding the nature of exigency, Diaz (1998) noted that self-regulation of sexual behavior could be perceived as "un-Latino" (p. 61). Because these beliefs were not identified as being directly or indirectly associated with condom use in either the insertive or receptive roles and are therefore not considered to be an efficient construct through which to reduce UAI, they are not included below for direct incorporation into an HIV-prevention counseling intervention. However, the results of Hypothesis 1, congruent with the Multicultural Counseling Competencies (see AMCD, 1996), suggest that counselors be aware of the salient role of these beliefs within Latino culture as they provide counseling services.

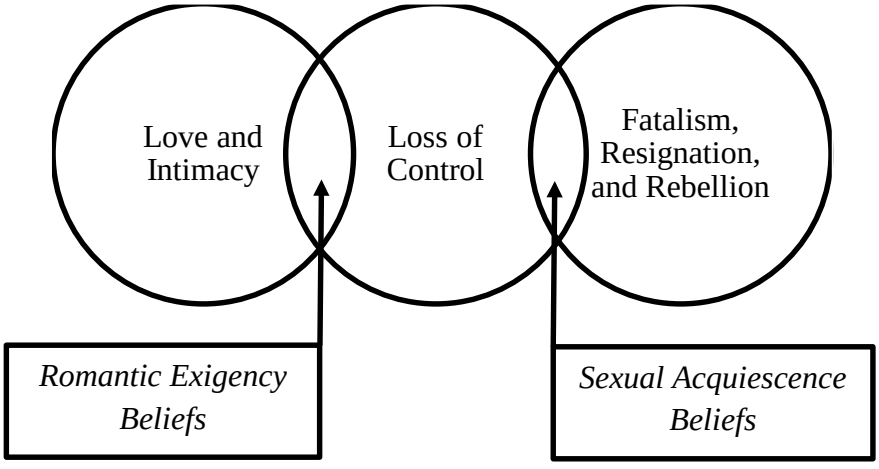


Figure 5.1: This figure displays the proposed phenomenological overlap between the

three Latino cultural sexual beliefs identified by Diaz and Ayala (1999; presented in the circles) and the two factors identified in the present analysis (presented in italic text in the boxes)

The SAF – and the constituent beliefs relating to passivity and resignation – is also supported in the literature as associated with Latino cultural norms. Regarding acquiescence to another person, as Zea, Reisen, and Díaz (2003b) reported, Latino gay men conceptualize sexual encounters on an active – passive axis; this can sometimes be conflated with gender, with those in the passive role not being considered men. Diaz (1998) noted that this perception of sex roles is heavily influenced by conceptualizations of masculinity. Additionally, Latino men in the passive role often defer sexual decision-making to the active partner (Organista, 2012). This ostensibly serves as self-revocation of one's sexual agency. Zeglin (2015) rerpoted the same pattern of behavior among MSM, suggesting that masculine norms and masculinity are involved in sex role positioning and in sexual decision-making, with the more masculine partner in the active and decision-making role. Results reported by Diaz and Ayala (1999) exemplify the saliency of this cultural script; they stated that, among Latino MSM, the "loss of control is presented as true, as the norm, as the way things are" (p. 283). This passivity, as shown in the present factor analysis, extends into a fatalism surrounding sexuality (Diaz & Ayala, 1999). Some suggest that this fatalism is a result of a heavy religious influence on Latino culture, catalyzing and maintaining an external locus of control (Diaz & Ayala, 1999; McCabe, Goehring, Yeh, & Lau, 2008; Moreno, 2012; Rhodes, Hergenrather, Wilkin, Alegría-Ortega, & Montaño, 2006b). Considering that the SAF was identified as indirectly associated with UIAI and both directly and indirectly associated with URAI, these cultural normative beliefs are presented below as necessary to include in HIV-

prevention counseling interventions with Latino MSM.

Descriptive statistics. Though not the target of the present analysis, and though conducted with disaggregated data, some of the significant results found in the descriptive statistics warrant brief discussion. First, the two newly identified LSBS factors were significantly positively correlated. This calls attention to the probable existence of a common underlying variable. Considering the growing literature-base regarding the influence of acculturation on behavior, Latino acculturation appears to be a viable candidate and has been shown to be associated with UAI (Organista, 2012; Poppen et al., 2004; Warren et al., 2008). This significant correlation between REF and SAF, and the hypothesized underlying influence of Latino acculturation, does suggest that HIV-prevention counseling interventions targeting this population would benefit from some attention on the topic.

Second, the reported relationship closeness and the level of Sexual Acquiescence Beliefs were significantly negatively correlated. This suggests that, as the level of closeness increases within sexual-encounters, the endorsement of SAF decreases. Considering the composition of the SAF, this could be interpreted to mean that sexual encounters with greater relationship closeness contain greater egalitarianism; this interpretation is supported in the literature (Abalos, 2002; Castaneda, 2000; Herdt, 1997; Rust, 2000). Abalos (2002), in a comprehensive book detailing the lived sexualities of Latino men, said of Latino males that "when we are intent on mutual sexual relationships…we do not lose ourselves" (p. 39). For this reason, it is important to note this theme of mutuality in HIV-prevention counseling interventions if said interventions are to be culturally appropriate. Later discussion can and will better elucidate the

mechanism by which to most efficiently do so.

Third, self-reported sexual desire was significantly positively correlated with REF scores. As sexual desire within sexual encounters increases, so too does the individual's level of REF endorsement. Though not a relationship that was present in the present study's hypotheses, these results are unsurprising. Considering the composition of the REF, it appears that this association could be largely attributable to the "loss of control" items discussed above (e.g., "Men have little control over their sexual impulses;" see Diaz & Ayala, 1999). In the discussion of the results of the factor analysis above, the salient role of passion and romance in the Latino culture was prioritized with respect to the REF. This theme appears to also present in the correlation between sexual desire and REF-related beliefs. Though the REF was not independently significant in any of the tests, the relationship with sexual desire, which was significant in all tests, suggests that their shared themes (e.g., loss of control of one's self) should be included in HIV-prevention counseling interventions for Latino MSM.

Fourth, the amount of reported sexual desire and the amount of reported relationship closeness were significantly positively correlated. Sexual encounters with higher reported relationship closeness also had higher levels of sexual desire. Considering all of the aforementioned literature supporting a strong connection between love, fervor, and sexuality for Latino males (see Bianch et al., 2010; De la Mora, 2009; Reich, 2004), the significant correlation between closeness and desire was not unforeseeable. This relationship may be what Calabrese et al. (2006) identified as "Hypersexuality" in their original factor analysis of the LSBS. However, this relationship may be more appropriately conceptualized has a passionate sexuality, similar

to that discussed by Van Sevenant (2005) wherein even the most loving sexual encounters have a nexus of libidinal urgency. This presentation of sexuality should therefore be highlighted in HIV-prevention counseling interventions for Latino MSM.

Finally, all of the significant mean differences identified (and presented in Table 4.3) between the UAI and non-UAI groups were in the expected directions and align completely with the findings of the HGLM modeling. However, these mean differences were computed using disaggregated data and were not adjusted (i.e., no controlling for the presence of the other variables). As such, appropriate discussion of these differences within the context of the proper HGLM modeling is found below.

Null models. The null models in HGLM analysis reveal the proportion of variance explained at each of the levels. The present analysis showed that approximately 13% and 12% of the variance in reporting UIAI and URAI respectively was at the person-level. Consequently, a significant portion of the variance is explained at the encounter-level, approximately 87.5%. This is congruent with the findings reported in Zea et al. (2009), wherein they found that approximately 10% of the variance in reporting any type of UAI (i.e., either UIAI or URAI) was at the person-level, leaving 90% at the encounter-level. Similar levels were also reported by Mustanski et al. (2011), with 29% of variance in UAI accounted for at the person-level. This somewhat notably higher quantity, however, may be from the study's investigation of primary relationships only; the present analysis (and Zea et al., 2009) included sexual encounters with both causal and long-term partners. This higher proportion of variance in UAI accredited to personal characteristics within primary relationships is unsurprising, as personal characteristics historically play a stronger role in long-term partner selection (Regan, Medina, & Joshi,

2001; Varangis, Lanzieri, Hildebrandt, & Feldman, 2012).

This is important information to consider in the development of HIV-prevention interventions. This suggests rather strongly that interventions targeting only personal characteristics, and perhaps altering those characteristics, may be disappointingly fruitless. Alternatively, as Zea et al. (2009) noted, interventions should target the interplay between personal characteristics and environmental context. The results of the present analysis support this assertion, suggesting that interventions should aim not at changing characteristics but rather at their deployment during sexual encounters. Aligning with this, any such intervention would benefit from grounding in a theory that encapsulates the interaction between these two levels. Social cognitive theory (Bandura, 1986) is able to do this. Kooyman (2008), in one of rather few sources to expressly mention the role of professional counseling in HIV-prevention efforts, makes special mention of social cognitive theory. Additionally, Albarracín et al. (2005) reported strong support for social cognitive theory as a theory-base for HIV-prevention counseling interventions. Informed by the results of the null models, social cognitive theory will therefore serve as the foundation upon which the proposed intervention will stand.

Hypothesis 5. The HGLM analysis supported the hypothesis that Sexual Acquiescence Beliefs increase the odds of reporting URAI; results show that each point greater than average on the SAF doubles the odds of reporting URAI. This means that men who endorse higher than average SAF are more likely to report having engaged in URAI. Higher SAF scores, aligning with the factor analysis, seem to indicate stronger beliefs that passivity within sexual encounters is a normative experience for Latino men. This, as Diaz and Ayala (1999) suggested, may be a function of the navigation of power

dynamics within a sexual encounter. They noted that "in situations of unequal power-due to better looks, more resources, better access, etc.-the less powerful partner has little control" (p. 283). Power has also been associated with the condom use decision-making roles between MSM within a sexual encounter, with the more powerful partner having the decision-making role (Fields et al., 2012; Kobrak, Ponce, & Zielony, 2015; Miner, Peterson, Welles, Jacoby, & Rosser, 2009; Zeglin, 2015). When considering this information in the aggregate, men who believe that less powerful partners within a sexual dyad should be passive may also then defer the condom use decision-making authority. The present analysis seems to support this unique vulnerability for men who endorse SAF-related beliefs. This theme is presented most saliently when Kobrak, Ponce, and Zielony (2015) noted that, in their sample of 30 young MSM in New York City, men with limited social power, "for whom having sex could represent an economic opportunity or means to residential stability, and receptive partners in anal sex, who may be more dependent on others' sexual norms and have less control over condom use" (p. 2050). Because the present analysis indicated a direct effect of SAF onto URAI, the applied themes of power, control, and condom use decision-making roles should be highlighted within HIV-prevention counseling interventions for Latino MSM.

Hypotheses 6 and 8. Hypotheses 6 and 8 both posited that relationship closeness would predict increased odds of reporting UIAI and URAI respectively; both hypotheses were supported in the current analysis. These findings are congruent with the sizable body of literature that has found a correlation between closeness and UAI among MSM (Carballo-Diéguez et al., 1997; Hensel et al., 2012; Hoff et al., 2012; Mustanski et al., 2011; Zea et al., 2009). This association has been identified among heterosexual couples

as well. For example, Brady, Tschann, Ellen, and Flores (2009) found that, among Latino youths, greater amounts of reported trust in one's partner and the length of the relationship were both associated with decreased condom use. This suggests that the association between relationship closeness and unprotected sex is more general than merely existing within the MSM community and their sexual encounters. Therefore, it is important to understand the role of closeness in condom use decision-making and to include such in HIV-prevention interventions.

The association between closeness and UAI is possibly related to love and intimacy. For example, Diaz and Ayala (1999) poignantly stated that condoms can "conspire against feelings of intimacy and closeness" (p. 285). Additional results by Golub, Starks, Payton, and Parsons (2012) show that higher intimacy interference beliefs (i.e., beliefs that condoms signify lack of trust, love, or commitment) are associated with UAI among MSM; Latino men in their sample evidenced the highest self-reported intimacy interference beliefs. Similar results are frequently found in the HIV-prevention literature (Abalos, 2002; Frost, Stirratt, & Ouellette, 2008; Greene, Andrews, Kuper, & Mustanski, 2014). Though a helpful barrier to prevent HIV, condoms are also perceived by Latino MSM as barriers to interpersonal connection, love, trust, and intimacy. The saliency of love and trust in the literature suggests that this theme is of considerable importance within condom use decision-making. Flowers, Smith, Sheeran, and Beail (1997) provides a summary of this theme's significance, noting that, in their sample of 21 MSM, "men often privileged the expression of commitment, trust and love as more important than their own health" (p. 73). Congruent with this, and as indicated by the present analysis as well as past research, research-based HIV-prevention counseling

intervention curriculums targeting Latino MSM would include the topics of love, commitment, and trust.

Hypotheses 7 and 9. Hypotheses 7 and 9 both addressed sexual desire and increased odds of reporting UIAI and URAI respectively; both hypotheses were supported in the current analysis. These findings are congruent with the growing literature-base investigating the association between sexual desire/arousal and UAI (Golub et al., 2010; Wilson et al., 2009; Zea et al., 2009). Diaz and Ayala (1999) noted that this sentiment is expressed as a feeling of losing control of one's self; this theme was discussed above as it related to the significant correlation between REF and sexual desire. Zea et al. (2009) goes as far as to consider sexual desire and arousal as "real-life triggers" for UAI (p. 712). This conceptualization highlights the acuteness of the effect of sexual arousal on sexual decision-making. For example, Ariely and Loewenstein (2006) reported that sexually aroused men indicated a higher willingness than non-aroused counterparts to engage in many risky sexual behaviors including unprotected sex. They concluded that arousal serves as an intention amplifier for already preferred behaviors rather than as a catalyst for new behaviors (i.e., if unprotected sex is already preferred, it will become even more so when aroused). Shuper and Fisher (2008) reported similar results in their sample of MSM, with aroused men indicating significantly higher intentions than non-aroused men to engage in UAI; the reported $\eta^2 = .12$, suggesting that the practical significance of sexual arousal's influence on UAI is not trivial. Ariely and Loewenstein (2006) discussed the importance of the context in the effect of arousal on sexual decision-making, noting that there is greater intra-individual differences between aroused and non-aroused states than there are inter-individual differences between

aroused and non-aroused individuals. That is to say, though it may go without saying, that it would be of little benefit to try decreasing an individual's average level of arousal, but rather in strengthen their self-insight into how arousal impacts their decision-making. For this reason, and congruent with the findings of the present analysis, it is important that HIV-prevention interventions include "strategies for negotiating safer sex when physically aroused" (Seal et al., 2000, p. 11).

Hypothesis 13. Hypothesis 13 suggested that SAF would moderate the effect of closeness on URAI. The present analysis supported this hypothesis. The ordinal interaction displayed in Figure 4.8 suggests that individuals with high SAF endorsement are at increased chance of URAI, regardless of the relationship closeness present within a sexual encounter. This also suggests that interventions targeting only themes related to relationship closeness would have less effect on the condom use behavior of high SAF men. Moreover, this interaction clearly displays the strong role of relationship closeness in predicting URAI, with both high and low SAF men at relatively similar probabilities of reporting URAI. Aligning with this, effective HIV-prevention counseling interventions ought to consider the interaction between SAF and closeness. With lower scores on the SAF correlating to comparatively lower URAI rates in sexual encounters with lower closeness, it seems that this point could be considered the "target rate" of URAI. The goal of interventions designed to address the interaction between closeness and SAF would, it seems, have two objectives in attempts to reduce URAI to the "target rate": 1) Level the average probability of URAI across all closeness levels and 2) Close the gap between high SAF and low SAF men in low closeness encounters. The first objective can be achieved through interventions targeting love, intimacy, and trust as discussed

above. To achieve the second objective, however, counseling interventions will need to address the catalyst driving the interaction effect.

The SAF is representative of the belief that some amount of passivity within a sexual encounter is normative for Latino MSM. Also, congruent with research highlighting the importance of not underestimating the different experiences between sex roles (e.g., Shuper & Fisher, 2008; Zeglin, 2015), the uniqueness of this interaction to the receptive partner is important to consider. For example, the concept of passivity is also present in discussions of the receptive role (Abalos, 2002; Diaz, 1998; Zeglin, 2015). Latino MSM conceptualize the insertive and receptive sex roles in such language, referring to them as "activo" (active) and "pasivo" (passive) respectively (Jeffries, 2009; Thing, 2010; Zea et al., 2003b). Therefore, Latino men who have strong SAF-related beliefs and are the receptive partner may be experiencing a confluence of norms (i.e., personal beliefs and sex role expectations) that multiplicatively potentiate their passivity in the sexual encounter. This passivity seems antithetical to the initiative necessary to encourage and/or demand condoms be used during a sexual encounter, as some agency is required to facilitate condom use (Jeffries, 2009; Organista, 2012; Thing, 2010). Organista (2012) discussed the high level of presumptiveness present within sexual encounters (particularly ones with limited relationship closeness), with each partner assuming that the other is following the same cultural scripts. Organista provides the example of a passive (receptive) partner assuming that the active (insertive) partner's decision to wear a condom or not is rooted in a Latino cultural norm of collective responsibility. This tacit miscommunication appears to be a viable explanation for the increased risk of URAI reported by high SAF men within encounters with low closeness;

their personal SAF-related beliefs teamed with the passive norms associated with the receptive role simply do not promote personal responsibility for safe sex. As such and to achieve the second objective outlined above, HIV-prevention counseling interventions should consider including a measure of SAF-related beliefs (perhaps the LSBS) and highlighting the role of communication and personal responsibility for individuals with high SAF endorsement.

Hypothesis 15. Hypothesis 15 suggested that SAF would moderate the effect of sexual desire on UIAI. The present analysis supported this hypothesis. The disordinal interaction displayed in Figure 4.6 above suggests that individuals with high SAF endorsement show increased odds of UIAI, regardless of the sexual desire present within a sexual encounter. As with discussion of hypothesis 13 above, this also suggests that interventions targeting only themes related to sexual desire would have limited effect on the condom use behavior of high SAF men. Therefore, effective HIV-prevention counseling interventions ought to consider the interaction between SAF and sexual desire. With low SAF men showing comparatively lower UIAI rates in sexual encounters with low desire, it seems that this point could be considered the "target rate" of UIAI. The goal of interventions designed to address the interaction between desire and SAF would have the same two objectives as above in attempts to reduce UIAI to the "target rate": 1) Level the average probability of UIAI across all levels of sexual desire and 2) Close the gap between high SAF and low SAF men in low desire encounters. The first objective can be achieved through interventions targeting sexual decision-making in high arousal states. To achieve the second objective, counseling interventions need to target the interaction effect between SAF and sexual desire.

A significant body of literature has shown that the insertive (or active) partner is responsible for condom use decision-making (Fields et al., 2012; Kobrak et al., 2015; Miner et al., 2009; Organista, 2012; Zeglin, 2015). Applying the theme of cultural presumption presented by Organista (2012) wherein Latino men may believe that their Latino sexual partners are following the same cultural scripts, men in the insertive role may assume that their receptive partner is following the same cultural script. The insertive partner may therefore recognize the active agentic role they fulfill in the encounter, taking responsibility for condom use decision-making. This suggests that the rate of UIAI reported by the participant is most attributable to the participant's own decision-making. By extension, a significant portion of the variance in the rate of UIAI reported by men in the current sample would likely be attributable to differences between men in their decision-making. The present analysis suggests that one such difference lies at the intersection of SAF and sexual desire. The insertive partner, in addition to holding the responsibility for condom use, is responsible for gaining and maintaining the erection necessary for intercourse (Cove & Petrak, 2004). Low desire and low arousal states may frustrate the achievement of an erection sufficient for intercourse and/or condom application, resulting in some level of erectile dysfunction (ED). Congruent with this, research has shown that difficulty with erectile tumescence is associated with lower rates of condom use among MSM (Adam, Husbands, Murray, & Maxwell, 2005; Cove & Petrak, 2004). The present analysis suggests that this effect differs significantly between low and high SAF men. High SAF men, endorsing beliefs associated with the immutability of sex and in some inherent passivity within a sexual dyad, may be more easily thwarted than their low SAF counterparts in attempts to (re)gain an erection in low

desire contexts. Findings by Cove and Petrak (2004) hint at such a phenomenon, noting that "men experiencing ED when trying to use condoms may attempt to resolve it by abandoning condom use" (p. 736). Congruent with this hypothesis and to achieve the second objective, HIV-prevention counseling interventions for Latino MSM should assess clients' SAF beliefs and offer frustration coping skills, self-awareness enhancing techniques, and sexual functioning education to all clients but perhaps particularly to higher SAF men.

Implications for Theory

Reflecting on the constructs identified for inclusion in a proposed HIV-prevention counseling intervention for Latino MSM, it seems quite clear that sexuality (broadly speaking) is prominent to condom use decision-making. Robinson, Bockting, Rosser, Miner, and Coleman (2002) supported this assertion, calling for sexological models "promoting sexual health that can be applied to HIV prevention" (p. 45). The concept of holistic sexuality, presented as a theory explaining the full conceptualization of an individual's sexual presence and energy (Dailey, 1981; Zeglin & Mitchell, 2014), could be a valuable addition to existing HIV-prevention strategies. None of the current CDC Good or Best Practices (CDC, 2015d) include a module on the participant's conceptualization of their sexuality (save for some that cover topics relating to masculinity). The present analysis suggests that this may be hindering the full effectiveness of HIV-prevention interventions, particularly perhaps with interventions designed for Latino MSM. This calls attention to the need for an expanded application for sexological theory, via its attention to unique sexuality-related experiences and phenomena (e.g., intimacy, sensuality, sexual identitiy), to understanding HIV risk

behavior. Such an expansion aligns with holistic sexuality, conceptualizing sexuality as the dynamic aggregate of an individual's sexual identity, desire of intimacy and sensuality, sexual health, and sexual behaviors (Dailey, 1981; Gochros 1972, 1974; Robinson et al, 2002; Zeglin & Mitchell, 2014). Such an approach, at the very least, seems prudent in work with Latino MSM, as Diaz (1998) advocates for firmly basing HIV-prevention counseling interventions in the sexualities of Latino MSM. The present study, and the resulting proposed intervention below, highlights the potential of the understudied roles of sexological theory and of holistic sexuality within HIV-prevention behavioral interventions.

Implications for Practice

Developing an intervention. The results of the study support the development of an HIV-prevention counseling intervention for Latino MSM to reduce the rate of UAI. However, because of the complexity of the HGLM results – and therefore of their constituent considerations – such an intervention and the included modules should first be carefully organized around the supporting evidence. To advance this, a logic model is presented in Figure 5.2 that outlines the rationale for the specific modules to be included in the eventual counseling intervention. A logic model aids programs in planning the use of resources, their relation to activities, and the expected outputs (Wholey, Hatry, & Newcomer, 2010). It includes: 1) Inputs, 2) Activities, 3) Outputs, and 4) Outcomes (McLaughlin & Jordan, 2004; W. K. Kellogg Foundation, 2001). The present discussion applies this model to the current results, conceptualizing Inputs as "Significant Results," Activities as "Themes," Outputs as "Modules," and Outcomes as "Therapeutic Benefits."

The logic model presents 11 separate "modules." These are conceptualized as

clinical topics necessary for inclusion in a proposed counseling intervention. Rhodes et al. (2006a) provided the framework in using this logic model to identify precise learning objectives for each module. Additionally, since the present study sought to base the proposed intervention within social cognitive theory, Rhodes et al. (2010a), O'Donnell et al. (2014), and Kooyman (2008) were used to provide a model for structuring modules within social cognitive theory. In the aggregate, this produces a series of clinical objectives within each module and associated mechanisms by which to achieve said objectives. These are presented in Table 5.1 and are briefly discussed below. Of note, the proposed intervention is broadly structured to be easily adaptable for either group or individual modalities.

Modules for Inclusion. The below described modules will include themes of love, communication, sensuality, masculinity, and desire. These themes are also highlighted in holistic sexuality literature (Corinna, 2014; Gochros 1972, 1974; Robinson et al., 2002; Zeglin & Mitchell, 2014). As such, it seems appropriate (if not incumbent) to promote this concept in the development of the proposed intervention. Therefore, the proposed intervention can presently be named the "Thinking Holistically about My Sexual Risk" intervention. It is important to note that this is a fundamental proposition for important themes to be included in a counseling intervention; as discussed in more detail below, numerous and significant validation work remains to be done before the intervention is truly viable.

Administration of LSBS. The use of the LSBS at the outset of counseling is supported by several of the study's findings. First, the LSBS appears to contain psychometrically sound constructs. Also, both REF and SAF were correlated with other

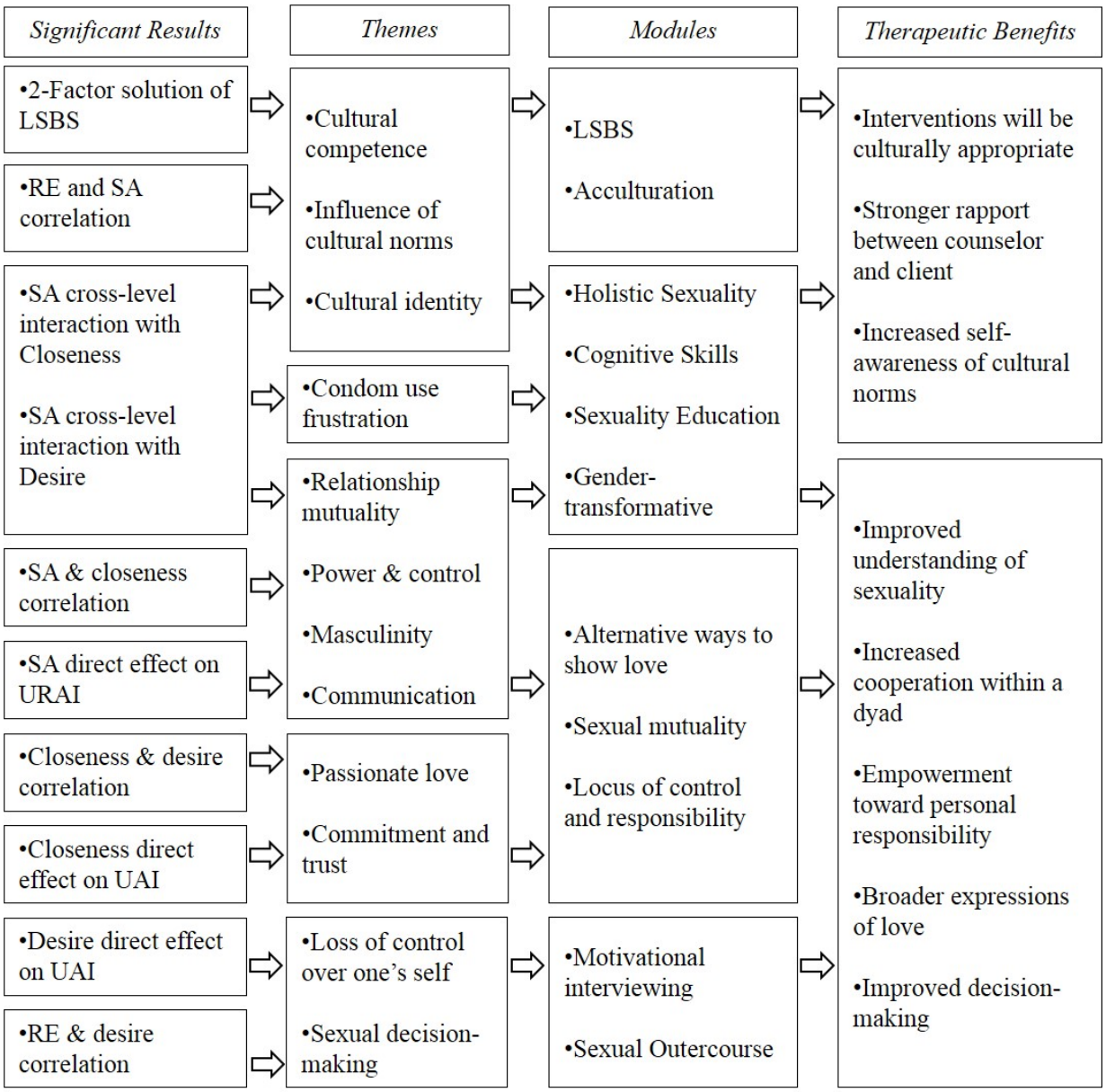


Figure 5.2: This figure displays the logic model used to support the creation of the proposed HIV-prevention counseling intervention

constructs within the study including relationship closeness and sexual desire. By administering the LSBS, counselors will be better informed regarding their clients' level of Latino Sexual Cultural belief endorsement. Counselors can facilitate frank discussion about the scores and the clients' own reflection thereon. Additionally, this helps the counselor to gain important insight into the client's cultural identity, enhancing their

ability to work from a culturally competent base. This is congruent with existing counseling best practices regarding the use of assessments and subsequent discussion and exploration (ACA, 2014; Association for Assessment in Counseling, 2003); this standard practice can often lead to fruitful and therapeutically beneficial self-reflection. Counselors might also consider, aligning with social cognitive theory, asking clients to reflect on situations where their answers or scores might seem as though they'd differ.

Acculturation. The current study found that the REF and SAF were correlated, indicating a shared constituent construct. Extant research suggests that one's level of acculturation could account for the strength of one's beliefs as measured by the LSBS. The role of acculturation in risky sexual behavior has been very well documented in the literature (Organista, 2012; Poppen et al., 2004; Warren et al., 2008; Zea et al., 2009). To support the client's exploration of their own acculturative processes, counselors could consider using validated measures of acculturation (see Zea, Asner-Self, Birman, & Buki, 2003a). As mentioned above, intentional facilitation of clients' reflection on their assessment scores can be beneficial in its own right. Additionally, counselors may also use genograms to highlight the personal and familial process of acculturation as experienced by the client (Estrada, & Haney, 1998; Yznaga, 2008). The benefit of this, again, is to build therapeutic rapport and to strengthen the cultural sensitivity of the counselor.

Holistic sexuality. As the present analysis shows, many of the sexuality-related constructs were significantly related to UAI. This includes SAF, relationship closeness, and sexual desire. Additionally, the current study noted significant correlations between the LSBS constructs and both relationship closeness and sexual desire. Taken together,

Table 5.1

Modules, Objectives, and Sample Activities to be included in "Thinking Holistically about My Sexual Risk"

Module	Learning Objectives	Sample Activities
1) Administration of LSBS	• Obtain LSBS scores • Understand meaning of scores • Be able to put scores in context of one's own life	• Facilitate discussion of LSBS • Identify contexts when scores might "change"
2) Acculturation	• Understand acculturation and the acculturative process • Be able to self-reflect on acculturation in one's own life	• Create genogram • Explore process of acculturation
3) Holistic Sexuality	• Be able to identify the five components of sexuality • Be able to identify how each influences sexual decision-making	• Teach Circles of Sexuality • Identify salient behaviors in each
4) Sexuality Education	• Understand the risks associated with certain sexual activity • Understand the common causes of erectile dysfunction • Self-reflect on one's own experiences of erectile dysfunction	• Demonstration of condom application • Multi-media use to explain erectile dysfunction
5) Gender-transformative Information	• Explore the role of masculinity in one's sexual decision-making • Understand alternative conceptualizations of masculinity	• Identify role-models for masculinity • Identify role-models for Positive Masculinity
6) Sexual Outercourse	• Understand the alternative view of sex as a process • Increase mindfulness surrounding sexual acts	• Teach and practice mindfulness skills • Homework to increase awareness
7) Alternative Ways to Show Love	• Learn the languages of love • Self-reflect on one's own love language	• Teach 5 Languages of Love • Identify salient behaviors of each
8) Sexual Mutuality	• Explore one's own experiences with power and control in sexual encounters • Strengthen communication and self-advocacy skills	• Multi-media use to demonstrate power imbalances • Role-play self-advocacy language
9) Locus of Control & Responsibility	• Understand concept of personal responsibility	• Identify things within one's control and things that are not; explore differences
10) Cognitive Skills	• Learn skills to decrease general frustration as well as during sexual encounters • Learn conflict resolution skills	• Teach and practice coping techniques • Homework to practice these skills
11) Motivational Interviewing	• Identify barriers to implementing new skills • Create plan to overcome said barriers	• Complete SWOT analysis • Role-play potential barriers

this suggests that the sexuality of Latino MSM is extremely informative in their sexual decision-making. Much of the HIV-prevention literature has focused on sexual behaviors rather than on the person's full experience of their sexuality (see Robinson et al., 2002). "Thinking Holistically about My Sexual Risk" posits that sufficient time should be spent educating clients about holistic sexuality. Fundamentally, counselors can accomplish this goal by teaching clients the Circles of Sexuality Model (Dailey, 1981) and by encouraging clients to identify how and when they recognize the constituent components of sexuality in their life and in their behaviors (Zeglin & Mitchell, 2014). As Zeglin and Mitchell (2014) note, "interventions can be developed that highlight and encourage exploration of the interactive components of the circles, while also challenging preconceived deterministic attitudes" (p. 288). This latter question touches on the contextual influences on sexual behavior, again aligning with social cognitive theory.

Sexuality education. The present analysis identified a significant moderating effect of SAF onto the effect of sexual desire. Extant literature suggests that this may be a function of gaps in a person's knowledge of STI risk behavior. The present study therefore supports previous research investigating the role of sexual education in UAI. At a minimum, counselors could use this opportunity to provide medically accurate HIV/AIDS transmission information including risk behaviors, the health effects of HIV/AIDS, the importance of testing, and PrEP and PEP. Additionally, as discussed above, frustration surrounding erectile difficulties may facilitate UAI, particularly UIAI (Adam et al., 2005; Cove & Petrak, 2004). Counselors can help alleviate this frustration by providing direct and specific information related to erectile difficulties, including effective remedies (Buehler, 2013; Davis & Taylor, 2006; Kaplan, 1974). Additionally,

aligning with social cognitive theory and suggestions in Kooyman (2008), counselors may need to provide demonstrations and the opportunity for clients to practice the application and use of condoms. This module is designed to generally provide HIV risk information and to more specifically support clients in the application and proper use of condoms, including how to do so when erectile tumescence may be labile.

Gender-transformative information. Results in the present analysis differed between sex roles; this was particularly salient in the manner in which SAF interacted with the decision-making processes rather differently for URAI and UIAI. As current research indicates, this may be largely attributed to gender roles in general and to masculinity more specifically. Zeglin (2015) outlined the critical role of masculinity in risky sexual behavior among MSM. Similar themes are present in the results of the present analysis. Gender-transformative interventions support clients in challenging their existing conceptualizations of masculinity and in adopting more positive and prosocial conceptualizations (Barker, Ricardo, Nascimento, Olukoya, & Santos, 2010). As Zeglin (2015) noted, "men who are presented with information demonstrating that traditional conceptualizations of masculinity may be harmful and who are provided support and safety in exploring alternative conceptualizations of masculinity are likely to reevaluate and alter their beliefs and behaviors" (p. 1984). Counselors could consider using the Positive Psychology/ Positive Masculinity Model to aid in this reevaluation (PPPM; Englar-Carlson & Kiselica, 2013; Kiselica & Englar-Carlson, 2010). Congruent with social cognitive theory, it might be helpful for counselors to ask clients to identify role-models of both traditional and positive masculinity and to encourage discussion of these models' differences.

Sexual outercourse. The current study found that sexual desire was correlated with REF (i.e., urgent passion within sexual encounters) and was significantly predictive of both UIAI and URAI. As discussed above, these results highlight the urgency present in sexual encounters for Latino MSM. The concept of sexual outercourse, introduced by Van Sevenant (2005), likens such earnestness to "coitus-cide;" essentially, the goal of initiating sexual activity becomes to end it (i.e., to orgasm). With such focus on the end of sexual activity, the process of sexual activity is neglected and condoms are seen as a barrier to achieving such ends. Counselors might consider encouraging clients to (re)connect with the enjoying of the activity itself, including all of the sensations and emotions than accompany it. In doing so, counselors can simultaneously eroticize condoms by stressing the role of condoms as one part of a complex and dynamic sexual encounter rather than as the final hurdle to sexual release (Ariely & Loewenstein, 2006; Hazra, 2006). Counselors can teach mindfulness techniques and provide homework to help client's broaden their experience of sensuality inherent in the sex process; these strategies align with social cognitive theory.

Alternative ways to show love. The salient role of love, affection, and trust in sexual decision-making was supported in the present analysis via the significant results involving relationship closeness and its direct predictive effect of UIAI and URAI. Literature has suggested that UAI is a result of wanting to communicate such intimate feelings (Diaz and Ayala; 1999; Golub, et al., 2012; Greene et al., 2014). "Thinking Holistically about My Sexual Risk" would suggest that counselors aid clients in identifying alternative ways to express these feeling, perhaps (and hopefully) reducing the importance placed on UAI to do so (Flowers et al., 1997). Moreover, Hazra (2006)

noted that wearing condoms could actually be itself considered a sign of love and caring. Counselors could teach clients the "Five Love Languages" (Chapman, 2004) and encourage clients to identify their most comfortable language. Counselors could also support clients in reflecting on contexts wherein their preferred language may change; this strategy highlights the context – personal characteristic interaction presented in social cognitive theory.

Sexual mutuality. The many significant results involving relationship closeness and RAF are notable. For example, and as discussed above, the significant correlation between these two constructs suggests that the role of passivity within a sexual encounter is not unsubstantial. The theme of passivity is also a salient theme in the Latino MSM literature (Diaz, 1998; Diaz & Ayala, 1999). Counselors can work with both receptive and insertive partners to enhance their sense of sexual mutuality. At a minimum, it might be helpful for clients to hear counselors give permission for them to exercise agency in their sexual encounters. As Kooyman (2008) noted, it is safely within a counselor's role to encourage and help clients "negotiate safer sex with potential partners" (pp. 301-302). To do so, counselors can model and provide the safe space for clients to practice assertive (but non aggressive) language to use when advocating for the use of condoms. In a group setting, clients may be able to practice with and receive feedback from peers. Also, counselors might encourage and support clients in exploring their own past experiences with power dynamics. Perhaps clients have been in both the active and passive roles; it may be fruitful for counselors to have clients reflect on their varying experiences in these different roles.

Locus of control and responsibility. The results of the present analysis indicated

that SAF was significantly correlated with REF, relationship closeness, and sexual desire; was indirectly associated with both UIAI and URAI; and was directly associated with URAI. This salient presence of RAF highlights the role of personal agency for each sexual partner. Literature shows that the concept to personal control and responsibility for one's actions is viewed differently in Latino culture (Diaz, 1998; Garza, 1977). The importance of fostering a personal locus of control and responsibility was strongly supported in findings by Wolitski, Flores, O'Leary, Bimbi, & Gomez (2007), wherein MSM with high personal responsibility beliefs showed the lowest HIV transmission risk (regardless of other beliefs) while those with low personal responsibility showed fluctuating risk depending on their levels of partner and/or shared responsibility beliefs (though still in all cases presenting with higher risk than the former group). Counselors can work with clients to identify behaviors and practices that they perceive to be within one's control and those that are not. Congruent with social cognitive theory, counselors can also challenge clients to explore the differences and to discuss contexts within which the lists might be different. As mentioned above, this may include counselors judiciously inquiring about clients' religious background, beliefs, and values (Diaz & Ayala, 1999; McCabe et al., 2008; Moreno, 2012).

Cognitive coping skills. Results of the current analysis show the important role of a person's ability to cope with frustration, either frustration in communication (e.g., SAF's interaction with relationship closeness) or frustration with sexual performance (e.g., SAF's interaction with sexual desire). Therefore, "Thinking Holistically about My Sexual Risk" – a counseling intervention in both spirit and practice – emphasizes the role of cognitive coping skills development in improving decision-making. Research has

shown than enhanced cognitive heuristics facilitate improved decision-making (Donohew et al., 2000; Gutnik, Hakimzada, Yoskowitz, & Patel, 2006; Parker & Fischhoff, 2005). Moreover, the goal of counseling is often inherently to strengthen the frustration coping skills of clients in order to improve their problem-solving and reduce the risk of resorting to easier (and possibly more dangerous) decision-making heuristics (Alexopoulos et al., 2003; ACA, 2015; Gutkin, 1993; Kelly & Murphy, 1992; National Institute of Mental Health, 2015). Counselors – quite directly – can model such cognitive problem-solving in their work with clients. Also, homework can be used to encourage clients to practice cognitive techniques in moments of frustration; reflecting on the contexts in which these skills work more or less well can also be edifying for both the counselor and the client.

Motivational interviewing. The significant correlation between REF and sexual desire underlines the libidinal nature of sexual decision-making. As such, it will be important to incorporate methods of supporting problem-solving in such energized and aroused states. Motivational interviewing, for example, is a counseling technique often used in public health settings to aid clients change behavior. The unique quality of motivational interviewing (MI), is its attention to ambivalence toward change, resistant to change, barriers, and strengths (Miller & Rollnick, 2012; Rubak, Sandbæk, Lauritzen, & Christensen, 2005). Counselors could use a SWOT (i.e., strengths, weaknesses, opportunities, and threats) analysis to aid clients in identifying barriers and supports of their intended behavior change (Orlans & Van Scoyoc, 2008). This includes an evaluation of one's motivation to change; counselors can help clients identify value-congruent motivators for behavior change (Interian, Martinez, Rios, Krejci, & Guarnaccia, 2010; Miller & Rollnick, 2012). Congruent with social cognitive theory,

counselors can role-play the use of strengths to overcome barriers and can encourage clients to practice similar skills outside of counseling.

Counseling Education Policy Implications

The results of the present analysis in general, and the "Thinking Holistically about My Sexual Risk" intervention specifically, note the salient role of sexuality in working with Latino MSM. Though the present analysis targeted HIV-prevention counseling interventions, sexuality-related issues can be present in much of the work of counselors. Sexuality-related topics, including sexual risk, are not foreign to professional counselors, though are often not discussed. Lack of sexuality education/training and discomfort with sexuality-related topics are associated with a clinician's willingness to discuss sexuality with clients (Haboubi & Lincoln, 2003; Hanzlik & Gaubatz, 2012; Juergens, Smedema, & Berven, 2009; Russell, 2012; Southern & Cade, 2011).

The Council for Accreditation of Counseling and Related Educational Programs (CACREP), the accrediting body for counselor education programs, does not require counseling education programs to include sexuality coursework (CACREP, 2009). This absence leaves counselors relatively unprepared to accurately assess sexual risk and to subsequently address sexuality-related themes (Haboubi & Lincoln, 2003; Hanzlik & Gaubatz, 2012). The United States Preventative Services Task Force noted the importance of thorough assessment by clinicians of clients' sexual risk, saying that "systematic, routine assessment is the foundation for proactive behavioral counseling interventions" (p. 278). However, before counselors can competently address sexuality-related issues including risk, they first need proper support, education, and training (Kelly, 1976; Timm, 2009). The present analysis calls attention to the possible need for

prioritizing human sexuality coursework in counselor education programs. Future research could explore the most efficient route by which to accomplish this goal. For example, it could be highly effective for CACREP to require programs to offer a dedicated Human Sexuality course. Alternatively, much like as currently applied to multicultural issues, it could be helpful for CACREP programs to purposefully incorporate sexuality-related material in other courses. This would require the addition of human sexuality content and competencies be added to the CACREP (2009) standards. CACREP (2009) standards already require that counseling students be offered coursework on topics with less ubiquitously prevalent in the population than sexuality (e.g., addictions) and other topics that have a reciprocally influential relationship with sexuality (e.g., human growth and development, family systems). There is room for the purposeful addition of human sexuality content in the training of counselors. Such exposure to the information could support all counselors in conducting thorough risk assessments and could also aid HIV-prevention counselors in competently delivering holistic sexuality-related interventions.

Considerations for Future Research

Validation of themes and intervention. The proposed "Thinking Holistically about My Sexual Risk" counseling intervention is merely a synthesis of themes presenting from the data (see Figure 5.2). Though there is a strong literature-base for each theme, and therefor justification for inclusion in the intervention, there is yet no study of how these constructs may or may not interact with each other to promote safe sex. Considering the stage of development of "Thinking Holistically about My Sexual Risk," future research would address two primary questions: 1) Are the themes culturally

and clinically relevant?; and 2) Does an intervention utilizing these themes produce significant changes in UAI behavior? To answer the first question, researchers could validate each construct using feedback from Latino MSM. Also, additional feedback could be gathered regarding the constructs in the aggregate (i.e., does the intervention make sense as a whole for this population?). An efficient way to assess this would be community-based participatory research (CBPR), relying on the lived experiences of Latino MSM (see Rhodes, Malow, & Jolly, 2010b). The second question, only to be answered after careful and through validation of the included constructs, could be answered through a small-scale pilot effectiveness study. This, then, could support latter randomized controlled trials.

An important consideration in both of the abovementioned research inquires will be that of the influential effect of acculturation. The level of acculturation can influence the extent to which the themes are relevant to the participants and to their lived experiences. Researchers should consider including, within the CBPR methodology, questions regarding the participants' experience with the acculturation process and, more specifically, its impact on their cultural sexual beliefs. Acculturation should also be included in models attempting to validate the proposed intervention. For example, this can be done quantitatively through statistical control or through a systematic stratified sampling technique with proportional allocation where participants are first administered a standardized measure of acculturation (e.g., The Abbreviated Multidimentional Acculturation Scale; Zea et al., 2003a) and then sampled in a manner by which to ensure that all levels of acculturation are represented. The method notwithstanding, researchers should be mindful of the salient role that the acculturation process can have for Latino

men, as well as its role in the intersectional identities of Latino MSM.

Statistical methods. The present analysis did not include any control variables in the HGLM modeling. There may be extraneous variables presently influencing the effects detected in the HGLM modeling. Future studies can more precisely include pertinent controls (e.g., age, primary language, relationship status) to better clarify the effects presented in Chapter 4. Such adjustment could uncover additional constructs to consider or may highlight effects that are confounded by such controls. In either case, the goal can be to strengthen the precision of the proposed intervention by targeting constructs that most directly influence UAI behavior and decision-making.

Curriculum development. Many of the themes included in "Thinking Holistically about My Sexual Risk" have not, until now, been heavily prioritized in HIV-prevention counseling interventions. There have been theoretical attempts to bridge the gap between holistic sexuality and HIV prevention (Robinson et al., 2002), but no applied interventions. The present discussion (see Table 5.1) offered sample activities to use in the delivery of the proposed intervention. These, though, are drawn from the literature unique to each theme and does not, in many instances, have much empirical support for use in an HIV-prevention context. As such, future research could begin to explore the applicability of holistic sexuality theory in HIV prevention, including developing specific evidence-based practices to aid the efficacious completion of each module.

Latino cultural sexual beliefs. The present analysis served as the first psychometric testing of the full 13-item LSBS. Though developed within and applied to the HIV-prevention field, its utility extends far beyond that. This scale could be used within epidemiologic studies across STIs including gonorrhea, syphilis, and Hepatitis C.

Additionally, the LSBS could be used to explore the effects of cultural sexual beliefs on other HIV-related outcomes including disclosure, testing, and serosorting. Future studies can begin to explore the broader applicability of the LSBS, including possible amendment for specific populations.

Limitations

The conclusions drawn in the present analysis should be regarded only with due consideration of the study's limitations. First, as mentioned above, no control variables were included in the analysis an either Level-1 or Level-2. Considering the results of Zea et al. (2009), the influence of potential extraneous variables appears minimal. Nonetheless, this allows for multiple alternative explanations for the results and should be the target of future inquiry.

Second, the 13-item LSBS contains items with varying content. For example, some include the term "Latino men" while others just say "men." Though such a difference is not expected to alter the fact structure, such a possibility cannot be ruled out. Future research, as mentioned above, could offer stronger validation of the LSBS by including the term "Latino men" in all items.

Third, as mentioned in Zea et al. (2009), the measure of sexual encounters is inelegant. Distantly past encounters are vulnerable to memory errors. The present analysis could not and did not account for the length of time since the sexual encounters. For example, some men could have had seven encounters all within the last week while others had seven encounters spread over the previous two years. Future research should consider using longitudinal measures of sexual encounters as they occur, possibly using sex diaries or (perhaps more ideally) on-line surveys to be completed by the client from home without having to meet with researchers.

Fourth, the measures of relationship closeness and sexual desire are both single-item. Though, as mentioned in Chapter 3, there is support for the use of such measures, this limits the predictive variance available for each construct. Future studies, particularly those that may be longitudinal and can afford the inclusion of additional measures, should consider supplementing these single-items measures with more items. For example, relationship closeness could be supplemented with questions relating to level of love, trust, and communication within the sexual encounter. Sexual desire could be similarly supplemented with items regarding physical arousal, intensity of orgasm, and sensuality. This approach can lead to richer analysis. Despite these limitations, the current analysis achieved its objectives of investigating what effects Latino cultural sexual beliefs have on condom use and of fashioning these results into a preliminary HIV-prevention counseling intervention for Latino MSM.

Conclusion

The present analysis, using HGLM modeling, found that Romantic Exigency Beliefs and Sexual Acquiescence Beliefs are sound constructs measured by the LSBS. Further, it was shown that the latter construct had both direct and moderating effects on UAI. This finding, teamed with the other results of the analysis, yielded 11 modules for inclusion in an HIV-prevention counseling intervention. These modules, and their constituent themes, appear to highlight the salient role of holistic sexuality in the sexual decision-making of Latino MSM. As such, the proposed intervention was given the preliminary name of "Thinking Holistically about My Sexual Risk." Though many steps remain before the intervention can be truly proposed as a viable strategy to reduce UAI, it currently has a supported theory-base and sound therapeutic constructs.

References

Abalos, D. T. (2002). *The Latino male: A radical redefinition*. Boulder, CO: Lynne Rienner Publishers.

Abdel-Khalek, A. M. (2006). Measuring happiness with a single-item scale. *Social Behavior and Personality: An International Journal*, *34*(2), 139-150.

Adam, B. D., Husbands, W., Murray, J., & Maxwell, J. (2005). AIDS optimism, condom fatigue, or self-esteem? Explaining unsafe sex among gay and bisexual men. *Journal of Sex Research*, *42*(3), 238-248.

Adler, M.W. (2001). ABC of AIDS: Development of the epidemic. *British Medical Journal*, *322*, 1226-1229.

Agar, M. (2003). Toward a qualitative epidemiology. *Qualitative Health Research*, *13*(7), 974-986.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action control: From cognition to behavior* (pp. 11–39). Heidelberg, Germany: Springer.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Drocesses*, *50*(2), 179-211.

Albarracín, D., Gillette, J. C., Earl, A. N., Glasman, L. R., Durantini, M. R., & Ho, M. (2005). A test of major assumptions about behavior change: A comprehensive look at the fffects of passive and active HIV-prevention interventions since the beginning of the epidemic. *Psychological Bulletin*, *131*(6), 856-897. doi:10.1037/0033-2909.131.6.856

Alexopoulos, G. S., Raue, P., & Areán, P. (2003). Problem-solving therapy versus

supportive therapy in geriatric major depression with executive dysfunction. *The American Journal of Geriatric Psychiatry, 11*(1), 46-52. doi:10.1176/appi.ajgp.11.1.46

American Counseling Association. (2014). *Code of ethics.* Alexandria, VA: Author

American Counseling Association. (2015). What is professional cousneling?. *ACA Community.* Retrieved April 30, 2015 from http://www.counseling.org/aca-community/learn-about-counseling/what-is-counseling

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Andersen, S. M., & Chen, S. (2002). The relational self: an interpersonal social-cognitive theory. *Psychological Review, 109*(4), 619-645.

Anna, C. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. Practical assessment. *Research and Evaluation, 10*(7), 1-9.

Antinori, A., Arendt, G., Becker, J. T., Brew, B. J., Byrd, D. A., Cherner, M., ... & Wojna, V. E. (2007). Updated research nosology for HIV-associated neurocognitive disorders. *Neurology, 69*(18), 1789-1799.

Ariely, D., & Loewenstein, G. (2006). The heat of the moment: The effect of sexual arousal on sexual decision making. *Journal of Behavioral Decision Making, 19*(2), 87-98.

Association for Assessment in Counseling. (2003). *Responsibilities of Users of Standardized Tests.* Retrieved September 9, 2015 from http://aac.ncat.edu/Resources/documents/RUST2003%20v11%20Final.pdf

Association for Multicultural Counseling and Development. (1996). *AMCD multicultural counseling competencies.* Alexandria, VA: Author.

Baggaley, R. F., White, R. G., & Boily, M. C. (2008). Systematic review of orogenital HIV-1 transmission probabilities. *International Journal of Epidemiology, 37*(6), 1255-1265.

Balán, I. C., Carballo-Diéguez, A., Ventuneac, A., & Remien, R. H. (2009). Intentional condomless anal intercourse among Latino MSM who meet sexual partners on the Internet. *AIDS education and prevention: Official publication of the International Society for AIDS Education, 21*(1), 14-24.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ, US: Prentice-Hall, Inc.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50*(2), 248-287.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual review of psychology, 52*(1), 1-26.

Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology, 51*(2), 269-290.

Bandura, A. (2012). Social cognitive theory. In P. M. Van Lange, A. W. Kruglanski, E. T. Higgins (Eds.) , *Handbook of theories of social psychology (Vol 1)* (pp. 349-373). Thousand Oaks, CA: Sage Publications Ltd.

Bandura, A., & Walters, R. (1963). *Social learning and personality development.* New York, NY: Holt Rinehart and Winston.

Barker, G., Ricardo, C., Nascimento, M., Olukoya, A., & Santos, C. (2010). Questioning

gender norms with men to improve health outcomes: Evidence of impact. *Global Public Health, 5*(5), 539-553.

Becker, S.L., Dezii, C.M., Burtcel, B., Kawabata, H., & Hodder, S. (2002). Young HIV-infected adults are at greater risk for medication non-adherence. *Journal of General Medicine, 4*(3), 1-4.

Becker, J. T., Kingsley, L., Mullen, J., Cohen, B., Martin, E., Miller, E. N., ... & Visscher, B. R. (2009). Vascular risk factors, HIV serostatus, and cognitive dysfunction in gay and bisexual men. *Neurology, 73*(16), 1292-1299.

Beeker, C., Guenther-Grey, C., & Raj, A. (1998). Community empowerment paradigm drift and the primary prevention of HIV/AIDS. *Social Science & Medicine, 46*(7), 831-842.

Berg, R. C. (2008). Barebacking among MSM Internet users. *AIDS and Behavior, 12*(5), 822-833.

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research, 44*(2), 175-184.

Beyrer, C., Baral, S. D., van Griensven, F., Goodreau, S. M., Chariyalertsak, S., Wirtz, A. L., & Brookmeyer, R. (2012). Global epidemiology of HIV infection in men who have sex with men. *The Lancet, 380*(9839), 367-377.

Bianchi, F. T., Shedlin, M. G., Brooks, K. D., Penha, M. M., Reisen, C. A., Zea, M. C., & Poppen, P. J. (2010). Partner selection among Latino immigrant men who have sex with men. *Archives of Sexual Behavior, 39*(6), 1321-1330.

Bing, E. G., Hays, R. D., Jacobson, L. P., Chen, B., Gange, S. J., Kass, N. E., ... &

Zucconi, S. L. (2000). Health-related quality of life among people with HIV disease: results from the Multicenter AIDS Cohort Study. *Quality of Life Research, 9*(1), 55-63.

Boarts, J.M., Sledjeski, E.M., Bogart, L.M., & Delahanty, D.L. (2006). The differential impact of PTSD and depression on HIV disease markers and adherence to HAART in people living with HIV. *AIDS and Behavior, 10*(3), 253-261. doi:10.1007/s10461-006-9069-7

Boerner, H. (2014, November 3). The world's most effective HIV prevention drug hasn't lived up to its potential. *The Washington Post.* Retrieved May 31, 2015 from http://www.washingtonpost.com/national/health-science/the-worlds-most-effective-hiv-prevention-drug-hasnt-lived-up-to-its-potential/2014/11/03/b0b08590-496d-11e4-a046-120a8a855cca_story.html

Boldero, J., Moore, S., & Rosenthal, D. (1992). Intention, context, and safe sex: Australian adolescents' responses to AIDS. *Journal of Applied Social Psychology, 22*(17), 1374-1396.

Brady, S. S., Tschann, J. M., Ellen, J. M., & Flores, E. (2009). Infidelity, trust, and condom use among Latino youth in dating relationships. *Sexually Transmitted Diseases, 36*(4), 227.

Briley, D. A., Morris, M. W., & Simonson, I. (2000). Reasons as carriers of culture: Dynamic versus dispositional models of cultural influence on decision making. *Journal of Consumer Research, 27*(2), 157-178.

Buehler, S. (2013). *What every mental health professional needs to know about sex*. New York, NY: Springer Publishing Company.

Cairns, G. (2014, October 29). Second European PrEP study closes placebo arm early due to high effectiveness. *NAM.* Retrieved March 15, 2015 from http://www.aidsmap.com/Second-European-PrEP-study-closes-placebo-arm-early-due-to-high-effectiveness/page/2917367/

Calabrese, S.K., Lo, S.C., Reisen, C.A., Zea, M.C., Poppen, P.J., & Bianchi, F.T. (2006, November). Cultural ideology and sexual risk-taking behavior among Latino MSM. Poster session at The Society for the Scientific Study of Sexuality annual meeting, Las Vegas, NV.

Calabrese, S. K., Reisen, C. A., Zea, M. C., Poppen, P. J., & Bianchi, F. T. (2012). The pleasure principle: the effect of perceived pleasure loss associated with condoms on unprotected anal intercourse among immigrant Latino men who have sex with men. *AIDS Patient Care and STDs*, *26*(7), 430-435.

Carballo-Diéguez, A., Remien, R. H., Dolezal, C., & Wagner, G. (1997). Unsafe sex in the primary relationships of Puerto Rican men who have sex with men. *AIDS and Behavior*, *1*(1), 9-17.

Cardo, D. M., Culver, D. H., Ciesielski, C. A., Srivastava, P. U., Marcus, R., Abiteboul, D., ... & Bell, D. M. (1997). A case–control study of HIV seroconversion in health care workers after percutaneous exposure. *New England Journal of Medicine*, *337*(21), 1485-1490.

Castaneda, D. (2000). The close relationship context and HIV/AIDS risk reduction among Mexican Americans. *Sex Roles*, *42*(7-8), 551-580.

Centers for Disease Control and Prevention (1981). Pneumocystis Pneumonia—Los Angeles. *Morbidity and Mortality Weekly Report*, *30*(21), 1-3. Retrieved June 4,

2015 from http://www.cdc.gov/mmwr/preview/mmwrhtml/june_5.htm

Centers for Disease Control and Prevention (2008). AIDS-Defining Conditions. *Morbidity and Mortality Weekly Report, 59*(RR10), 9. Retrieved March 1, 2015 from http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5710a2.htm

Centers for Disease Control and Prevention (2010). Prevalence and awareness of HIV infection among men who have sex with men—21 cities, United States, 2008. *Morbidity and Mortality Weekly Report, 59*(37), 1201-1207.

Centers for Disease Control and Prevention (2013a). Condoms and STDs: Fact sheet for Public Health Personnel. *Condom Effectiveness.* Retrieved January, 25 2015 from www.cdc.gov/condomeffectiveness/docs/condoms_and_stds.pdf

Centers for Disease Control and Prevention (2013b). Condom fact sheet in brief. *Condom Effectiveness.* Retrieved January, 25 2015 from http://www.cdc.gov/condomeffectiveness/docs/condomfactsheetinbrief.pdf

Centers for Disease Control and Prevention (2013c). HIV among gay and bisexual men. Retrieved February 21, 2015 from http://www.cdc.gov/hiv/pdf/risk_latino.pdf

Center for Disease Control and Prevention. (2013d). HIV Surveillance Supplemental Report: Social determinants of health among adults diagnosed with HIV infection in 18 areas, 2005-2009. *HIV Surveillance Report, 18*(4). Retrieved March 20, 2015 from http://www.cdc.gov/hiv/topics/surveillance/resources/reports/index.htm

Centers for Disease Control and Prevention (2013e). How you can prevent sexually transmitted diseases. *Sexually Transmitted Diseases (STDs).* Retrieved January, 25 2015 from http://www.cdc.gov/std/prevention/

Centers for Disease Control and Prevention (2014a). HIV among gay and bisexual men. Retrieved February 21, 2015 from http://www.cdc.gov/hiv/pdf/msm_fact_sheet_final_2014.pdf

Centers for Disease Control and Prevention (2014b). HIV Surveillance Supplemental Report, 2014; vol. 19(No. 3). Retrieved March 1, 2015 from http://www.cdc.gov/hiv/library/reports/surveillance/

Centers for Disease Control and Prevention. (2014c). Oral sex and HIV risk. Retrieved March 1, 2015 from http://www.cdc.gov/hiv/pdf/oral_sex_fact_sheet_01%20FINAL.pdf

Centers for Disease Control and Prevention. (2014d). *Preexposure prophylaxis for the prevention of HIV infection in the United Stated—2014: A clinical practice guideline.* Atlanta, GA: Author. Retrieved March 15, 2015 from http://www.cdc.gov/hiv/pdf/PrEPguidelines2014.pdf

Centers for Disease Control and Prevention. (2014e). Risk behavior. *HIV/AIDS.* Retrieved February 15, 2015 from http://www.cdc.gov/hiv/risk/behavior/index.html

Centers for Disease Control and Prevention (2015a). About HIV/AIDS. *HIV/AIDS.* Retrieved March 1, 2015 from http://www.cdc.gov/hiv/basics/whatishiv.html

Centers for Disease Control and Prevention (2015b). HIV Surveillance Report, 2013; vol. 25. Retrieved March 1, 2015 from http://www.cdc.gov/hiv/library/reports/surveillance/

Centers for Disease Control and Prevention. (2015c). Leading causes of death. *Injury Prevention & Control: Data & Statistics (WISQARS™).* Retrieved March 8, 2015

from http://www.cdc.gov/injury/wisqars/leading_causes_death.html

Centers for Disease Control and Prevention. (2015d). Listing of all risk reduction intervention, by characteristic. *Compendium of Evidence-Based HIV Behavioral Interventions.* Retrieved February 14, 2015 from http://www.cdc.gov/hiv/prevention/research/compendium/rr/characteristics.html

Centers for Disease Control and Prevention. (2015e). PEP. *HIV/AIDS Basics.* Retrieved March 15, 2015 from http://www.cdc.gov/hiv/basics/pep.html

Centers for Disease Control and Prevention. (2015f). PrEP. *HIV/AIDS Basics.* Retrieved March 15, 2015 from http://www.cdc.gov/hiv/basics/prep.html

Cervone, D., Shadel, W. G., & Jencius, S. (2001). Social-cognitive theory of personality assessment. *Personality and Social Psychology Review, 5*(1), 33-51.

Chapman, G. (2004). *The Five Love Languages: How to express heartfelt communication to your mate.* Chicago: Northfield Publishing.

Chivers, M. L., Seto, M. C., Lalumiere, M. L., Laan, E., & Grimbos, T. (2010). Agreement of self-reported and genital measures of sexual arousal in men and women: A meta-analysis. *Archives of Sexual Behavior*, *39*(1), 5-56.

Chi-Ying Chung, R., & Bemak, F. (2002). The relationship of culture and empathy in cross-cultural counseling. *Journal of Counseling & Development*, *80*(2), 154-159.

Clifford, D. B., & Ances, B. M. (2013). HIV-associated neurocognitive disorder. *The Lancet Infectious Diseases, 13*(11), 976-986.

Cohen, M. S., Chen, Y. Q., McCauley, M., Gamble, T., Hosseinipour, M. C., Kumarasamy, N., ... & Fleming, T. R. (2011). Prevention of HIV-1 infection with early antiretroviral therapy. *New England Journal of Medicine*, *365*(6), 493-505.

Cohen, M. S., Dye, C., Fraser, C., Miller, W. C., Powers, K. A., & Williams, B. G. (2012). HIV treatment as prevention: debate and commentary—will early infection compromise treatment-as-prevention strategies?. *PLoS medicine*, *9*(7), e1001232.

Cooper, J., Mirabile, R., Scher, S. J., Brock, T. C., & Green, M. C. (2005). Actions and attitudes: The theory of cognitive dissonance. In T. C. Brock & M. C. Green (Eds.), *Persuasion: Psychological insights and perspectives* (2nd ed., pp. 63–79). Thousand Oaks, CA: Sage

Cooper, M. L. (2010). Toward a person x situation model of sexual risk-taking behaviors: Illuminating the conditional effects of traits across sexual situations and relationship contexts. *Journal of Personality and Social Psychology, 98,* 319–341. doi:10.1037/a0017785

Corinna, H. (2014). Sexuality: WTF is it, anyway? *Scarleteen: Sex ed for the real world.* Retrieved September 9, 2015 from http://www.scarleteen.com/article/bodies/sexuality_wtf_is_it_anyway

Costello, A.B., & Osborne, J.W. (2005) Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, & Evaluation, 10*(7), 1-9.

Council for Accreditation of Counseling and Related Educational Programs. (2009). *CACREP standards.* Retrieved April 29, 2015 from http://www.cacrep.org/wp-content/uploads/2013/12/2009-Standards.pdf

Cove, J., & Petrak, J. (2004). Factors associated with sexual problems in HIV-positive gay men. *International Journal of STD & AIDS, 15*(11), 732-736.

Crossley, M. L. (2001). The 'Armistead' project: an exploration of gay men, sexual practices, community health promotion and issues of empowerment. *Journal of Community & Applied Social Psychology*, *11*(2), 111-123. doi:10.1002/casp.618

Croteau, J. M., Nero, C. I., & Prosser, D. J. (1993). Social and Cultural Sensitivity in Group-Specific HIV and AIDS Programming. *Journal of Counseling & Development*, *71*(3), 290-296.

Curry, S. J., Grossman, D. C., Whitlock, E. P., & Cantu, A. (2014). Behavioral counseling research and evidence-based practice recommendations: US Preventive Services Task Force perspectives. *Annals of Internal Medicine*, *160*(6), 407-413.

Dailey, D.M. (1981). Sexual expression and aging. In F.J. Berghorn, D.E. Schafer, & Associates (Eds.), *The dynamics of aging: Original essays on the processes and experiences of growing old* (pp. 311-330). Boulder, CO: Westview Press.

Data Collection on Adverse Events of Anti-HIV drugs (D: A: D) Study Group. (2010). Factors associated with specific causes of death amongst HIV-positive individuals in the D: A: D Study. *AIDS*, *24*(10), 1537-1548.

Davis, S., & Taylor, B. (2006). From PLISSIT to ex-PLISSIT. In S. Davis (Ed.). *Rehabilitation: The use of theories and models in practice* (pp. 101-129). Philadelphia: PA, Elsevier.

De la Mora, S. (2009). *Cinemachismo: Masculinities and sexuality in Mexican film*. Austin, TX: University of Texas Press.

De Leeuw, E., Hox, J., & Kef, S. (2003). Computer-assisted self-interviewing tailored for special populations and topics. *Field Methods*, *15*(3), 223-251.

Detels, R., & Winslow, D. L. (2012). Treatment as prevention: some additional thoughts. *AIDS*, *26*(4), 519-520.

Diaz, R. M. (1998). *Latino gay men and HIV: Culture, sexuality, and risk behavior.* New York, NY: Routledge.

Diaz, R. M., & Ayala, G. (1999). Love, passion and rebellion: Ideologies of HIV risk among Latino gay men in the USA. *Culture, Health & Sexuality*, *1*(3), 277-293.

Diaz, R. M., Ayala, G., & Bein, E. (2004). Sexual risk as an outcome of social oppression: Data from a probability sample of Latino gay men in three US cities. *Cultural Diversity and Ethnic Minority Psychology*, *10*(3), 255-267.

Dickson-Gomez, J., Weeks, M. R., Convey, M., & Li, J. (2011). Social psychological dynamics of enhanced HIV risk reduction among peer interventionists. *Journal of Community Psychology*, *39*(4), 369-389. doi:10.1002/jcop.20440

Dilley, J. W., Woods, W. J., Sabatino, J., Lihatsh, T., Adler, B., Casey, S., ... & McFarland, W. (2002). Changing sexual behavior among gay male repeat testers for HIV: A randomized, controlled trial of a single-session intervention. *Journal of Acquired Immune Deficiency Syndromes, 30*(2), 177-186.

Doll, L. S., Petersen, L. R., White, C. R., Johnson, E. S., Ward, J. W., & Blood Donor Study Group. (1992). Homosexually and nonhomosexually identified men who have sex with men: A behavioral comparison. *Journal of Sex Research*, *29*(1), 1-14.

Donohew, L., Zimmerman, R., Cupp, P. S., Novak, S., Colon, S., & Abell, R. (2000). Sensation seeking, impulsive decision-making, and risky sex: Implications for risk-taking and design of interventions. *Personality and Individual Differences*,

28(6), 1079-1091.

Eaton, L. A., Cherry, C., Cain, D., & Pope, H. (2011). A novel approach to prevention for at-risk HIV-negative men who have sex with men: Creating a teachable moment to promote informed sexual decision-making. *American Journal of Public Health, 101*(3), 539-545.

Elford, J., Bolding, G., Davis, M., Sherr, L., & Hart, G. (2007). Barebacking among HIV-positive gay men in London. *Sexually Transmitted Diseases*, *34*(2), 93-98.

Ellis, R.J., Calero, P., & Stockin, M.D. (2009). HIV infection and the central nervous system: A primer. *Neuropsychology Review, 19*(2), 144-151. doi:10.1007/s11065-009-9094-1

Englar-Carlson, M., & Kiselica, M.S. (2013). Affirming the strengths in men: A positive masculinity approach to assisting male clients. *Journal of Counseling & Development, 91*(4), 399-409.

Erlandson, K. M., Reynolds, S. M., Cox, C., Palella, F. J., Witt, M. D., Kingsley, L. A., ... & Plankey, M. (2014). Self-reported body fat change in HIV-infected men is a marker of decline in physical health-related quality of life with aging, independent of co-morbidity. *PloS one*, *9*(12), e114166.

Estrada, A. U., & Haney, P. (1998). Genograms in a multicultural perspective. *Journal of Family Psychotherapy, 9*(2), 55-62.

Ewart, C. K. (1991). Social action theory for a public health psychology. *American Psychologist, 46*(9), 931-946.

Fenton, K. A., Johnson, A. M., McManus, S., & Erens, B. (2001). Measuring sexual behaviour: Methodological challenges in survey research. *Sexually Transmitted*

Infections, *77*(2), 84-92.

Festinger, L. (1962). Cognitive dissonance. *Scientific American, 207*(4), 93-107.

Fields, E. L., Bogart, L. M., Smith, K. C., Malebranche, D. J., Ellen, J., & Schuster, M. A. (2012). HIV risk and perceptions of masculinity among young Black men who have sex with men. *Journal of Adolescent Health, 50*(3), 296-303. doi:10.1016/j.jadohealth.2011.07.007

Fishbein, M. (2000). The role of theory in HIV prevention. *AIDS care*, *12*(3), 273-278.

Fishbein, M., & Ajzen, I. (2005). Theory-based behavior change interventions: Comments on Hobbis and Sutton. *Journal of Health Psychology*, *10*(1), 27-31.

Fleishman, J. A., Gebo, K. A., Reilly, E. D., Conviser, R., Mathews, W. C., Korthuis, P. T., ... & HIV Research Network. (2005). Hospital and outpatient health services utilization among HIV-infected adults in care 2000–2002. *Medical Care*, *43*(9), 40-52.

Flowers, P., Smith, J. A., Sheeran, P., & Beail, N. (1997). Health and romance: Understanding unprotected sex in relationships between gay men. *British Journal of Health Psychology*, *2*(1), 73-86.

Folch, C., Muñoz, R., Zaragoza, K., &Casabona, J. (2009). Sexual risk behaviour and its determinants among men who have sex with men in Catalonia, Spain. *Special Edition: HIV/AIDS and Other Sexually Transmitted Infections (STD) in Men Who Have Sex with Men (MSM)*, *19*(30), 24-30.

Franssens, D., Hospers, H. J., & Kok, G. (2009). Social-cognitive determinants of condom use in a cohort of young gay and bisexual men. *AIDS Care*, *21*(11), 1471-1479.

Friedman, S. R., Cooper, H. F., & Osborne, A. H. (2009). Structural and social contexts of HIV risk among African Americans. *American Journal of Public Health, 99*(6), 1002-1008. doi:10.2105/AJPH.2008.140327

Frost, D. M., Stirratt, M. J., & Ouellette, S. C. (2008). Understanding why gay men seek HIV‐seroconcordant partners: Intimacy and risk reduction motivations. *Culture, Health & Sexuality, 10*(5), 513-527.

Frye, V., Koblin, B., Chin, J., Beard, J., Blaney, S., Halkitis, P., ... & Galea, S. (2010). Neighborhood-level correlates of consistent condom use among men who have sex with men: A multi-level analysis. *AIDS and Behavior, 14*(4), 974-985.

Frye, V., Latka, M. H., Koblin, B., Halkitis, P. N., Putnam, S., Galea, S., & Vlahov, D. (2006). The urban environment and sexual risk behavior among men who have sex with men. *Journal of Urban Health, 83*(2), 308-324.

Fuqua, V., Chen, Y. H., Packer, T., Dowling, T., Ick, T. O., Nguyen, B., ... & Raymond, H. F. (2012). Using social networks to reach Black MSM for HIV testing and linkage to care. *AIDS and Behavior, 16*(2), 256-265.

Gabillard, D., Lewden, C., Ndoye, I., Moh, R., Segeral, O., Tonwe-Gold, B., ... & ANRS 12222 Morbidity/Mortality Study Group. (2013). Mortality, AIDS-morbidity and loss to follow-up by current CD4 cell count among HIV-1 infected adults receiving antiretroviral therapy in Africa and Asia: Data from the ANRS 12222 collaboration. *Journal of Acquired Immune Deficiency Syndromes, 62*(5), 555-561.

Garnett, G. P. (2007). Theory is critical in understanding the risks of acquiring HIV. *Sexually Transmitted Diseases, 34*(10), 737-738.

Garza, R. T. (1977). Personal control and fatalism in Chicanos and Anglos: Conceptual and methodological issues. In J.L. Martinez (Ed.), *Chicano psychology* (pp. 97-108). New York, NY: Academy Press.

Gaynes, B. N., Pence, B. W., Eron Jr, J. J., & Miller, W. C. (2008). Prevalence and comorbidity of psychiatric diagnoses based on reference standard in an HIV+ patient population. *Psychosomatic Medicine*, *70*(4), 505-511.

Gochros, H.L. (1972). Sexual problems in social work practice. In H.L. Gocros & L.G. Schultz (Eds.), *Human sexuality and social work* (pp. 82-84). New York, NY: Association Press.

Gochros, H.L. (1974). A concentration in social work practice with sex-related problems. *Journal of Education for Social Work, 10*(2), 40-46. doi:10.1080/00220612.1974.10672308

Goldstein, H. (2011). *Multilevel statistical models* (Vol. 922). United Kingdom: John Wiley & Sons.

Golub, S. A., Kowalczyk, W., Weinberger, C. L., & Parsons, J. T. (2010). Preexposure prophylaxis and predicted condom use among high-risk men who have sex with men. *Journal of acquired immune deficiency syndromes (1999)*, *54*(5), 548-555.

Golub, S. A., Starks, T. J., Payton, G., & Parsons, J. T. (2012). The critical role of intimacy in the sexual risk behaviors of gay and bisexual men. *AIDS and Behavior*, *16*(3), 626-632.

Gorbach, P. M., & Holmes, K. K. (2003). Transmission of STIs/HIV at the partnership level: Beyond individual-level analyses. *Journal of Urban Health*, *80*, iii15-iii25.

Grant, R. M., Lama, J. R., Anderson, P. L., McMahan, V., Liu, A. Y., Vargas, L., ... &

Glidden, D. V. (2010). Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. *New England Journal of Medicine, 363*(27), 2587-2599.

Greene, G. J., Andrews, R., Kuper, L., & Mustanski, B. (2014). Intimacy, monogamy, and condom problems drive unprotected sex among young men in serious relationships with other men: a mixed methods dyadic study. *Archives of Sexual Behavior, 43*(1), 73-87.

Guiguet, M., Boué, F., Cadranel, J., Lang, J. M., Rosenthal, E., Costagliola, D., & Clinical Epidemiology Group of the FHDH-ANRS CO4 Cohort. (2009). Effect of immunodeficiency, HIV viral load, and antiretroviral therapy on the risk of individual malignancies (FHDH-ANRS CO4): a prospective cohort study. *The Lancet Oncology, 10*(12), 1152-1159.

Gupta, P., Collins, K. B., Ratner, D., Watkins, S., Naus, G. J., Landers, D. V., & Patterson, B. K. (2002). Memory CD4+ T cells are the earliest detectable human immunodeficiency virus type 1 (HIV-1)-infected cells in the female genital mucosal tissue during HIV-1 transmission in an organ culture system. *Journal of Virology*, *76*(19), 9868-9876.

Gutkin, T. B. (1993). Cognitive modeling: A means for achieving prevention in school-based consultation. *Journal of Educational and Psychological Consultation*, *4*(2), 179-183.

Gutnik, L. A., Hakimzada, A. F., Yoskowitz, N. A., & Patel, V. L. (2006). The role of emotion in decision-making: A cognitive neuroeconomic approach towards understanding sexual risk behavior. *Journal of Biomedical Informatics, 39*(6), 720-736.

Haboubi, N. H. J., & Lincoln, N. (2003). Views of health professionals on discussing sexual issues with patients. *Disability & Rehabilitation, 25*(6), 291-296.

Halkitis, P. N., Kapadia, F., Siconolfi, D. E., Moeller, R. W., Figueroa, R. P., Barton, S. C., & Blachman-Forshay, J. (2013). Individual, Psychosocial, and Social Correlates of Unprotected Anal Intercourse in a New Generation of Young Men Who Have Sex With Men in New York City. *American Journal Of Public Health, 103*(5), 889-895

Halkitis, P. N., & Parsons, J. T. (2003). Intentional unsafe sex (barebacking) among HIV-positive gay men who seek sexual partners on the Internet. *AIDS Care, 15*(3), 367-378. doi:10.1080/0954012031000105423

Haller, D. L., & Miles, D. R. (2003). Suicidal ideation among psychiatric patients with HIV: psychiatric morbidity and quality of life. *AIDS and Behavior, 7*(2), 101-108.

Hanzlik, M. & Gaubatz, M. (2012). Clinical PsyD trainees' comfort discussing sexual issues with clients. *American Journal of Sexuality Education, 7*(3), 219-236. doi:10.1080/15546128.2012.707080

Harmon-Jones, E., & Harmon-Jones, C. (2007). Cognitive dissonance theory after 50 years of development. *Zeitschrift für Sozialpsychologie, 38*(1), 7-16.

Hays, R. D., Cunningham, W. E., Sherbourne, C. D., Wilson, I. B., Wu, A. W., Cleary, P. D., ... & Bozzette, S. A. (2000). Health-related quality of life in patients with human immunodeficiency virus infection in the United States: Results from the HIV Cost and Services Utilization Study. *The American Journal of Medicine, 108*(9), 714-722.

Hazra, A. (2006). Enhancing sensuality for safer sex among men in India. *IDS Bulletin*,

37(5), 98-104.

Healthy Living Project Team. (2007). Effects of a behavioral intervention to reduce risk of transmission among people living with HIV: The healthy living project randomized controlled study. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *44*(2), 213-221.

Heaton, R. K., Clifford, D. B., Franklin, D. R., Woods, S. P., Ake, C., Vaida, F., ... & Grant, I. (2010). HIV-associated neurocognitive disorders persist in the era of potent antiretroviral therapy: CHARTER Study. *Neurology*, *75*(23), 2087-2096.

Heckman, B.D., Catz, S.L., Heckman, T.G., Miller, J.G., & Kalichman, S.C. (2004). Adherence to antiretroviral therapy in rural persons living with HIV disease in the United

States. *AIDS Care, 16*(2), 219-230.

Helms, D. J., Weinstock, H. S., Mahle, K. C., Bernstein, K. T., Furness, B. W., Kent, C. K., ... & Golden, M. R. (2009). HIV testing frequency among men who have sex with men attending sexually transmitted disease clinics: implications for HIV prevention and surveillance. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *50*(3), 320-326.

Hensel, D. J., Rosenberger, J. G., Novak, D. S., & Reece, M. (2012). Sexual event-level characteristics of condom use during anal intercourse among HIV-negative men who have sex with men. *Sexually Transmitted Diseases*, *39*(7), 550-555.

Heiman, J. R. (2002). Sexual dysfunction: Overview of prevalence, etiological factors, and treatments. *Journal of Sex Research*, *39*(1), 73-78.

Herbst, J. H., Sherba, R. T., Crepaz, N., DeLuca, J. B., Zohrabyan, L., Stall, R. D., ... &

HIV/AIDS Prevention Research Synthesis Team. (2005). A meta-analytic review of HIV behavioral interventions for reducing sexual risk behavior of men who have sex with men. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *39*(2), 228-241.

Herdt, G. H. (1997). *Same sex, different cultures: Gays and lesbians across cultures*. Boulder, CO: Westview Press.

Heuker, J., Sonder, G. J., Stolte, I., Geskus, R., & Van Den Hoek, A. (2012). High HIV incidence among MSM prescribed postexposure prophylaxis, 2000–2009: indications for ongoing sexual risk behaviour. *AIDS*, *26*(4), 505-512.

Hoff, C. C., Chakravarty, D., Beougher, S. C., Neilands, T. B., & Darbes, L. A. (2012). Relationship characteristics associated with sexual risk behavior among MSM in committed relationships. *AIDS Patient Care & STDs*, *26*(12), 738-745. doi:10.1089/apc.2012.0198

Hogg, R. S., Yip, B., Chan, K. J., Wood, E., Craib, K. J., O'Shaughnessy, M. V., & Montaner, J. S. (2001). Rates of disease progression by baseline CD4 cell count and viral load after initiating triple-drug therapy. *Journal of the American Medical Association*, *286*(20), 2568-2577.

Houston, E., Sandfort, T., Dolezal, C., & Carballo-Diéguez, A. (2012). Depressive symptoms among MSM who engage in bareback sex: does mood matter?. *AIDS and Behavior*, *16*(8), 2209-2215.

Huebner, D. M., Neilands, T. B., Rebchook, G. M., & Kegeles, S. M. (2011). Sorting through chickens and eggs: a longitudinal examination of the associations between attitudes, norms, and sexual risk behavior. *Health Psychology*, *30*(1),

110-118.

Interian, A., Martinez, I., Rios, L. I., Krejci, J., & Guarnaccia, P. J. (2010). Adaptation of a motivational interviewing intervention to improve antidepressant adherence among Latinos. *Cultural Diversity and Ethnic Minority Psychology*, *16*(2), 215-225.

International Council of AIDS Service Organizations. (2015). *Home*. Retrieved June 1, 2015 from www.icaso.org.

Jarama, S. L., Kennamer, J. D., Poppen, P. J., Hendricks, M., & Bradford, J. (2005). Psychosocial, behavioral, and cultural predictors of sexual risk for HIV infection among Latino men who have sex with men. *AIDS and Behavior*, *9*(4), 513-523.

Jeffries, W. L. (2009). A comparative analysis of homosexual behaviors, sex role preferences, and anal sex proclivities in Latino and non-Latino men. *Archives of Sexual Behavior*, *38*(5), 765-778.

Johnson, B. T., Redding, C. A., DiClemente, R. J., Mustanski, B. S., Dodge, B., Sheeran, P., ... & Fishbein, M. (2010). A network-individual-resource model for HIV prevention. *AIDS and Behavior*, *14*(2), 204-221.

Joint United Nations Programme on HIV/AIDS. (2009). Condoms and HIV prevention: Position statement by UNAIDS, UNFPA and WHO. *Resources.* Retrieved March 14, 2015 from http://www.unaids.org/en/resources/presscentre/featurestories/2009/march/20090319preventionposition

Jones, J., & Sullivan, P. S. (2014). Impulsivity as a Risk Factor for HIV Transmission in Men Who Have Sex with Men: A Delay Discounting Approach. *Journal of*

Homosexuality, (ahead-of-print), 1-16.

Juergens, M. H., Smedema, S. M., & Berven, N. L. (2009). Willingness of graduate students in rehabilitation counseling to discuss sexuality with clients. *Rehabilitation Counseling Bulletin*, *53*(1), 34-43.

Kahn, J. H. (2006). Factor analysis in counseling psychology research, training, and practice principles, advances, and applications. *The Counseling Psychologist*, *34*(5), 684-718.

Kalichman, S. C., Rompa, D., & Cage, M. (2005). Group intervention to reduce HIV transmission risk behavior among persons living with HIV/AIDS. *Behavior Modification*, *29*(2), 256-285.

Kalichman, S. C., Weinhardt, L., DiFonzo, K., Austin, J., & Luke, W. (2002). Sensation seeking and alcohol use as markers of sexual transmission risk behavior in HIV-positive men. *Annals of Behavioral Medicine*, *24*(3), 229-235.

Kaplan, H. S. (1974). *The new sex therapy.* New York, NY: Brunner/Mazel, Inc.

Kelly, J. A., & Murphy, D. A. (1992). Psychological interventions with AIDS and HIV: Prevention and treatment. *Journal of Consulting and Clinical Psychology*, *60*(4), 576-585. doi:10.1037/0022-006X.60.4.576

Kelly, J. A., Somlai, A. M., DiFranceisco, W. J., Otto-Salaj, L. L., McAuliffe, T. L., Hackl, K. L., ... & Rompa, D. (2000). Bridging the gap between the science and service of HIV prevention: Transferring effective research-based HIV prevention interventions to community AIDS service providers. *American Journal of Public Health*, *90*(7), 1082-1088.

Kiselica, M.S., & Englar-Carlson, M. (2010). Identifying, affirming, and building upon

male strengths: The positive psychology/positive masculinity model of psychotherapy with boys and men. *Psychotherapy: Theory, Research, Practice, Training*, *47*(3), 276-287. doi:10.1037/a0021159

Kiviat, N. B., Critchlow, C. W., Hawes, S. E., Kuypers, J., Surawicz, C., Goldbaum, G., ... & Holmes, K. K. (1998). Determinants of human immunodeficiency virus DNA and RNA shedding in the anal-rectal canal of homosexual men. *Journal of Infectious Diseases*, *177*(3), 571-578.

Kline, P. (2013). *Handbook of psychological testing*. London, England: Routledge.

Koblin, B. A., & EXPLORE Study Team. (2004). Effects of a behavioural intervention to reduce acquisition of HIV infection among men who have sex with men: The EXPLORE randomised controlled study. *The Lancet*, *364*(9428), 41-50.

Koblin, B. A., Husnik, M. J., Colfax, G., Huang, Y., Madison, M., Mayer, K., & ... Buchbinder, S. (2006). Risk factors for HIV infection among men who have sex with men. *AIDS*, *20*(5), 731-739. doi:10.1097/01.aids.0000216374.61442.55

Kobrak, P., Ponce, R., & Zielony, R. (2015). New arrivals to New York City: Vulnerability to HIV among urban migrant young gay men. *Archives of Sexual Behavior*, *44*(7), 2041-2053.

Kok, G., Hospers, H., Harterink, P., & De Zwart, O. (2007). Social-cognitive determinants of HIV risk-taking intentions among men who date men through the Internet. *AIDS Care*, *19*(3), 410-417.

Komiti, A., Judd, F., Grech, P., Mijch, A., Hoy, J., Lloyd, J. H., & Street, A. (2001). Suicidal behaviour in people with HIV/AIDS: A review. *Australian and New Zealand Journal of Psychiatry*, *35*(6), 747-757. doi:10.1046/j.1440-1614.2001.00943.x

Kontula, O., & Haavio-Mannila, E. (2009). The impact of aging on human sexual activity and sexual desire. *Journal of Sex Research, 46*(1), 46-56. doi:10.1080/00224490802624414

Kooyman, L. E. (2008). Predictors of high-risk sexual behavior among gay men and men who have sex with men. *Journal of LGBT Issues in Counseling*, *2*(4), 285-307.

Krieger, N. (2008). Proximal, distal, and the politics of causation: what's level got to do with it?. *American Journal of Public Health, 98*(2), 221.

Kurth, A. E., Martin, D. P., Golden, M. R., Weiss, N. S., Heagerty, P. J., Spielberg, F., ... & Holmes, K. K. (2004). A comparison between audio computer-assisted self-interviews and clinician interviews for obtaining the sexual history. *Sexually Transmitted Diseases*, *31*(12), 719-726.

Kurth, A. E., Spielberg, F., Cleland, C. M., Lambdin, B., Bangsberg, D. R., Frick, P. A., ... & Holmes, K. K. (2014). Computerized counseling reduces HIV-1 viral load and sexual transmission risk: Findings from a randomized controlled trial. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *65*(5), 611-620.

Landovitz, R. J., Tseng, C. H., Weissman, M., Haymer, M., Mendenhall, B., Rogers, K., ... & Shoptaw, S. (2013). Epidemiology, sexual risk behavior, and HIV prevention practices of men who have sex with men using GRINDR in Los Angeles, California. *Journal of Urban Health*, *90*(4), 729-739.

Latkin, C. A., & Knowlton, A. R. (2005). Micro-social structural approaches to HIV prevention: A social ecological perspective. *Aids Care*, *17*(S1), 102-113.

Ledergerber, B. (2004). Predictors of trend in CD4-positive T-cell count and mortality among HIV-1-infected individuals with virological failure to all three

antiretroviral-drug classes. *Lancet*, *364*(9428), 51-62.

Lehman, D. R., Chiu, C. Y., & Schaller, M. (2004). Psychology and culture. *Annual Review of Psychology*, *55*, 689-714.

Lent, R. W., & Maddux, J. E. (1997). Self-efficacy: Building a sociocognitive bridge between social and counseling psychology. *The Counseling Psychologist*, *25*(2), 240-255. doi:10.1177/0011000097252005

Lent, R. W., Singley, D., Sheu, H. B., Gainor, K. A., Brenner, B. R., Treistman, D., & Ades, L. (2005). Social cognitive predictors of domain and life satisfaction: Exploring the theoretical precursors of subjective well-being. *Journal of Counseling Psychology*, *52*(3), 429-442.

Leonard, B.E., & Myint, A. (2009). The psychoneuroimmunology of depression. Human Psychopharmacology: *Clinical and Experimental, 24*(3), 165-175.

Levin, R. (2003). The ins and outs of vaginal lubrication. *Sexual & Relationship Therapy*, *18*(4), 509-513.

Lewden, C., Salmon, D., Morlat, P., Bévilacqua, S., Jougla, E., Bonnet, F., ... & Chêne, G. (2005). Causes of death among human immunodeficiency virus (HIV)-infected adults in the era of potent antiretroviral therapy: Emerging role of hepatitis and cancers, persistent role of AIDS. *International Journal of Epidemiology*, *34*(1), 121-130.

Li, H., Bar, K. J., Wang, S., Decker, J. M., Chen, Y., Sun, C., ... & Shaw, G. M. (2010). High multiplicity infection by HIV-1 in men who have sex with men. *PLoS Pathogens*, *6*(5), e1000890.

Lieb, S., White, S., Grigg, B. L., Thompson, D. R., Liberti, T. M., & Fallon, S. J. (2010).

Estimated HIV incidence, prevalence, and mortality rates among racial/ethnic populations of men who have sex with men, Florida. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *54*(4), 398-405.

Lindbladh, E., & Lyttkens, C. H. (2002). Habit versus choice: the process of decision-making in health-related behaviour. *Social Science & Medicine*, *55*(3), 451-465.

Liu, A. Y., Kittredge, P. V., Vittinghoff, E., Raymond, H. F., Ahrens, K., Matheson, T., ... & Buchbinder, S. P. (2008). Limited knowledge and use of HIV post-and pre-exposure prophylaxis among gay and bisexual men. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *47*(2), 241-247.

Lo, S. C., Reisen, C. A., Poppen, P. J., Bianchi, F. T., & Zea, M. C. (2011). Cultural beliefs, partner characteristics, communication, and sexual risk among Latino MSM. *AIDS and Behavior*, *15*(3), 613-620.

MacCluskie, K. (2011). *Acquiring counseling skills: Integrating theory, multiculturalism, and self-awareness*. Upper Saddle River, NJ: Pearson.

MacKellar, D. A., Valleroy, L. A., Anderson, J. E., Behel, S., Secura, G. M., Bingham, T., ... & Janssen, R. S. (2006). Recent HIV testing among young men who have sex with men: correlates, contexts, and HIV seroconversion. *Sexually Transmitted Diseases*, *33*(3), 183-192.

MacNeale, R.J., & Dinulos, J.G.H. (2006). Acute retroviral syndrome. *Dermatologic Clinics, 24*(4), 431-438.

Mansergh, G., Koblin, B. A., Colfax, G. N., McKirnan, D. J., Flores, S. A., Hudson, S. M., & Project MIX Study Team. (2010). Preefficacy use and sharing of antiretroviral medications to prevent sexually-transmitted HIV infection among

US men who have sex with men. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *55*(2), e14-e16.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, *98*(2), 224-253.

Marín, B. V. (2003). HIV prevention in the Hispanic community: Sex, culture, and empowerment. *Journal of Transcultural Nursing*, *14*(3), 186-192.

Martinez, J., & Hosek, S. G. (2005). An exploration of the down-low identity: Nongay-identified young African-American men who have sex with men. *Journal of the National Medical Association*, *97*(8), 1103.

Mattapallil, J. J., Douek, D. C., Hill, B., Nishimura, Y., Martin, M., & Roederer, M. (2005). Massive infection and loss of memory CD4+ T cells in multiple tissues during acute SIV infection. *Nature*, *434*(7037), 1093-1097.

Mausbach, B. T., Semple, S. J., Strathdee, S. A., Zians, J., & Patterson, T. L. (2007). Efficacy of a behavioral intervention for increasing safer sex behaviors in HIV-positive MSM methamphetamine users: Results from the EDGE study. *Drug and Alcohol Dependence*, *87*(2), 249-257.

McCabe, K. M., Goehring, K., Yeh, M., & Lau, A. S. (2008). Parental locus of control and externalizing behavior problems among Mexican American preschoolers. *Journal of Emotional and Behavioral Disorders*, *16*(2), 118-126.

McKay, A. (2007). The effectiveness of latex condoms for prevention of STI/HIV. *Canadian Journal of Human Sexuality*, *16*(1/2), 57-61.

McKirnan, D. J., Tolou-Shams, M., & Courtenay-Quirk, C. (2010). The Treatment Advocacy Program: a randomized controlled trial of a peer-led safer sex

intervention for HIV-infected men who have sex with men. *Journal of Consulting and Clinical Psychology, 78*(6), 952-963.

McLaughlin, J. A., & Jordan, G. B. (2004). Using logic models. In J. S. Wholey, H. P. Hatry, & K. E. Newcomer (Eds.), *Handbook of practical program evaluation (Vol. 2)* (pp. 7-32).

Millett, G., Flores, S., Peterson, J., & Bakeman, R. (2007). Explaining disparities in HIV infection among black and white men who have sex with men: a meta-analysis of HIV risk behaviors. *AIDS, 21,* 2083-2091.

Miner, M. H., Peterson, J. L., Welles, S. L., Jacoby, S. M., & Rosser, B. S. (2009). How do social norms impact HIV sexual risk behavior in HIV-positive men who have sex with men? Multiple mediator effects. *Journal of health psychology, 14*(6), 761-770.

Misovich, S. J., Fisher, J. D., & Fisher, W. A. (1997). Close relationships and elevated HIV risk behavior: Evidence and possible underlying psychological processes. *Review of General Psychology, 1*(1), 72-107. doi:10.1037/1089-2680.1.1.72

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. New York, NY: Guilford press.

Moreno, C. L. (2012). Latino families affected by HIV/AIDS: Some practical practice considerations. In E.P. Congress, & M.J. Gonzalez (Eds.). *Multicultural perspectives in social work practice with families* (pp. 297-309). New York, NY: Springer.

Mowat, A. M., & Viney, J. L. (1997). The anatomical basis of intestinal immunity. *Immunological reviews, 156*(1), 145-166.

Mustanski, B. (2007). The influence of state and trait affect on HIV risk behaviors: A daily diary study of MSM. *Health Psychology, 26*(5), 618-626. doi:10.1037/0278-6133.26.5.618

Mustanski, B., Newcomb, M. E., & Clerkin, E. M. (2011). Relationship characteristics and sexual risk-taking in young men who have sex with men. *Health Psychology, 30*(5), 597.

Mustanski, B. S., Newcomb, M. E., Du Bois, S. N., Garcia, S. C., & Grov, C. (2011). HIV in young men who have sex with men: A review of epidemiology, risk and protective factors, and interventions. *Journal of Sex Research, 48*(2-3), 218-253.

Nardi, P. M. (2000). *Gay masculinities* (Vol. 13). Thousand Oaks, CA: Sage Publications.

National AIDS Trust (2010). *Partnership patterns and HIV prevention amongst men who have sex with men (MSM)*. London: Author. Retrieved February 15, 2015 from http://www.nat.org.uk/media/Files/Publications/July-2010-Parternship-Patterns-and-HIV-Prevention.pdf

National Institutes of Health. (2003). Contextual influences on sexual risk among Latino MSM: 1R01HD046258-01. *Project Information.* Retrieved April 28, 2015 from http://projectreporter.nih.gov/project_info_description.cfm?aid=6696177&icde=24417849

National Institute of Mental Health. (2015). Psychotherapies. *Health and Education.* Retrieved April 30, 2015 from http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml

Noar, S. M., Cole, C., & Carlyle, K. (2006). Condom use measurement in 56 studies of

sexual risk behavior: review and recommendations. *Archives of Sexual Behavior, 35*(3), 327-345.

Noar, S. M. (2007). An interventionist's guide to AIDS behavioral theories. *AIDS Care, 19*(3), 392-402. doi:10.1080/09540120600708469

Obama, B. (2013). HIV care continuum initiative. *Executive Order.* Retrieved March 20, 2915 from https://www.whitehouse.gov/the-press-office/2013/07/15/executive-order-hiv-care-continuum-initiative

O'Donnell, L., Agronick, G., San Doval, A., Duran, R., Myint-U, A., & Stueve, A. (2002). Ethnic and gay community attachments and sexual risk behaviors among urban Latino young men who have sex with men. *AIDS Education & Prevention, 14*(6), 457-471.

O'Donnell, C. R., O'Donnell, L., San Doval, A., Duran, R., & Labes, K. (1998). Reductions in STD infections subsequent to an STD clinic visit: Using video-based patient education to supplement provider interactions. *Sexually Transmitted Diseases*, 25, 161-168.

O'Donnell, L., Stueve, A., Joseph, H. A., & Flores, S. (2014). Adapting the VOICES HIV behavioral intervention for Latino Men Who Have Sex with Men. *AIDS and Behavior, 18*(4), 767-775.

Organista, K. C. (2012). *HIV prevention with Latinos: Theory, research, and practice*. New York, NY: Oxford University Press.

Orlando, M., Burnam, M. A., Beckman, R., Morton, S. C., London, A. S., Bing, E. G., & Fleishman, J. A. (2002). Re-estimating the prevalence of psychiatric disorders in a nationally representative sample of persons receiving care for HIV: results from

the HIV cost and services utilization study. *International journal of methods in psychiatric research, 11*(2), 75-82.

Orlans, V., & Van Scoyoc, S. (2008). *A short introduction to counselling psychology*. Thousand Oaks, CA: SAGE Publications Ltd.

Oursler, K. K., Goulet, J. L., Leaf, D. A., Akingicil, A., Katzel, L. I., Justice, A., & Crystal, S. (2006). Association of comorbidity with physical disability in older HIV-infected adults. *AIDS Patient Care & STDs, 20*(11), 782-791.

Palella, F., Jr., Delaney, K., Moorman, A, Loveless, M., Fuhrer, J., Satten, G.A., Aschman, D.J., & Holmberg, S.D. (1998). Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. HIV outpatient study investigators. *New England Journal of Medicine, 338*(13), 853-860.

Parker, A. M., & Fischhoff, B. (2005). Decision-making competence: External validation through an individual-differences approach. *Journal of Behavioral Decision Making*, *18*(1), 1-27.

Patel, P., Borkowf, C. B., Brooks, J. T., Lasry, A., Lansky, A., & Mermin, J. (2014). Estimating per-act HIV transmission risk: a systematic review. *AIDSs*, *28*(10), 1509-1519.

Pedersen, P. B. (1991). Multiculturalism as a generic approach to counseling. *Journal of Counseling & Development*, *70*(1), 6-12.

Pence, B. W., Miller, W. C., Whetten, K., Eron, J. J., & Gaynes, B. N. (2006). Prevalence of DSM-IV-defined mood, anxiety, and substance use disorders in an HIV clinic in the Southeastern United States. *JAIDS Journal of Acquired Immune Deficiency*

Syndromes, *42*(3), 298-306.

Persson, A. (2005). Facing HIV: Body shape change and the (in)visibility of illness. *Medical Anthropology*, *24*(3), 237-264. doi:10.1080/01459740500182683

Pollock, J. A., & Halkitis, P. N. (2009). Environmental factors in relation to unprotected sexual behavior among gay, bisexual, and other MSM. *AIDS Education & Prevention*, *21*(4), 340-355.

Poppen, P. J., Reisen, C. A., Zea, M. C., Bianchi, F. T., & Echeverry, J. J. (2004). Predictors of unprotected anal intercourse among HIV-positive Latino gay and bisexual men. *AIDS and Behavior*, *8*(4), 379-389.

Poppen, P. J., Reisen, C. A., Zea, M., Bianchi, F. T., & Echeverry, J. J. (2005). Serostatus disclosure, seroconcordance, partner relationship, and unprotected anal intercourse among HIV-positive Latino men who have sex with men. *AIDS Education & Prevention*, *17*(3), 227-237.

Poundstone, K. E., Strathdee, S. A., & Celentano, D. D. (2004). The social epidemiology of Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome. *Epidemiologic Reviews*, *26*, 22-35.

Prejean, J., Ruiguang, S., Hernandez, A., Ziebell, R., Green, T., Walker, F., & ... Hall, H. I. (2011). Estimated HIV Incidence in the United States, 2006-2009. *Plos ONE*, *6*(8), 1-13. doi:10.1371/journal.pone.0017502

Pucak, M.L., & Kaplin, A.I. (2005). Unkind cytokines: Current evidence for the potential role of cytokines in immune-mediated depression. *International Review of Psychiatry*, *17*(6), 477-483. doi:10.1080/02646830500381757

Puro, V., De Carli, G., Piselli, P., Sciarrone, M. R., Schifano, E., Pittalis, S., & Ippolito,

G. (2012). HIV incidence among men who have sex with men prescribed postexposure prophylaxis. *AIDS, 26*(12), 1581-1583.

Raudenbush, S.W., & Bryk, A.S. (2002). *Hierarchical linear models: Applications and data analysis methods* (Vol. 1). London, England: Sage.

Raudenbush, S. W., Bryk, A. S., & Congdon, R. (2004). HLM 6 for Windows [Software]. *Lincolnwood, IL: Scientific Software International*.

Reich, J. (2004). *Beyond the Latin lover: Marcello Mastroianni, masculinity, and Italian cinema*. Bloomington, IN: Indiana University Press.

Reisen, C. A., Zea, M. C., Bianchi, F. T., & Poppen, P. J. (2011). Characteristics of Latino MSM who have sex in public settings. *AIDS Care, 23*(4), 456-459.

Reisen, C. A., Zea, M. C., Poppen, P. J., & Bianchi, F. T. (2008). Male circumcision and HIV status among Latino immigrant MSM in New York City. *Journal of LGBT Health Research, 3*(4), 29-36.

Regan, P. C., Medina, R., & Joshi, A. (2001). Partner preferences among homosexual men and women: What is desirable in a sex partner is not necessarily desirable in a romantic partner. *Social Behavior and Personality: An International Journal, 29*(7), 625-633.

Remien, R. H. & Mellins, C. A. (2007). Long-term psychosocial challenges for people living with HIV: Let's not forget the individual in our global response to the pandemic *AIDS, 21*(SUPP/5), S55-S64.

Reyna, V. F. (2008). A theory of medical decision making and health: Fuzzy trace theory. *Medical Decision Making, 28*(6), 850-865.

Rhodes, S.D., & McCoy, T.P. (2015) Condom use among immigrant Latino sexual

minorities: Multilevel analysis after respondent-driven sampling. *AIDS Education and Prevention 27* (1), 27-43.

Rhodes, S. D., Hergenrather, K. C., Duncan, J., Ramsey, B., Yee, L. J., & Wilkin, A. M. (2007). Using community-based participatory research to develop a chat room-based HIV prevention intervention for gay men. *Progress in Community Health Partnerships: Research, Education, and Action, 1*(2), 175-184.

Rhodes, S. D., Hergenrather, K. C., Duncan, J., Vissman, A. T., Miller, C., Wilkin, A. M., ... & Eng, E. (2010a). A pilot intervention utilizing Internet chat rooms to prevent HIV risk behaviors among men who have sex with men. *Public Health Reports, 125*(Suppl 1), 29-37.

Rhodes, S. D., Hergenrather, K. C., Montaño, J., Remnitz, I. M., Arceo, R., Bloom, F. R., ... & Bowden, W. P. (2006a). Using community-based participatory research to develop an intervention to reduce HIV and STD infections among Latino men. *AIDS Education & Prevention, 18*(5), 375-389.

Rhodes, S. D., Hergenrather, K., Vissman, A., Stowers, J., Davis, A., Hannah, A., ... & Marsiglia, F. (2011). Boys must be men, and men must have sex with women: A qualitative CBPR study to explore sexual risk among African American, Latino, and white gay men and MSM. *American Journal of Men's Health, 5*(2), 140-151.

Rhodes, S.D., Hergenrather, K.C., Wilkin, A.M., & Wooldredge, R. (2009). HIV and adherence: A lifetime commitment. In S. Shumaker, J. Ockene, & K. Riekert (Eds.) *The Handbook of Health Behavior Change* (pp. 659-675). New York, NY: Springer Publishing, Inc.

Rhodes, S. D., Hergenrather, K. C., Wilkin, A., Alegría-Ortega, J., & Montaño, J.

(2006b). Preventing HIV infection among young immigrant Latino men: Results from focus groups using community-based participatory research. *Journal of the National Medical Association, 98*(4), 564-574.

Rhodes, S. D., Malow, R. M., & Jolly, C. (2010b). Community-based participatory research (CBPR): A new and not-so-new approach to HIV/AIDS prevention, care, and treatment. *AIDS Education and Prevention, 22*(3), 173-183.

Rintamaki, L. S., Davis, T. C., Skripkauskas, S., Bennett, C. L., & Wolf, M. S. (2006). Social stigma concerns and HIV medication adherence. *AIDS Patient Care & STDs, 20*(5), 359-368.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin, 27*(2), 151-161.

Robinson, B. E., Bockting, W. O., Rosser, B. 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.

Ross, M. W., Rosser, B. S., Neumaier, E. R., & Positive Connections Team. (2008). The relationship of internalized homonegativity to unsafe sexual behavior in HIV seropositive men who have sex with men. *AIDS education and prevention: official publication of the International Society for AIDS Education, 20*(6), 547-557.

Rotheram-Borus, M. J., Swendeman, D., Flannery, D., Rice, E., Adamson, D. M., & Ingram, B. (2009). Common factors in effective HIV prevention programs. *AIDS and Behavior, 13*(3), 399-408.

Rubak, S., Sandbæk, A., Lauritzen, T., & Christensen, B. (2005). Motivational interviewing: a systematic review and meta-analysis. *British Journal of General Practice*, *55*(513), 305-312.

Russell, E. B. (2012). Sexual health attitudes, knowledge, and clinical behaviors implications for counseling. *The Family Journal*, *20*(1), 94-101.

Rust, P. C. (2000). Bisexuality in HIV research. In P. C. Rust (Ed.), *Bisexuality in the United States* (pp. 356–399). New York, NY: University Press.

Savage, M., Dumas, A., & Stuart, S. A. (2013). Fatalism and short-termism as cultural barriers to cardiac rehabilitation among underprivileged men. *Sociology of Health & Illness*, *35*(8), 1211-1226.

Scott-Sheldon, L. A., Huedo-Medina, T. B., Warren, M. R., Johnson, B. T., & Carey, M. P. (2011). Efficacy of behavioral interventions to increase condom use and reduce sexually transmitted infections: A meta-analysis, 1991 to 2010. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *58*(5), 489-498.

Seal, D. W., Kelly, J. A., Bloom, F. R., Stevenson, L. Y., Coley, B. I., Broyles, L. A., & Medical College of Wisconsin CITY Project Research Team. (2000). HIV prevention with young men who have sex with men: What young men themselves say is needed. *AIDS care*, *12*(1), 5-26.

Shuper, P. A., & Fisher, W. A. (2008). The role of sexual arousal and sexual partner characteristics in HIV+ MSM's intentions to engage in unprotected sexual intercourse. *Health Psychology*, *27*(4), 445-454. doi:10.1037/0278-6133.27.4.445

Sheth, P., & Thorndycraft, B. (2009). HIV transmission: An overview. *CATIE.* Retrieved March 3, 2015 from http://www.catie.ca/en/fact-sheets/prevention/hiv-

transmission-overview

Shelton, A. J., Atkinson, J., Risser, J. M. H., McCurdy, S. A., Useche, B., & Padgett, P. M. (2006). The prevalence of suicidal behaviours in a group of HIV-positive men. *AIDS Care*, *18*(6), 574-576.

Shuper, P. A., Joharchi, N., & Rehm, J. (2014). Personality as a predictor of unprotected sexual behavior among people living with HIV/AIDS: a systematic review. *AIDS and Behavior*, *18*(2), 398-410.

Simons, J. S., & Carey, M. P. (2001). Prevalence of sexual dysfunctions: results from a decade of research. *Archives of Sexual Behavior*, *30*(2), 177-219.

Smith, D. K., Herbst, J. H., Zhang, X., & Rose, C. E. (2015). Condom effectiveness for HIV prevention by consistency of use among men who have sex with men in the United States. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *68*(3), 337-344.

Smith, S., Rublein, J., Marcus, C., Brock, T., & Chesney, M. (2003). A medication self-management program to improve adherence to HIV therapy regimens. *Patient Education & Counseling*, *50*(2), 187-199.

Smith, J. P., Tran, G. Q., & Thompson, R. D. (2008). Can the theory of planned behavior help explain men's psychological help-seeking? Evidence for a mediation effect and clinical implications. *Psychology of Men & Masculinity*, *9*(3), 179-192.

Smith, R. & Vazquez, E. (2010, March/April). Headache, and nausea, and fatigue: Oh, my! *The Body: The Complete HIV/AIDS Resource.* Retrieved December 13, 2012 from http://www.thebody.com/content/1210/headache-and-nausea-and-fatigue-oh-my.html

Stadler, H. A., Suh, S., Cobia, D. C., Middleton, R. A., & Carney, J. S. (2006). Reimagining counselor education with diversity as a core value. *Counselor Education and Supervision*, *45*(3), 193-206.

Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences*. New York, NY: Routledge.

Sullivan, P. S., & Dworkin, M. S. (2003). Prevalence and correlates of fatigue among persons with HIV infection. *Journal of Pain and Symptom Management*, *25*(4), 329-333. doi:10.1016/S0885-3924(02)00676-0

Tanzer, N. K. (2005). Developing tests for use in multiple languages and cultures: A plea for simultaneous development. In R.K. Hambleton, P.F. Merenda, & C.D. Spielberger (Eds.) *Adapting educational and psychological tests for cross-cultural assessment* (235-263) Mahwah, NJ: Lawrence Erlbaum Associates.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education, 2*, 53-55.

Teng, Y., & Mak, W. W. (2011). The role of planning and self-efficacy in condom use among men who have sex with men: an application of the Health Action Process Approach model. *Health Psychology*, *30*(1), 119-128.

Thing, J. (2010). Gay, Mexican and immigrant: Intersecting identities among gay men in Los Angeles. *Social Identities*, *16*(6), 809-831.

Timm, T. M. (2009). “Do I Really Have to Talk About Sex?” Encouraging beginning therapists to integrate sexuality into couples therapy. *Journal of Couple & Relationship Therapy*, *8*(1), 15-33.

Tramarin, A., Parise, N., Campostrini, S., Yin, D. D., Postma, M. J., Lyu, R., & ...

Starace, F. (2004). Association between diarrhea and quality of life in HIV-infected patients receiving highly active antiretroviral therapy. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation*, *13*(1), 243-250. doi:10.1023/B:QURE.0000015282.24774.36

United States Department of Health and Human Services. (2015a). HIV/AIDS basics. *AIDS.org*. Retrieved February 15, 2015 from http://aids.gov/hiv-aids-basics/

United States Department of Health and Human Services. (2015b). About the Ryan White HIV/AIDS Program. *HIV/AIDS Programs.* Retrieved June 1, 2015 from http://hab.hrsa.gov/abouthab/aboutprogram.html

United States Department of Veterans Affairs. (2015). Are there long-term effects? *HIV/AIDS.* Retrieved March 3, 2015 from http://www.hiv.va.gov/patient/basics/long-term-effects.asp

van Kesteren, N. C., Hospers, H. J., van Empelen, P., van Breukelen, G., & Kok, G. (2007). Sexual decision-making in HIV-positive men who have sex with men: How moral concerns and sexual motives guide intended condom use with steady and casual sex partners. *Archives of Sexual Behavior*, *36*(3), 437-449. doi:10.1007/s10508-006-9125-4

Van Sevenant, A. (2005). *Sexual outercourse: Philosophy of lovemaking*. Leuven Belgium: Peeters Publishing.

Varghese, B., Maher, J. E., Peterman, T. A., Branson, B. M., & Steketee, R. W. (2002). Reducing the risk of sexual HIV transmission: quantifying the per-act risk for HIV on the basis of choice of partner, sex act, and condom use. *Sexually Transmitted Diseases*, *29*(1), 38-43.

Varangis, E., Lanzieri, N., Hildebrandt, T., & Feldman, M. (2012). Gay male attraction toward muscular men: does mating context matter?. *Body Image*, *9*(2), 270-278.

Vissman, A. T., Hergenrather, K. C., Rojas, G., Langdon, S. E., Wilkin, A. M., & Rhodes, S. D. (2011). Applying the theory of planned behavior to explore HAART adherence among HIV-positive immigrant Latinos: Elicitation interview results. *Patient Education and Counseling*, *85*(3), 454-460.

Volberding, P.A., Bartlett, J.G., Del Rio, C., Flynn, P.M., Gant, L.M., Grant, I., & … Williams, A.B. (2010). *HIV and disability: Updating the social security listings.* Washington, DC: The National Academies Press.

von Sadovszky, V., Draudt, B., & Boch, S. (2014). A systematic review of reviews of behavioral interventions to promote condom use. *Worldviews on Evidence-Based Nursing*, *11*(2), 107-117. doi:10.1111/wvn.12017

Warren, J. C., Fernández, M. I., Harper, G. W., Hidalgo, M. A., Jamil, O. B., & Torres, R. S. (2008). Predictors of unprotected sex among young sexually active African American, Hispanic, and White MSM: The importance of ethnicity and culture. *AIDS and Behavior*, *12*(3), 459-468.

Wei, C., & Raymond, H. (2011). Preference for and maintenance of anal sex roles among men who have sex with men: Sociodemographic and behavioral correlates. *Archives of Sexual Behavior*, *40*(4), 829-834. doi:10.1007/s10508-010-9623-2

White, J. M., Gordon, J. R., & Mimiaga, M. J. (2014). The role of substance use and mental health problems in medication adherence among HIV-infected MSM. *LGBT Health, 1*(4), 319-322.

Whitlock, E. P., Orleans, C. T., Pender, N., & Allan, J. (2002). Evaluating primary care

behavioral counseling interventions: An evidence-based approach. *American Journal of Preventive Medicine*, *22*(4), 267-284.

Wholey, J. S., Hatry, H. P., & Newcomer, K. E. (2010). *Handbook of practical program evaluation* (Vol. 19). San Francisco, CA: John Wiley & Sons.

Widman, L., Golin, C. E., Grodensky, C. A., & Suchindran, C. (2013). Do safer sex self-efficacy, attitudes toward condoms, and HIV transmission risk beliefs differ among men who have sex with men, heterosexual men, and women living with HIV?. *AIDS and Behavior*, *17*(5), 1873-1882.

Williams, B., Brown, T., & Onsman, A. (2012). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, *8*(3), 1-13.

Wilson, P. A., Díaz, R. M., Yoshikawa, H., & Shrout, P. E. (2009). Drug use, interpersonal attraction, and communication: Situational factors as predictors of episodes of unprotected anal intercourse among Latino gay men. *AIDS and Behavior*, *13*(4), 691-699.

Wilton, L., Herbst, J. H., Coury-Doniger, P., Painter, T. M., English, G., Alvarez, M. E., ... & Carey, J. W. (2009). Efficacy of an HIV/STI prevention intervention for black men who have sex with men: findings from the Many Men, Many Voices (3MV) project. *AIDS and Behavior*, *13*(3), 532-544.

W. K. Kellogg Foundation. (2001). W. K. Kellogg Foundation logic model development guide. Retrieved September 8, 2015 from http://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide

Wolitski, R. J., Jones, K. T., Wasserman, J. L., & Smith, J. C. (2006). Self-identification

as “down low” among men who have sex with men (MSM) from 12 US cities. *AIDS and Behavior*, *10*(5), 519-529.

Woltman, H., Feldstain, A., MacKay, J. C., & Rocchi, M. (2012). An introduction to hierarchical linear modeling. *Tutorials in Quantitative Methods for Psychology*, *8*(1), 52-69.

Wolitski, R. J., Flores, S. A., O’Leary, A., Bimbi, D. S., & Gomez, C. A. (2007). Beliefs about personal and partner responsibility among HIV-seropositive men who have sex with men: measurement and association with transmission risk behavior. *AIDS and Behavior*, *11*(5), 676-686.

Woolf, S. E., & Maisto, S. A. (2009). Alcohol use and risk of HIV infection among men who have sex with men. *AIDS and Behavior*, *13*(4), 757-782.

Wright, C. (2015). Update on HIV pre-exposure prophylaxis. *Journal of Pharmacy Practice and Research*, *45*(1), 124-124.

World AIDS Day. (2015). What is World AIDS Day?. *About World AIDS Day*. Retrieved March 7, 2015 from http://www.worldaidsday.org/

Young, M. E. (2013). *Learning the art of helping: Building blocks and techniques*. Upper Saddle River, NJ: Pearson.

Yznaga, S. D. (2008). Using the genogram to facilitate the intercultural competence of Mexican immigrants. *The Family Journal*, *16*(2), 159-165.

Zablotska, I. B., Imrie, J., Prestage, G., Crawford, J., Rawstorne, P., Grulich, A., & ... Kippax, S. (2009). Gay men's current practice of HIV seroconcordant unprotected anal intercourse: Serosorting or seroguessing?. *AIDS Care*, *21*(4), 501-510. doi:10.1080/09540120802270292

Zea, M. C., Asner-Self, K. K., Birman, D., & Buki, L. P. (2003a). The Abbreviated Multidimentional Acculturation Scale: Empirical validation with two Latino/Latina samples. *Cultural Diversity and Ethnic Minority Psychology, 9*(2), 107.

Zea, M. C., Reisen, C. A., & Díaz, R. M. (2003b). Methodological issues in research on sexual behavior with Latino gay and bisexual men. *American Journal of Community Psychology, 31*(3), 281-291.

Zea, M. C., Reisen, C. A., Poppen, P. J., & Bianchi, F. T. (2009). Unprotected anal intercourse among immigrant Latino MSM: The role of characteristics of the person and the sexual encounter. *AIDS and Behavior, 13*(4), 700-715.

Zeglin, R.J. (2015). Assessing the role of masculinity in the transmission of HIV: A systematic review to inform HIV risk reduction counseling interventions for MSM. *Archives of Sexual Behavior, 44*(7), 1979-1990. doi: 10.1007/s10508-015-0501-9

Zeglin, R. J., & Mitchell, J. (2014). Using Social Media to Assess Conceptualizations of Sexuality. *American Journal of Sexuality Education, 9*(3), 276-291.

Zeglin, R. J., & Stein, J. P. (2015). Social determinants of health predict state incidence of HIV and AIDS: A short report. *AIDS Care, 27*(2), 255-259.

Zuckerman, R. A., Whittington, W. L., Celum, C. L., Collis, T. K., Lucchetti, A. J., Sanchez, J. L., ... & Coombs, R. W. (2004). Higher concentration of HIV RNA in rectal mucosa secretions than in blood and seminal plasma, among men who have sex with men, independent of antiretroviral therapy. *Journal of Infectious Diseases, 190*(1), 156-161.