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Cultural Correlates of Condom Use

Cecilia Brooke Cholka
University of Texas at El Paso, cbcholka@gmail.com

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CECILIA BROOKE CHOLKA

Department of Psychology

APPROVED:

Theodore V. Cooper, Ph.D., Chair

Harmon Hosch, Ph.D.

Brenda Risch, Ph.D.

John Wiebe, Ph.D.

Benjamin C. Flores, Ph.D.
Interim Dean of the Graduate School

Dedication

This thesis is dedicated to my family for all the support they have given me throughout my studies and my life. I am especially thankful to Todd for helping me cope and generally taking care of me though all of my pursuits. I am also thankful to my parents for their undying love and support in every aspect of my life and for being the foundation of my dreams and goals.

This thesis is also dedicated to my mentor, Theodore V. Cooper, whose guidance has been invaluable. I will always be appreciative and grateful for having the opportunity to work with and learn from him.

CULTURAL CORRELATES OF CONDOM USE

by

CECILIA BROOKE CHOLKA, B. A.

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Abstract

Hispanics are disproportionately contracting sexually transmitted infections relative to other ethnic groups. This study assessed the relationships between condom usage, acculturation, and cultural values (i.e., familismo, religiosity, machismo, and marianismo) in a Hispanic college student sample. Participants (N = 456) were recruited through Sona Systems, flyers, and in highly frequented areas on campus. After informed consent was obtained, participants completed measures of Hispanic cultural values, past condom use, and future intentions to use condoms. Hierarchical regression analyses were performed; dependent variables included condom use (lifetime) and future intentions to use condoms, while independent variables include sex/gender and relationship status (step 1), cultural variables (step 2), and sex/gender by cultural variable interactions (step 3). Results indicated that lifetime condom use was reported to be inconsistent. Participants who were male and in a relationship reported lower levels of condom use. Females with higher levels of marianismo reported greater condom use, while males with higher levels of marianismo reported lower levels of condom use. Implications include the need for prevention and intervention efforts, the targeting of couples and men (particularly those with higher levels of marianismo). Future research efforts may wish to include other cultural and psychosocial constructs, while future clinical efforts should assess the efficacy of assertiveness and sexual communication training in increasing condom use and reducing sexual risk.

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Introduction

Hispanics and college students are contracting sexually transmitted infections (STI) at an alarming rate (Centers for Disease Control [CDC], 2009). Rates of chlamydia, gonorrhea, and syphilis have steadily risen for Hispanics, and relative to non-Hispanic Whites, Hispanics have higher rates of chlamydia, gonorrhea, and syphilis (2.9 times higher, 2.2 times higher, and 2.1 times higher respectively [CDC, 2009]). The extensive spread of STIs is a concern for public health, especially as once a person adopts risky sex behaviors, these behaviors usually persist from one year to the next and potentially he or she does not change risky behaviors even after having been infected (Caldeira et al., 2009). Understanding the effect of culture on condom use is important and necessary not only because Hispanics are overrepresented in the number of STIs reported but also because the influence of cultural factors on this health disparity is not clearly understood (Kim, de la Rosa, Trepka, & Kelley, 2007; Villarruel, Jemmott, Jemmott, & Ronis 2007).

1.1 Condoms and STIs

Condom usage, especially consistent condom usage, is associated with lower risk of contracting STIs (Chesson & Gift, 2000). Knowledge of condom use and prevention of STIs may not be sufficient to decrease sexual risk; other factors may play a role. There is a need to intervene to increase condom use to prevent STIs in particular because as O'Sullivan, Udell, Montrose, Antoniello, and Hoffman (2010) reported, college students primarily viewed condoms as a means of preventing pregnancy and that few reported disease prevention as a primary motivation for their use.

1.2 College Student Condom Use

Young adults make up half of the new cases of reportable STIs in the United States (Weinstock, Berman, & Cates, 2004), and STI rates for this group appear to be increasing (CDC, 2009). Consistent condom usage is associated with reduced risk of contracting STIs (Chesson & Gift, 2000). Although young adults are knowledgeable about condom use and the prevention of STIs, a number of studies have found that less than 25% of sexually active young adults use condoms consistently (e.g., Andersson-Ellström & Milsom, 2002; East, Jackson, O'Brien, & Peters, 2007; O'Sullivan et al. 2010). Studies

examining sexual risk patterns of Hispanic college students have found conflicting results; some studies have noted that Hispanic college students are practicing safe sex (Kim et al., 2007). Other studies discovered that college students reported infrequent condom use during their last sexual contact with only slightly over one-quarter reporting using a condom at every instance of intercourse, and approximately 7% reporting never using a condom (Polacek, Hicks, & Oswalt, 2007). Also, among those who reported ever having vaginal sex, the percentage of students who reported condom use during their last sexual encounter was 8% (oral), 35% (anal), and 50% (vaginal; Kim et al., 2007). These low rates of condom use were not related to engaging in other risk behaviors such as smoking, heavy alcohol consumption, and marijuana use (Kim et al., 2007). O'Sullivan et al. (2010) found that college students engage in high levels of unprotected sexual activity despite relatively high rates of HIV/STI and pregnancy-related knowledge with less than a quarter of sexually active college students interviewed reporting using condoms or oral contraceptives consistently.

1.3 Ethnicity and Condom Use

Past research suggests that each ethnic group membership influences sexual behavioral pattern with varying levels of sexual risk. Espinosa-Hernández and Lefkowitz (2009) examined lifetime sexual risk in Black, Hispanic, and non-Hispanic White college students and noted that Hispanics reported riskier condom-related behaviors and attitudes and that non-Hispanic Whites were less fearful of AIDS. Ethnicity and neighborhood composition have also been found to influence sexual behavior in teens (Upchurch, Aneshensel, Mudgal, & McNeely, 2001). Additionally, cultural norms and beliefs have been shown to influence condom use and condom negotiation strategies (Tschann, Flores, de Groat, Deardorff, &Wibbelsman, 2010). Kim and colleagues (2007) compared risky sexual behaviors in unmarried Hispanic and non-Hispanic college students and found that compared with non–Hispanic White students, Hispanic students were practicing safer sex by using a condom, even under the influence of alcohol, but were less likely to have been tested for HIV infection.

Manlove, Ikramullah, and Terry-Humen (2008) examined sexually experienced male adolescents (15–19 years old) to identify factors associated with condom use in multiple sexual situations and found that male adolescents who were Hispanic and those who did not receive formal sex education had lower odds of condom use and/or consistency, whereas Black male adolescents and those with more positive attitudes about condoms had greater odds of condom use. Previously observed differences among Hispanics and other ethnocultural groups suggest the need for more assessment of Hispanics to better understand sexually risky behaviors that may influence STI infection rates.

1.4 Cultural Values and Condom Use

Some empirically derived cultural values that may influence sexual behavior and condom use of Hispanic colleges students include familismo, religiosity, machismo, and marianismo. Familismo, a Hispanic cultural construct that includes importance of one's family includes unity and trust with the family as the central focus (Marín, 1989). Familismo has been studied in relationship to HIV/AIDS interventions (Benavides, Bonazzo, & Torres, 2006) as well as condom use (Villarruel et al., 2007). Kim et al. (2007) found that the role of parental involvement is an important factor underlying the prevention of problem behaviors and that more than half of the Hispanic students in their study reported living with parents/guardians compared to less than a third of non–Hispanic White students. This suggests the need to assess the role of family in predicting condom use, particularly in Hispanics.

Religiosity, particularly the role that religion plays on secular life decisions (Rohrbaugh & Jessor, 1975), may have an impact on condom use. Religiosity has been found to be a protective factor, but may also be a risk factor regarding condom use. Villarruel and colleagues (2007) assessed the relationship between cultural values (e.g., religiosity) and condom use among Hispanic adolescents (mean age = 15 years) who reported having had sex. The sample demonstrated moderate levels (i.e., M = 2.72/5; SD = .97) of religiosity, conceptualized as religious affiliation and practice. Stronger religious affiliation was found to be positively associated with condom use in the past 3 months (Villarruel et al., 2007). The authors did not make assertions about the protective aspects of religiosity on condom use,

and likely the relationships between religious affiliation and practice, sexual activity, safe sex practices, and condom use are nuanced and complex. Thus, it is important to further study this relationship to assess how religiosity may be associated with increased condom use. Conversely, there is a common notion, although not empirically verified, that religiosity can lead to the fatalistic notion that events in one's life result from factors beyond one's control (Davis & Voegtle, 1994). Lescano, Brown, Raffaelli, & Lima (2009) posited that this belief may negatively impact condom use as efforts to protect oneself from HIV are perceived to be in vain. Additionally, some religious beliefs are inconsistent with condom use.

Machismo and marianismo are Hispanic gender roles and inform how men and women should behave. These values have been viewed as influencing reduced condom use and negative attitudes toward condom use (Deardorff, Tschann, Flores, & Ozer, 2010). Machismo is a hyper-masculine role that involves male superiority and dominance over women (Castro, 2012). A study by VanOss Marín, Gómez, Tschann, and Gregorich (1997) assessed the relationship between cultural factors and condom use in 594 unmarried Hispanic males who reported having sex in the past year. Participants were interviewed in English or Spanish and men with those who held more traditional gender-role beliefs reporting less condom use relative to those with less traditional beliefs (VanOss et al., 1997). Locke, Newcomb, and Goodyear (2005) assessed the relationship of micro-system (e.g., age at first intercourse) and macro-system (e.g., traditional gender roles) domains to behaviors related to HIV risk in young Latino males and found that adherence to traditional gender roles was related to more frequent intercourse and less frequent condom use. Marianismo is a hyper-feminine role that involves women being virtuous, humble, and less willing to discuss sex or contraception (Castillo, Perez, Castillo, & Ghosheh, 2010). Deardorff and colleagues (2010) assessed a sample of 839 Latino men and women to examine the relationships between aspects of marianismo, specifically importance of female virginity and comfort with sexual communication, and multiple sexual behaviors including number of partners

and frequency of condom use during the first and last month of the current sexual relationship. Results from the study indicated that the more a person placed value on female virginity, the fewer partners reported. Also, those with greater comfort with sexual communication were more likely to report never (as opposed to always) using condoms in the past 30 days (Deardorff et al., 2010). Authors suggest that the effect of comfort with sexual communication on condom use may be related to the ability to persuade a partner not to use condoms (Deardorff et al., 2010). The results regarding sexual communication, the lack of which may be a meaningful aspect of marianismo-related beliefs, attitudes, and behaviors, may suggest marianismo as a protective factor against sexual risk. These studies demonstrate that culture-related aspects such as adhering to traditional gender-role beliefs may have a relationship with condom use, and there is limited research that examines the relationship between cultural values and condom use, especially in Hispanic groups. Discovering significant relationships between familismo, religiosity, machismo, marianismo and condom use can inform culturally appropriate interventions that may reduce the proportion of Hispanics contracting STIs.

1.5 Acculturation

As conceptualized by Berry (2003), acculturation is the process of cultural and psychological change that follows intercultural contact. Acculturation is important for research as it allows the ability to assess differential group experiences associated with the intersection of two cultures, as well as social and cultural change that occurs as people adapt to a new culture (Berry, 2003). Research has demonstrated that differential health outcomes have been associated with acculturation, and much of this past research has focused on risky behaviors. For example, Borges and colleagues (2011) found that when assessing drug and alcohol use in current Mexican immigrants and US-born Mexican Americans, current Mexican immigrants were found to be at lower risk for drug use and drug disorders than US-born Mexican-Americans. However, Blume, Resor, Villanueva, and Braddy (2009) found that neither acculturation nor years lived in the U.S. were significantly associated with alcohol use disorders. These

findings may suggest a complex relationship between acculturation and risk behaviors such as drug and alcohol use. In addition to the relationship of acculturation and nationality, Caetano, Vaeth, and Rodriguez (2012) found that the effect of acculturation on social problems was moderated by gender, with higher acculturated women reporting more problems.

Acculturation also has a complex relationship with condom use and safer sex behaviors. Rojas-Guyler, Ellis, and Sanders (2005) examined the relationship between acculturation, health protective sexual communication, and HIV/AIDS risk behaviors of 298 Hispanic women ranging in age from 18 and 60 (mean age = 29.5 years) attending a Hispanic center that offers social, medical, and legal services in a Midwestern city. Lower acculturated Hispanic women reported less risky sexual behaviors related to fewer partners in the past year, but higher risk due to lower levels of sexual communication (Rojas-Guyler et al., 2005). Hispanic women with higher acculturation levels, however, may be at higher risk due to more partners, but have lower risk because of more health protective sexual communication (Rojas-Guyler et al., 2005). Lee and Hahm (2010) assessed the longitudinal association between Latina adolescents' levels of acculturation and multiple sexual risk outcomes (e.g., self-report STD diagnosis and lack of condom use during young adulthood) using data from 1,073 Latinas who participated in the National Longitudinal Study of Adolescent Health. U.S.-born and foreign-born Latinas from English-speaking homes were more likely to have a history of self-reported STD diagnosis and to exhibit sexual risk behaviors than foreign-born Latinas who did not speak English at home (Lee & Hahm, 2010). Interestingly, Latinas who were foreign-born and spoke English at home had the highest odds of risky sexual outcomes, including self-reported STD diagnosis, four or more lifetime sexual partners, and regret of sexual initiation after drinking (Lee & Hahm, 2010). These studies demonstrate the complex association of acculturation and risky sexual behaviors, particularly condom use, and as such warrant further study.

1.6 Gender and Condom Use

Gender differences in condom use have also been examined. Caldeira and colleagues (2009) examined longitudinally the health behaviors among college students and found that among first-year sexually active female students, nearly half had sex without condoms, one third had sex with multiple partners, and a majority had sex under the influence of alcohol or other drugs. Females have been found to be significantly more likely than males to report that they did not use a condom during their last sexual act, as well as report inconsistent condom use during sex in the last 30 days (Adefuye, Abiona, Balogun, & Lukobo-Durrell, 2009). Despite high intentions to use condoms, multi-ethnic college women reported inconsistent condom use; for example, young women who used hormonal birth control methods reported frequently not using condoms during sexual activity (Roberts & Kennedy, 2006). Given likely gender differences in condom use behaviors, as well as limited information as to the relationships between gender, ethnicity, and condom use, potential gender differences within Hispanic college students warrant exploration.

1.7 Aims and Hypotheses

This study seeks to assess the relationships between condom usage, acculturation, and cultural values (i.e., familismo, religiosity, machismo, and marianismo) in a Hispanic college student sample. It is expected that in predicting condom use, protective factors will include stronger beliefs in familismo, religiosity, and marianismo, and risk factors will include stronger beliefs in machismo and acculturation. Significantly related correlates can likely inform the development of theoretically- and empirically-derived culturally sensitive risk-reduction and safer sex behavior interventions for Hispanics.

Method

2.1 Participants

Four hundred fifty-six Hispanic college students were recruited from a University on the U.S. / México border. Inclusion criteria included being 18 years or older, self-identifying as Hispanic, and self-reporting having previously engaged in sexual intercourse. Students were recruited in person in highly frequented areas around campus, through advertisements, and through Sona Systems, an online human participants management program. If recruited through Sona Systems, participants were incentivized with experiment credit, a requirement for Introduction to Psychology courses, and if recruited in person or advertisements, were incentivized with a $10 gift card upon completion of survey materials and debriefing.

Empirically derived potential correlates to condom use have been examined previously; specifically, Villarruel et al. (2007) examined the cultural variables in addition to Theory of Planned Behavior constructs. Using a hierarchical regression, variability in condom use accounted for by religiosity was 6.25%. No other cultural variable was associated with condom use. For this study, a power analysis was conducted with $\alpha = .05$, and power = .80. An R^2 of .0625 translates to an $f^2 = .067$ (Villarruel et al., 2007). The resulting necessary sample size was 252 participants to detect an effect.

2.2 Measures

Participants completed assessments through Survey Monkey, an online survey software. They completed the following measures:

Demographic questionnaire: Participants completed information about age, sex/gender, level of education, marital status, ethnicity, campus organization membership, living arrangements, religious affiliation, smoking and drinking behaviors, relationship status and history, and past sexual experiences (See Appendix A).

The Klein Sexual Orientation Grid (Weinrich & Klein, 2002) was modified to assess a participant's sexual orientation and sexual identity. Participants were asked to whom they are sexually attracted and how they think of themselves and responded on a 1 (other sex/heterosexual only) to 7 (same sex/gay-lesbian only) scale. Responses helped categorize participants into one of five categories: Heterosexual, Bi-Heterosexual, Bi-Bisexual, Bi-Homosexual, and Homosexual (See Appendix B).

The Short Acculturation Scale for Hispanics (SASH) assesses the level of acculturation to U.S. culture (Marín, Sabogal, VanOss Marín, Otero-Sabogal, & Pérez-Stable, 1987). Mean item scores are used for purposes of analyses and can range from one (indicating less acculturation) to five (indicating greater acculturation). In this sample, this instrument was found to have high internal reliability ($\alpha = .92$; See Appendix C).

The Sexual Risk subscale of the HIV Risk-Taking Behavior Scale (HRBS; Darke, Hall, Heather, Ward, & Wodak, 1991) assesses behaviors that have been linked to contraction of HIV. Frequencies of behaviors are reported for the past three months, past year, and lifetime. Two additional questions were added to assess condom usage and oral sex, a frequently overlooked sexual risk topic. Participants respond to items on a scale from 0 – "safest sexual behavior" to 5 – "most risky sexual behavior." Sample items include: "How many people have you had sex with during the last 3 months?" "How often have you used condoms when having sex with your regular partner during your lifetime?" and "How many times have you had anal sex in your lifetime?" Item scores are summed, and total scores can range from 0 to 135, with higher scores indicating more sexual risk. For this study, a composite score specifically for the five condom use questions was summed with a range of 0 to 25 with higher levels indicating greater condom use. Lifetime condom use was used as a primary dependent variable. Internal reliability for this scale in this sample was .90 (See Appendix D).

A condom intention and use scale (Lechuga & Wiebe, 2009) assesses participant intentions to use condoms in the future. Participants are asked to read a scenario and answer questions as if they were

in the scenario. The scale consists of five items that assess intentions to use condoms, to insist on their use, and suggest their use to a partner. Participants respond on a Likert-type scale from 1 – very unlikely to 7 – very likely with a total score ranging from 5 to 35 with higher levels indicating more intention to use condoms. This scale demonstrated weak internal reliability in this sample (α = .52; See Appendix E).

The Latino/a Values Scale (Kim, Soliz, Orellana, & Alamilla, 2009) assesses cultural pride and familismo. This measure contains 35 items with scores ranging from 1 "strongly disagree" to 4 "strongly agree." Sample questions include "One does not need to follow one's cultural customs" and "One does not need to be loyal to one's cultural origin." For this study, only the five-item familismo subscale was used. Scores are summed and range from 5 to 20; higher scores indicate stronger beliefs in familismo. The familismo subscale demonstrated adequate internal consistency in this sample (α = .79; See Appendix F).

The Religiosity Measure (Rohrbaugh & Jessor, 1975) assesses the impact of religion on the respondent's daily secular life, as well as extent of participation in ritual practices. Four constructs are measured including: Ritual Religiosity, Consequential Religiosity, Theological Religiosity, and Experiential Religiosity. A discriminant validity analysis indicated that personal religious orientation was not associated with a particular religious group or social structure (Rohrbaugh & Jessor, 1975). The scale contains eight items, and scores are summed and range from 0 to 32 with higher scores indicating stronger beliefs in religiosity. This scale had strong internal reliability in this sample (α = .89; see Appendix G).

The Machismo Attitudes Scale (Castro, 2012) measures the positive and negative aspects of machismo. This scale presents questions such that a person regardless of sex responds with how he or she believes a man should behave. This scale contains 31 items and includes three subscales: Protecting Family, Expressing Emotions, and Male Privilege. Scores on these scales are summed and range from 31 to 155 with higher scores indicating stronger beliefs in machismo. Cronbach's coefficient alphas for

this sample were adequate (total score α = .71, Protecting family α = .84, Expressing Emotions α = .71, and Male Privilege α = .80; See Appendix H).

The Marianismo Beliefs Scale (Castillo, Perez, Castillo, & Ghosheh, 2010) measures the extent to which a participant, regardless of sex, believes a woman should behave consistently with values of marianismo. Participants respond on a 4-point scale, from strongly disagree (1) to strongly agree (4). This scale consists of five subscales, Family Pillar, Virtuous and Chaste, Subordinate to Others, Silencing Self to Maintain Harmony, and Spiritual Pillar. There are a total of 24 items for this scale, and items are averaged and range from 1 to 4 with higher scores indicating stronger beliefs in marianismo. Internal reliability for this scale in this sample was high (α = .90). Each of the subscales also demonstrated adequate internal reliability (Family Pillar α = .86, Virtuous and Chaste α = .82, Subordinate to Others α = .81, Silencing Self to Maintain Harmony α = .85, and Spiritual Pillar α = .90; see Appendix I).

2.3 Procedure

IRB approval was obtained for this study. Participant recruitment procedures included two modalities, online and in person. Online recruitment involved using Sona Systems, an online system that manages a human participants pool. In-person recruitment involved assembling computer stations in highly frequented areas on campus, (i.e., the Student Union, Library, El Paso Natural Gas Center, Fox Fine Arts Lounge) where the experimenters assessed willingness to participate. There was also reactive recruitment through flyers disseminated around campus as well as an ad in the campus newspaper. Researchers made every effort to approach every person in the area individually to inform them of the opportunity to participate. Potential participants were informed of the inclusion criteria and were told that if interested they could be screened and complete the study at the computer or could call and make an appointment to participate at a later time. Flyers and school publication advertisements were also

used. If potential participants called for more information, they were informed of the inclusion criteria and then offered to schedule an appointment.

Interested participants were screened via computer to reduce potential embarrassment related to the inclusion criteria (e.g., sexual intercourse history). Once participants were screened and eligible, the researcher directed participants to the online consent form and were available for questions as necessary. Online consent involved a two-phase process; participants were prompted to a link that has the consent form. Once the participant had read and understood the consent form, s/he indicated such by typing his or her name. Once this had been completed, participants were then prompted to another page that contained the measures. Before participants completed the survey, they indicated that they read and understood the consent form, but this time without attaching their names. This process allowed for any sensitive information to remain anonymous.

Eligible participants signed the online informed consent and completed the survey, which included questions about demographic information, condom use behaviors, acculturation, and Hispanic cultural values. The cultural and condom use measures were counterbalanced to avoid potential bias related to measure presentation. Completion of the survey packet took no more than one hour. All participants were debriefed and referred to the UTEP University Counseling Center for any psychological distress or to the UTEP Student Health Center for any concerns about sexual risks and physical health status. Fliers for each of these facilities were available to give to participants for more information. No participant reported distress after participating in the study. Depending on the recruitment modality, participants received either experiment credit as a requirement for Introduction to Psychology courses or a $10 gift card.

2.4 Approach to Analyses

Participant characteristics were analyzed using descriptive statistics. Group differences were assessed by recruitment modality, and as there were significant differences, recruitment modality was

included as a control variable (see Table 1). Continuous variables were centered before being included in the inferential analyses. Two hierarchical linear regression models with condom use (Model 1) and intentions to use condoms as dependent variables were planned, as were univariate assessments with the dependent variables of interest. Independent variables included gender, relationship status, and recruitment modality (step 1); acculturation, familismo, religiosity, machismo, and marianismo (step 2); and cultural variables by gender interactions (step 3). Due to the lack of internal reliability of the intentions to use condoms scale, analyses that included this variable were not conducted. Multicollinearity was assessed among variables within the condom use model. Significant multicollinearity (VIF >10) was noted in the interaction step of the model. To address multicollinearity, missing data was imputed to increase the sample size to that of the recruited sample. After imputation, multicollinearity was not observed.

Table 1: Participant Characteristics (No Imputation).

Variable	*N*	Total % or *M*(*SD*)	Sona Systems % or *M* (*SD*)	In Person % or *M* (*SD*)	*p*
Age	**443**		**20.27(3.73)**	**21.27 (4.62)**	**0.02**
Gender	456				0.34
Male		60.8	32.2	59.5	
Classification	**450**				**0.01**
Freshman		48.7	55.7	28.4	
Sophomore		28.7	27.8	31	
Junior		13.8	11.4	20.7	
Senior		7.3	4.5	15.5	
Graduate		1.6	0.6	4.3	
Relationship status	456				0.2
Single		87.8	86.8	90.5	
In a Relationship		12.2	13.2	9.5	
Drinking (past 30 days)	**449**				**0.002**
None		31.8	33.8	26.1	
Monthly		46.6	47.9	42.6	
Weekly		20.9	18.3	28.7	
Daily		0.6	0	2.6	
Smoking	**443**				**0.024**
Non-Smoker		84.7	85.8	81.2	
Intermittent		10.4	9.9	11.6	
Light		4.9	4.2	7.2	
Religious Affiliation	449				0.1
Catholic		69	70.6	64.7	
Other		31	29.4	35.3	
GPA	392	3.30 (4.6)	3.38 (.53)	3.05 (.52)	0.53
Age First Sex	422	16.74 (2.35)	16.64 (2.52)	17.02 (1.74)	0.14
Condom Use	**282**	**17.29 (4.98)**	**17.65 (5.02)**	**16.40 (4.81)**	**0.04**
Intention to Use Condoms	439	20.64 (5.53)	20.70 (5.50)	20.50 (5.62)	0.49
Acculturation	429	3.24 (0.80)	3.20 (0.83)	3.34 (0.70)	0.4
Religiosity	413	11.99 (3.15)	11.64 (2.97)	12.96 (3.42)	0.06
Machismo	393	96.16 (9.41)	96.22 (9.14)	96.00 (10.19)	0.67
Marianismo	404	2.26 (0.43)	2.30 (0.40)	2.18 (0.47)	0.26
Familismo	**424**	**14.56 (2.87)**	**14.84 (2.74)**	**13.73 (3.07)**	**0.02**

Note. Bold text indicates significant mean differences between recruitment modality groups.

A database was used for imputation in which variables not included in the regression model were deleted. PRELIS version 8.8 for Windows software was used to impute data using a single data

imputation and the EM Algorithm (Jöreskog & Sörbom, 2006). The EM Algorithm is a two-step procedure: the first step, the E-step, uses elements in the mean vector and the covariance matrix to calculate a series of regression equations to predict the missing values from the observed values. The M-step, the second step, applies complete-data formulas to generate updated estimates of the mean vector and the covariance matrix. These steps are repeated until values no longer changes in the M-steps (Enders, 2010). Data were Missing at Random from 38% of the sample on the condom use measure, and this is an appropriate method of imputation for this degree of missing data (Enders, 2010). Reviewing item level means revealed no statistically significant differences between participants with missing data and after imputation (see Table 2).

Table 2: Descriptive Statistics Before and After Imputation.

Variable	Missing Data *M*(*SD*)	Imputed Data *M*(*SD*)	*p*
Condom Use	17.29 (4.98)	17.14 (4.79)	0.39
Intention to Use Condoms	20.64 (5.52)	20.67 (5.43)	0.50
Acculturation	3.24 (0.79)	3.24 (0.78)	0.26
Religiosity	11.99 (3.14)	11.93 (3.13)	0.68
Machismo	96.16 (9.41)	95.92 (9.46)	0.61
Marianismo	2.26 (0.43)	2.27 (0.42)	0.30
Familismo	14.55 (2.87)	14.55 (2.87)	0.38

After imputation, univariate analyses were conducted using the variables included in the model. T-tests were conducted for continuous variables, while bivariate correlations assessed relationships among continuous variables. Error control was not employed, as univariate analyses were designed to be exploratory in nature.

The multivariate model after imputation assessed condom use (Model 2) as the dependent variable. Again, independent variables included gender, relationship status, and recruitment modality (step 1); acculturation, familismo, religiosity, machismo, and marianismo (step 2); and cultural variables by gender interactions (step 3).

Any cultural constructs that demonstrated significant associations with either dependent variable were assessed further at the subscale level using bivariate correlations.

Results

The majority of participants reported being single and living with their parents, with 84.1% Hispanic, 9.7% Mexican National, and 6.2% "other Hispanic." Five percent of the sample reported being bisexual, and 3.8% reported being attracted to the same sex only. In terms of risky behaviors, 5.3% reported having contracted a STI, 14.7% were never tested, 17.2% of participants reported never having used contraception, and 59% reported inconsistent lifetime condom usage. Over eleven percent of participants reported paying for sex at least once in their lifetimes, 37.7% reported having anal sex at least once in their lifetimes, and 71.1% reported having oral sex at least once in their lifetimes. Participants were on average more acculturated to the United States, and reported strong beliefs in familismo, lower levels of belief in religiosity, and moderate beliefs in machismo and marianismo. Participant characteristics are illustrated in Table 1.

3.1 Regression Model without Imputation

In Model 1 (condom use as dependent variable) the first step of the overall model was significant, accounting for 4.7% of the variance in condom use, $F(3,194) = 3.164$, $p = .026$. Of the predictors entered in the first step, relationship status was statistically significant ($\beta = -.147$, $p = .037$), such that those in a relationship reported lower levels of condom use. In Step 2, the overall model was significant, accounting for 8.3% of the variance in condom use, $F(8,189) = 2.145$, $p = .034$. Relationship status ($\beta = -.163$, $p = .022$) and marianismo ($\beta = -.191$, $p = .032$) were significant, such that those in a relationship and those who have stronger beliefs in marianismo reported lower levels of condom use. Step 3 was also significant, explaining 11.2% of the variance in condom use, $F(13,184) = 1.793$, $p = .047$. Relationship status ($\beta = -.167$, $p = .020$), recruitment modality ($\beta = -.148$, $p = .049$), and machismo ($\beta = .532$, $p = .049$) were significant, such that those in a relationship, those recruited using Sona Systems, and those with stronger beliefs in machismo reported lower levels of condom use (See Table 3). The interaction between machismo and gender ($\beta = -.538$, $p = .048$) was also significant such that as females held stronger beliefs in machismo, they decreased condom use, and as males held stronger beliefs in machismo, they increased condom use (see Figure 1). Condom use correlated with the

Silencing Self to Maintain Harmony (r = -.131, p = .05) and Subordinate to Others (r = -.134, p = .04) subscales of the Marianismo Beliefs Scale, but was not correlated with any of the individual subscales of the machismo scale.

Table 3: Summary of the Hierarchical Regression Predicting Condom Use (No Imputation).

Variable (N = 198)	B	SE B	β	p
Step 1				
Gender	0.948	0.708	0.095	0.182
Relationship Status	**-2.264**	**1.081**	**-0.147**	**0.037**
Recruitment Modality	**-1.276**	**0.748**	**-0.121**	**0.09**
R^2= 0.047				**0.026**
Step 2				
Gender	0.695	0.729	0.07	0.341
Relationship Status	**-2.51**	**1.085**	**-0.163**	**0.022**
Recruitment Modality	-1.514	0.778	-0.144	0.053
Acculturation	-0.052	0.038	-0.098	0.177
Religiosity	-0.065	0.112	-0.042	0.562
Machismo	0.021	0.05	0.036	0.671
Marianismo	**-2.303**	**1.066**	**-0.191**	**0.032**
Familismo	-0.064	0.143	-0.036	0.657
R^2= 0.083				**0.034**
Step 3				
Gender	0.688	0.733	0.069	0.349
Relationship Status	**-2.565**	**1.096**	**-0.167**	**0.02**
Recruitment Modality	**-1.558**	**0.786**	**-0.148**	**0.049**
Acculturation	-0.081	0.124	-0.152	0.512*
Religiosity	-0.458	0.348	-0.296	0.19*
Machismo	**0.318**	**0.161**	**0.532**	**0.049***
Marianismo	-3.963	3.387	-0.329	0.244*
Familismo	-0.629	0.468	-0.357	0.181*
Acculturation by Gender	0.021	0.078	0.062	0.792*
Familismo by Gender	0.382	0.288	0.345	0.187*
Religiosity by Gender	0.286	0.223	0.289	0.203*
Machismo by Gender	**-0.2**	**0.101**	**-0.538**	**0.048***
Marianismo by Gender	1.279	2.153	0.165	0.553*
R^2= 0.112				**0.047**

Note. * indicates VIF greater than 10.

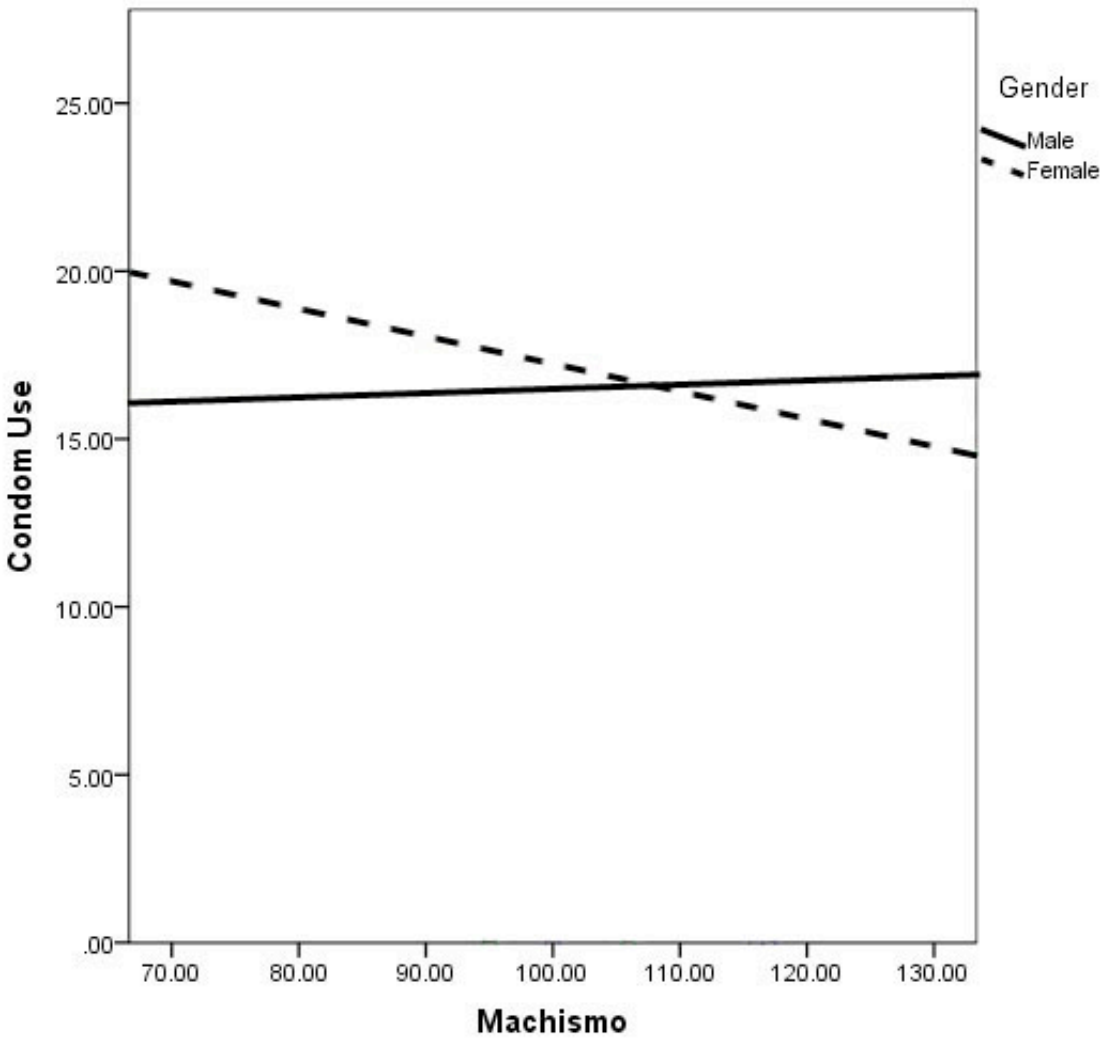

Figure 1: The interaction between machismo and gender predicting condom use.

3.2 Univariate Analyses with Imputation

T-tests with categorical variables and bivariate correlations of the variables included in the regression model were conducted. T-tests indicated that both sex (t (454) = -3.138, $p < .01$) and relationship status (t (454) = 2.703, $p < .01$) were significantly associated with condom use such that males and those in a relationship were less likely to use condoms. Bivariate correlations are displayed in Table 4. No continuous variables demonstrated a relationship with condom use. Familismo demonstrated a negative relationship with religiosity and positive relationships with machismo and marianismo, while marianismo was negatively related to religiosity and positively related to machismo.

Table 4: Bivariate Correlations between Variables included in the Regression Model (Imputation).

	1	2	3	4	5	6
1. Condom use	1					
2. Acculturation	-.082	1				
3. Religiosity	.034	.002	1			
4. Machismo	-.055	.057	-.079	1		
5. Marianismo	-.044	-.024	**-0.206****	**0.49****	1	
6. Familismo	.015	-.086	**-0.11***	**0.378****	**0.51****	1

Note. * indicates significance at the .05 level; ** indicates significance at the .001 level.

3.3 Regression Model with Imputation

In Model 2 (condom use as dependent variable), the first step of the overall model was significant, accounting for 4.4% of the variance in condom use, $F(3,452) = 6.987$, $p < .001$. Of the predictors entered in the first step, gender ($\beta = .143$, $p = .003$) and relationship status ($\beta = -.142$, $p = .002$) were significant, such that those who were male and in a relationship reported lower levels of condom use. In step 2, the overall model was significant, accounting for 5.7% of the variance in condom use, $F(8,447) = 3.394$, $p = .001$. The predictors that were statistically significant in the second step were gender ($\beta = .146$, $p = .003$) and relationship status ($\beta = -.145$, $p = .002$), with those who were male and in a relationship reporting lower levels of condom use. In step 3 the overall model was significant, accounting for 7.7% of the variance in condom use, $F(13,442) = 2.837$, $p = .001$. Of the predictors entered into the third step, gender ($\beta = .148$, $p = .003$), relationship status ($\beta = -.146$, $p = .002$), and marianismo ($\beta = -.229$, $p = .014$) were significant, such that those who were male, in a relationship, and held stronger beliefs in marianismo reported lower levels of condom use (see Table 5). The marianismo by gender interaction ($\beta = .232$, $p = .012$) was also significant, such that as males held stronger beliefs in marianismo, they reported less condom use, and as females held stronger beliefs in marianismo, they reported greater condom use (see Figure 2). Condom use was significantly related to the Silencing Self to Maintain Harmony ($r = -.143$, $p = .002$) and Subordinate to Others ($r = -.09$, $p = .05$) subscales of the Marianismo Beliefs Scale.

Table 5: Summary of the Hierarchical Regression Predicting Condom Use (Imputation).

Variable (N = 456)		B	SE B	β	p
Step 1					
	Gender	**1.401**	**0.468**	**0.143**	**0.003**
	Relationship Status	**-2.086**	**0.679**	**-0.142**	**0.002**
	Recruitment Modality	-0.677	0.52	-0.062	0.194
	R^2= 0.044				< 0.001
Step 2					
	Gender	**1.432**	**0.482**	**0.146**	**0.003**
	Relationship Status	**-2.13**	**0.681**	**-0.145**	**0.002**
	Recruitment Modality	-0.699	0.537	-0.064	0.193
	Acculturation	-0.036	0.024	-0.071	0.127
	Religiosity	0.093	0.073	0.061	0.204
	Machismo	-0.013	0.028	-0.026	0.635
	Marianismo	-0.498	0.666	-0.044	0.455
	Familismo	0.077	0.092	0.046	0.399
	R^2= 0.057				**0.001**
Step 3					
	Gender	**1.448**	**0.483**	**0.148**	**0.003**
	Relationship Status	**-2.145**	**0.679**	**-0.146**	**0.002**
	Recruitment Modality	-0.585	0.537	-0.053	0.277
	Acculturation	-0.016	0.039	-0.032	0.672
	Religiosity	-0.037	0.106	-0.024	0.728
	Machismo	0.046	0.045	0.091	0.306
	Marianismo	**-2.614**	**1.064**	**-0.229**	**0.014**
	Familismo	0.102	0.137	0.061	0.454
	Acculturation by Gender	-0.033	0.049	-0.051	0.505
	Familismo by Gender	-0.035	0.183	-0.016	0.848
	Religiosity by Gender	0.236	0.146	0.111	0.106
	Machismo by Gender	-0.094	0.057	-0.142	0.098
	Marianismo by Gender	**3.44**	**1.364**	**0.232**	**0.012**
	R^2= 0.077				**0.001**

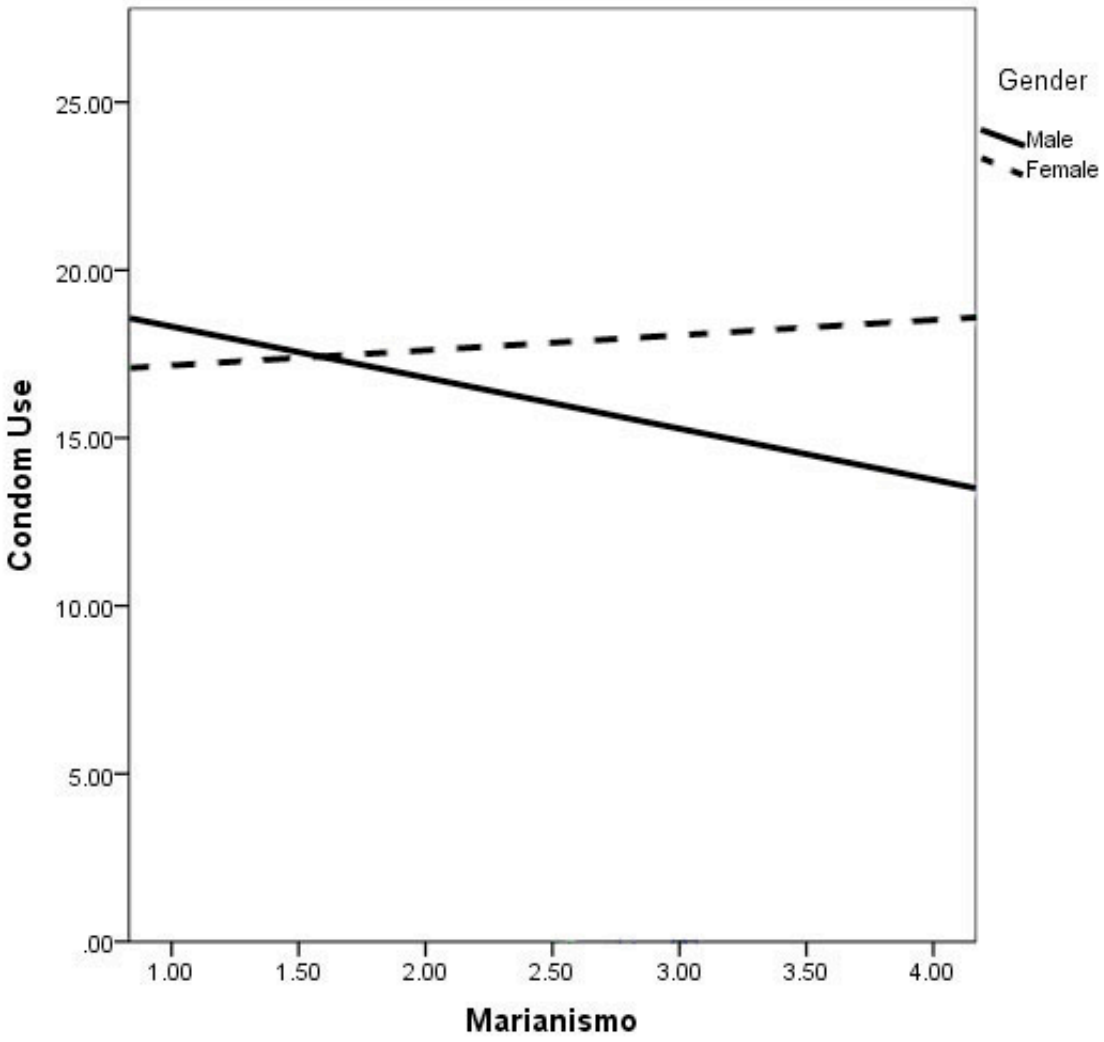

Figure 2: The interaction between marianismo and gender predicting condom use.

Discussion

4.1 Condom Use

Eight percent of the participants in this sample reported rarely using condoms in their lifetime, and the majority of participants reported inconsistent lifetime use of condoms. This pattern of condom use is consistent with rates of condom use observed in studies that examined condom use in college students of multiple ethnicities (50% reported no condom use during last vaginal intercourse; Kim et al., 2007; 65.1% reported inconsistent condom use; Polacek et al., 2007) and female college students (48.9% reported inconsistent condom use; Caldeira et al., 2009). While rates of inconsistent condom use are similar in different ethnic groups, Hispanic STI rates remain higher, so other factors warrant assessment. For example, some potential other factors related to infection rates include that fewer Hispanics report knowledge of how HIV is transmitted and that Hispanics do not report HIV infection as a current or future problem (Polacek et al., 2007). Future studies should examine additional factors that may impact STI rates in Hispanics. Further, these results emphasize the need to intervene in this population in order to increase condom use and encourage consistent use of condoms.

Relationship status was associated both in univariate and multivariate analyses with condom use such that those in a relationship reported lower levels of condom use. This finding is consistent with other studies, which found that those in relationships are less likely to use condoms (Umphrey & Sherblom, 2007). Sexual risk patterns of those in relationships may be different than those who are single (Vannier & O'Sullivan, 2010), and this should be noted for intervention efforts to increase condom use and sexual health. Future studies should examine whether those in relationships are engaging in other safe sexual behaviors, like STI testing and sexual communication, even if not using condoms. For example, the decision to not use condoms in a monogamous relationship should be preceded by STI testing and communication assessing whether both people in the relationship are comfortable no longer using condoms.

Both univariate and multivariate analyses indicated men reported using condoms less often than women. This finding contrasts with a study which found that women were less likely to report having used a condom during the last time they had sex or consistent condom use in the past month (Adefuye et al., 2009). Additionally, this finding is inconsistent with another study, which observed that males were using condoms more than females (Kim et al., 2007). Frequencies of anal (37.7%) and oral (77.1%) sex in this sample were similar to rates presented in another study assessing multiethnic college students (28% anal, 76% oral; Kim et al., 2007). However, unlike the Kim et al. (2007) study, the present study grouped condom use with regular or casual sexual partners during different sexual acts together; condom use patterns may be more informative if separated by sexual act. Interestingly, there was a gender relationship with condom use, but no observed relationship between condom use and machismo. Because machismo was not found to play a significant role in determining male condom use, male gender effect on condom use may not be a culturally based phenomenon, and Hispanic males may have similar patterns to other minorities (Espinosa-Hernandez & Lefkowitz, 2009). Future directions for research should include whether there are other constructs related to gender and maleness that should be measured in relationship to condom use and sexual risk, continued comparison of ethnic group sexual risk patterns, as well as an assessment of condom use during specific sexual acts that may be important to intervention.

In multivariate analyses while controlling for other variables, marianismo was significantly related to condom use such that participants, men in particular, with stronger beliefs in marianismo were less likely to use condoms. Specific aspects of marianismo that were related to condom use were "silencing self to maintain harmony" and being "subordinate to others," which include concepts suggesting a woman should satisfy her partner's sexual needs without an argument and should not discuss sex or contraception (Castillo et al., 2010). With regard to females within this study, this finding is consistent with another study that found that those with greater comfort with sexual communication

were less likely to use condoms (Deardorff et al. 2010). However, the current finding among men is inconsistent with Deardorff et al. (2010), as men in that study with higher levels of sexual communication also reported lower levels of condom use. It may be that among border region college students, men who believe that a woman should not discuss sex and should not question their sexual needs may have unique challenges to condom use. For example, males who hold strong beliefs in marianismo may not wish to discuss sex and condom use either out of respect for traditional gender role beliefs or to promote limited condom use during sexual activity. These possibilities warrant more fine grained assessments of marianismo and its relationship to condom use, particularly in light of limited research on marianismo generally. Marianismo has been generally assessed qualitatively (D'Alonzo, 2012) and areas of focus vary, with research assessing relationships between marianismo and transition periods like going to college or immigrating (Castillo, 2009; Sy & Brittian, 2008). Future studies should continue to assess the relationship between marianismo and risky sexual behaviors in addition to assessing the potential cultural power inequalities in relationships and cultural norms that promote female submissiveness to male partners.

No relationship was found between condom use and acculturation. This finding is inconsistent with acculturation theory (Berry, 2003) and studies that have found a relationship between higher levels of acculturation and high levels of drug and alcohol use (Borges et al., 2011; Raffaelli, Torres Stone, Iturbide, McGinley, Carlo, & Crocket, 2007). However, results are consistent with other studies that did not observe a relationship between acculturation and risky behaviors in a less acculturated sample recruited from border region colonias (Blume et al., 2009). It may be that being on the U.S. / México border alters typical notions and measures of acculturation and the effect of acculturation on risky behaviors, as much of the population crosses the border frequently and the majority of the population on either side of the border is Hispanic rather than non Hispanic White. This sample's proximity to the border may indicate that acculturation as it is traditionally applied may not be ideal for this sample.

Also, acculturation can be conceptualized multiple ways, and studies have begun to examine acculturation based on immigration status, time spent in the United States, and/or language spoken in the home (Borges et al., 2011; Lee & Hahm, 2010). Thus, it may be important to examine the adequacy of acculturation assessments to a more comprehensive concept of acculturation and less the acquisition of a language (Wallace, Pomery, Latimer, Martinez, & Salovey, 2009). Future studies of condom use within Hispanics may seek to assess border region nuances (e.g., time spent in the U.S.) and use multiple measures of acculturation.

No relationship was found between condom use and familismo, religiosity, or machismo. First, with regard to familismo, this cultural variable may play a more important role in other sexual behaviors, like number of partners (Upchurch et al., 2001), yet may not be as salient with condom use per se. In addition, while Upchurch et al. (2001) assessed issues such as parent socioemotional support and sexual activity initiation, the present study assessed familismo and condom use more globally. Future studies of condom use and Hispanics may wish to attend to more specific aspects of family dynamics. Second, with regard to religiosity, the findings from this study were not consistent with the Villarreal et al. (2007) study that did find a protective relationship between higher levels of religiosity and higher levels of condom use. Villarreal et al. (2007) considered condom use among high school students in the past three months while this study considered past condom use in the participants' lifetimes, so the effect that religiosity plays on condom use may dissipate over time. That participants in this study were in college, a time of transition, may have influenced the role of religion in their daily lives. Other studies that examined religiosity and condom use observed more moderate levels of religiosity in adolescents (Villareal et al., 2007) and college students (Jemmott, Jemmott, & Villareal, 2002). This sample generally demonstrated lower levels of religiosity such that religion did not appear integral in individuals' secular life, and perhaps in particular did not impact their sexual practices. Responses to this scale also demonstrated a restriction of range, which reduces variability as well as the

likelihood of observing a relationship between religiosity and condom use (Cohen, Cohen, & West, 2003). Future studies should consider longitudinally the role of religiosity and other cultural variables on condom use. Third, machismo was not associated with condom use. This finding is inconsistent with studies that find that machismo increases sexual risk and is associated with a reduction in condom use (Locke et al., 2005; VanOss Marin et al., 1997). This sample demonstrated moderate beliefs in machismo, which is similar to another study that assessed machismo and sexual risk (VanOss Marin et al., 1997). However, this sample held stronger beliefs in machismo than a sample of adult men who have sex with men (Estrada, Rigali-Oiler, Arciniega, & Tracey, 2011), and lower beliefs than was found in a sample of community members in Mexico (Montalvo Reyna & García Cadena, 2006). It may be that the machismo construct is mutable and impacted by other constructs that may be related to sexual risk and culture, such as sexual orientation or acculturation. Additionally, a unique aspect of this study is the inclusion of female perspectives on machismo, which may have affected the lack of observation of the predicted relationship and should also be further studied. Finally, taking into account the lack of associations between multiple cultural constructs and condom use (except marianismo), one interpretation may be that there is no relationship between condom use and cultural variables examined in this study such that Hispanic college student lifetime condom use patterns (on the border) may be more influenced by other demographic or psychosocial constructs less akin to culture. Future studies should include more intricate measures of cultural constructs (e.g., family dynamics, fatalism), assess Hispanic college students over time, and include other less culturally oriented measures (e.g., alcohol and drug use).

4.2 Clinical Implications

The results from this study indicate important areas for intervention because inconsistent condom use was common. Intervention and prevention efforts should target men, particularly those with stronger beliefs in marianismo. Men with higher expectations that women should not discuss sex or contraception

may inhibit these conversations when initiating intercourse with a partner, whereas men who have lesser beliefs in marianismo and may not have these expectations may allow for joint contraception decisions before intercourse. Generally, interventions should focus on the positive aspects of increasing condom use, for instance normalizing condom use as a way to demonstrate respect for one's partner, to offer security and peace of mind, and to demonstrate maturity and responsibility (García & Goldman, 2003; García, & Goldman, 2004). Additionally, discussing personal responsibility as well as the responsibilities of both partners may also help increase condom use while maintaining a focus on positive aspects and remaining culturally sensitive. Intervention components may include psychoeducation and sexual communication training focused on increasing comfort with discussing sensitive topics and normalizing the role of women in contraception decisions (Timm & Keiley, 2011). This is in line with previous research, which indicates that condom negotiation skills are critical to increasing condom use (Tschann et al., 2010).

Another important area for intervention and prevention efforts includes a focus on couples and safe sex. These could include psychoeducation efforts focused on potential relationship processes that should occur before discontinuing condom use such as both partners being tested for STIs. Additionally, assertiveness and sexual communication training can play a role in providing partners with the comfort and skills necessary to discuss sexual choices in a safe manner.

4.3 Limitations and Strengths

The limitations of the current study are noteworthy. First, the study's cross-sectional design limits interpretation of relationships over time and causal inference. Second, the assessment within a Hispanic college student population potentially limits generalizability to other populations. Third, the broader assessment of multiple risky sexual behaviors may offer more information on the impact of culture on sexual risk. Strengths of the study are the assessment within an underserved population and of

multiple empirical and theoretical cultural constructs, which could be utilized in future interventions targeted to Hispanics.

4.4 Conclusions and Future Directions

This study provides an examination of multiple empirically and theoretically derived cultural constructs and their relationship to condom use in a Hispanic student population. Results indicate that being male, in a relationship, and being male with stronger beliefs in marianismo are associated with lower levels of condom use. Though only one cultural construct was related to condom use, future studies should continue to examine these constructs with other risky sexual behaviors prospectively. Future prevention and intervention efforts to increase safe sexual behaviors are clearly warranted, and should likely include promoting sexual communication in an effort to reduce sexual risk in border region Hispanic college students.

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Appendix

Appendix A

Today's Date: _____ Age: _____ Gender: _____ Male _____Female

I am filling this questionnaire out at:

_____ The Student Health Center
_____ The Student Union
_____ The El Paso Natural Gas Conference Center
_____ The UTEP Library
_____ The Psychology Department
_____ Other: _____

Please indicate the ethnic/racial group to which you belong:

_____Mexican American _____Mexican National
_____Other Latin/Hispanic origin (please specify) _____
_____White _____African American
_____Asian American _____Native American
_____Other (please specify) _____

What is your level of education? What is your GPA? _____

_____Less than High School
_____High School or equivalent
_____Some College
_____Vocational School/Associate's Degree
_____College Graduate (e.g. B.A., B.S.)
_____Some Post-Graduate training

What is your current student classification?

_____Freshman
_____Sophomore
_____Junior
_____Senior
_____Graduate

I am:

_____Single (never married)
_____Married
_____Divorced
_____Widow/Widower
_____Separated
_____Living with someone

Please indicate if you are a member of any of these organizations/ teams:

_____ Fraternity (please specify)_____
_____ Sorority (please specify)_____
_____ Football Team
_____ Basketball team
_____ Golf Team
_____ Track & Field Team
_____ Soccer Team
_____ Tennis Team
_____ Cross Country
_____ Softball
_____ Volleyball
_____ Baseball
_____ Other sports team (please specify): _____

I am living:

_____ Alone
_____ With parent(s)
_____ With other family
_____ With friend(s)
_____ With roommate(s)
_____ Other: _____

What is your smoking status?

_____ I smoke daily and more than 10 cigarettes per day
_____ I smoke daily more than 5 cigarettes but less than 10 cigarettes per day
_____ I smoke daily but less than 5 cigarettes per day
_____ I smoke weekly but not every day
_____ I smoke monthly but not weekly
_____ I no longer smoke at all, but in the past smoked at least 1 cigarette per day;
If so, how many cigarettes per day? _____
_____ I no longer smoke at all, but in the past I smoked weekly but not daily
_____ I have smoked a cigarette or a few, just to try it
_____ I have never smoked before, not even a puff

Drinking Quantity/Frequency Index (Cahallan's Q/F Index)

1. **How often did you drink during the last *month*?** (check one)

____ I did not drink at all.
____ About once a month.
____ Two to three times a month.
____ Once or twice a week.
____ Three to four times a week.
____ Nearly every day.
____ Once a day or more.

2. **Think of a typical weekend evening** (Friday or Saturday) during the last ***month***. How **much** did you drink on that evening? (write down the number of drinks)

_____ Drinks

3. **Think of the time** (any day of the week) **you drank the most** during the last ***month***. How **much** did you drink? (write down the number of drinks)

_____ Drinks

What religion do you most closely follow?

_____ Christian
_____ Catholic
_____ Protestant
_____ Jewish
_____ Muslim
_____ Buddhist
_____ Unitarian/Universalist
_____ Hindu

_____ Mormon/Latter-Day Saints
_____ Jehovah'sWitness
_____ Orthodox (Eastern)
_____ Evangelical/Born Again
_____ Atheist/Agnostic

What does that religion teach about sex? _____

What does that religion teach about condom use? _____

How strongly do you believe what your religion indicates about sex?

1	2	3	4	5	6	7
Not at all			Somewhat			Very Much

How strongly do you believe what your religion indicates about condom use?

1	2	3	4	5	6	7
Not at all			Somewhat			Very Much

The following questions deal with relationships and sexual activity. For the purposes of this study, we define sexual activity as consensual anal, oral, or vaginal sex.

Are you currently in a relationship? _____Yes _____No

If yes, please specify the length of time you have been in your relationship:

_____I have been dating someone for less than 6 months.
_____I have been dating someone for more than 6 months but less than a year.
_____I have been dating someone for over a year.
_____I have been married for less than 6 months.
_____I have been married for more than 6 months but less than a year.
_____I have been married for over a year.

We define sexual activity as consensual anal, oral, or vaginal sex.

Are you currently sexually active?

_____Yes
_____No

How risky are you sexually?

_____ Not at all
_____ A little
_____ Some
_____ A lot
_____ Very much so

We define sexual activity as consensual anal, oral, or vaginal sex.

How frequently are you sexually active?

_____I have never had sex.
_____I have sex at least once a week.
_____I have sex less than once a week.
_____I have sex less than once a month.
_____I have sex less than once every six months.
_____I have sex less than once a year.

Please rate how knowledgeable you are about the following:

Chlamydia?	1	2	3	4	5	6	7
	Not at all			Somewhat			Very Much
Syphilis?	1	2	3	4	5	6	7
	Not at all			Somewhat			Very Much
Gonorrhea?	1	2	3	4	5	6	7
	Not at all			Somewhat			Very Much
HIV/AIDS?	1	2	3	4	5	6	7
	Not at all			Somewhat			Very Much
Other STIs?	1	2	3	4	5	6	7
	Not at all			Somewhat			Very Much

Have you ever contracted a sexually transmitted disease?

_____Yes _____No
_____I have never been tested for a sexually transmitted disease

If yes, what sexually transmitted diseases have you contracted?

_____I don't know/I don't remember
_____Chlamydia
_____Gonorrhea
_____Hepatitis B

_____Herpes
_____HIV/AIDS
_____Human Papilloma Virus (HPV)/Genital Warts
_____Syphilis
_____Trichomoniasis
_____Other (please specify)_____

Have you ever used any contraceptive devices? _____Yes _____No

If yes, which have you used? (please specify all you have used)

_____I don't know/I don't remember
_____Male condom
_____Female condom
_____Birth control pill (such Ortho Tri-Cyclen or Yasmin)
_____Birth control patch (such as Ortho Evra)
_____Injected birth control (such as Depo-Provera)
_____Other forms of contraception (please specify)_____

At what age did you first have consensual sex? _____

Have you ever had un-consensual sex? _____ Yes _____ No

Appendix B

Now we are going to ask you questions about your sexual orientation and how you identify. Please circle one of the following responses to each question:

1. To whom are you sexually attracted?

1	2	3	4	5	6	7
Other sex only	Other sex mostly	Other sex somewhat more	Both sexes	Same sex somewhat more	Same sex mostly	Same sex only

2. How do you think of yourself?

1	2	3	4	5	6	7
Heterosexual only	Heterosexual mostly	Heterosexual somewhat more	Hetero/Gay-Lesbian equally	Gay/ Lesbian somewhat more	Gay/ Lesbian mostly	Gay/ Lesbian only

Appendix C
Short Acculturation Scale for Hispanics

Please circle one response for each question.

1. In general, what language(s) do you read and speak?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

2. What was the language(s) you used as a child?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

3. What language(s) do you usually speak at home?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

4. In which language(s) do you usually think?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

5. What language(s) do you usually speak with your friends?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

6. In what language(s) are the T.V. programs you usually watch?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

7. In what language(s) are the radio programs you usually listen to?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

8. In general, what language(s) are the movies, T.V. and radio programs you prefer to watch and listen to?

1	2	3	4	5
Only Spanish	More Spanish than English	Both equally	More English than Spanish	Only English

9. Your close friends are

1	2	3	4	5
All Hispanic	More Hispanic than Non-Hispanic	About half and half	More Non-Hispanic than Hispanic	All Non-Hispanic

10. You prefer going to social gatherings/parties at which people are

1	2	3	4	5
All Hispanic	More Hispanic than Non-Hispanic	About half and half	More Non-Hispanic than Hispanic	All Non-Hispanic

11. The persons you visit or who visit you are

1	2	3	4	5
All Hispanic	More Hispanic than Non-Hispanic	About half and half	More Non-Hispanic than Hispanic	All Non-Hispanic

12. If you could choose your children's friends you would want them to be

1	2	3	4	5
All Hispanic	More Hispanic than Non-Hispanic	About half and half	More Non-Hispanic than Hispanic	All Non-Hispanic

Appendix D
Sexual Risk Subscale of the HIV Risk-Taking Behavior Scale

Please circle one response for each time period according to your past sexual experiences.

1. How many people have you had sex with during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. None	0. None	0. None
1. One person	1. One person	1. One person
2. Two people	2. Two people	2. Two people
3. 3-5 people	3. 3-5 people	3. 3-5 people
4. 6-10 people	4. 6-10 people	4. 6-10 people
5. More than 10 people	5. More than 10 people	5. More than 10 people

2. How often have you used condoms when having sex with your regular partner(s) during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. No regular partner/no penetrative sex	0. No regular partner/no penetrative sex	0. No regular partner/ no penetrative sex
1. Every time	1. Every time	1. Every time
2. Often	2. Often	2. Often
3. Sometimes	3. Sometimes	3. Sometimes
4. Rarely	4. Rarely	4. Rarely
5. Never	5. Never	5. Never

3. How often have you used condoms when you had sex with casual partners during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. No casual partner/no penetrative sex	0. No casual partner/no penetrative sex	0. No casual partner/ no penetrative sex
1. Every time	1. Every time	1. Every time
2. Often	2. Often	2. Often
3. Sometimes	3. Sometimes	3. Sometimes
4. Rarely	4. Rarely	4. Rarely
5. Never	5. Never	5. Never

4. How often have you paid for sex during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. Never	0. Never	0. Never
1. Once	1. Once	1. Once
2. Twice	2. Twice	2. Twice
3. 3-5 times	3. 3-5 times	3. 3-5 times
4. 6-10 times	4. 6-10 times	4. 6-10 times
5. More than 10 times	5. More than 10 times	5. More than 10 times

5. How often have you used condoms when you paid for sex during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. No paid sex	0. No paid sex	0. No paid sex
1. Every time	1. Every time	1. Every time
2. Often	2. Often	2. Often
3. Sometimes	3. Sometimes	3. Sometimes
4. Rarely	4. Rarely	4. Rarely
5. Never	5. Never	5. Never

6. How many times have you had anal sex during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. No times	0. No times	0. No times
1. One time	1. One time	1. One time
2. Two times	2. Two times	2. Two times
3. 3-5 times	3. 3-5 times	3. 3-5 times
4. 6-10 times	4. 6-10 times	4. 6-10 times
5. More than 10 times	5. More than 10 times	5. More than 10 times

7. How often have you used condoms when you have had anal sex during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. No anal sex	0. No anal sex	0. No anal sex
1. Every time	1. Every time	1. Every time
2. Often	2. Often	2. Often
3. Sometimes	3. Sometimes	3. Sometimes
4. Rarely	4. Rarely	4. Rarely
5. Never	5. Never	5. Never

8. How many times have you had oral sex during each of the following time periods?

The last three months	**The last year**	**Lifetime**
0. No times	0. No times	0. No times
1. One time	1. One time	1. One time
2. Two times	2. Two times	2. Two times
3. 3-5 times	3. 3-5 times	3. 3-5 times
4. 6-10 times	4. 6-10 times	4. 6-10 times
5. More than 10 times	5. More than 10 times	5. More than 10 times

9. How often have you used condoms when you have had oral sex during each of the following time periods?

The last three months
0. No oral sex
1. Every time
2. Often
3. Sometimes
4. Rarely
5. Never

The last year
0. No oral sex
1. Every time
2. Often
3. Sometimes
4. Rarely
5. Never

Lifetime
0. No oral sex
1. Every time
2. Often
3. Sometimes
4. Rarely
5. Never

Appendix E

Instructions: Please circle the number that best corresponds to your answer.

Imagine that you have recently begun dating a new person, and you are going to have sex for the first time. You know that you (or your partner) do not use birth control pills. Please respond to the following questions even if you have never used (or had a partner who used) condoms, or even if you do not anticipate getting a new partner soon.

HOW LIKELY ARE YOU:

1. **To use a condom?** (Very Unlikely) 1 2 3 4 5 6 7 (Very Likely)
2. **Suggest the use of a condom to your partner?** 1 2 3 4 5 6 7
3. **Reject the use of a condom if your partner wants to use one?** 1 2 3 4 5 6 7
4. **Insist on the use of a condom if your partner rejects using one?** 1 2 3 4 5 6 7
5. **Refuse to use or have your partner use a condom?** 1 2 3 4 5 6 7

Appendix F
Latino/a Values Scale

INSTRUCTIONS: Use the scale below to indicate the extent to which you agree with the value expressed in each statement.

1 = strongly disagree 2 = disagree 3 = agree 4 = strongly agree

_____1. One does not need to follow one's cultural customs.
_____2. One does not need to be loyal to one's cultural origin.
_____3. One's bond with one's cultural group must be very strong.
_____4. One must preserve one's cultural heritage.
_____5. One should never lose one's language of origin.
_____6. One should work to preserve the language of one's ethnic group.
_____7. A man must provide for his family financially.
_____8. One should be able to question one's elders.
_____9. One should never bring shame upon one's family.
_____10. One does not need to practice one's cultural celebrations.
_____11. A man's strength comes from being a good father and husband.
_____12. One does not need to be emotionally affectionate to familiar individuals.
_____13. A woman should sacrifice everything for her family.
_____14. One's successes should be attributed to one's family.
_____15. A mother must keep the family unified.
_____16. One does not need to always present oneself as likeable to others.
_____17. A woman is considered the backbone of the family.
_____18. One's family is the main source of one's identity.
_____19. One must not offend others.
_____20. One does not need to always be cordial to others.
_____21. One must defer to one's elders for advice.
_____22. One does not need to have faith in premonitions.
_____23. One must maintain a sense of interdependence with one's group.
_____24. One does not need to trust a higher being.
_____25. One does not need to maintain one's cultural traditions.
_____26. One does not need to always support one's group.
_____27. One must help one's group to achieve its goals.
_____28. One does not need to always avoid conflict with others.
_____29. A woman must be a source of strength for her family.
_____30. One should be respectful to people who have a higher status.
_____31. One should never offend one's elders.
_____32. A woman does not need to successfully endure all adversity.
_____33. A woman should be the spiritual leader in the family.
_____34. One does not need to preserve the customs of one's cultural background.
_____35. One must be proud of one's cultural group.

Appendix G
Religiosity Measures Questionnaire

The following questionnaire consists of seven multiple-choice items with one fill-in-the-blank item. Please answer the following questions by choosing the appropriate letter for the multiple-choice items and providing the most accurate number for the fill-in-the-blank question.

How many times have you attended religious services during the past year? _____
Which of the following best describes your practice of prayer or religious meditation?

a) Prayer is a regular part of my daily life
b) I usually pray in times of stress or need but rarely at any other time.
c) I pray only during formal ceremonies
d) Prayer has little importance in my life
e) I never pray

When you have a serious personal problem, how often do you take religious advice or teaching into consideration?

a) Almost always
b) Usually
c) Sometimes
d) Rarely
e) Never

How much influence would you say that religion has on the way that you choose to act and the way you choose to spend your time each day?

a) No influence
b) A small influence
c) Some influence
d) A fair amount of influence
e) A large influence

Which of the following statements comes closest to your belief about god?

a) I am sure that God really exists and that He is active in my life.
b) Although I sometimes question His existence, I do believe in God and believe He knows of me as a person.
c) I don't know if there is a personal God, but I do believe in a higher power of some kind.
d) I don't know if there is a person God or higher power of some kind, and I don't know if I ever will.
e) I don't believe in a personal god or higher power.

Which one of the following statements comes closest to your belief about life after death (immortality)?

a) I believe in a personal life after death, a soul existing as a specific individual spirit.
b) I believe in a soul existing after death as a part of a universal spirit.
c) I believe in a life after death of some kind, but I really don't know what it would be like.
d) I don't know whether there is any kind of life after death, and I don't know if I will ever know.
e) I don't believe in any kind of life after death.

During the past year, how often have you experienced a feeling of religious reverence or devotion?

a) Almost daily

b) Frequently
c) Sometimes
d) Rarely
e) Never

Do you agree with the following statement? “Religion gives me a great amount of comfort and security in life.”

a) Strongly disagree
b) Disagree
c) Uncertain
d) Agree
e) Strongly agree

Appendix H
Machismo Attitudes Scale

Please indicate how much you agree or disagree with the following statements.

You felt that…

1. When it comes to family decisions, the man's opinion is always the most important and should never be questioned.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

2. A man should always face his problems, not avoid them.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

3. It is a man's right to exaggerate his personal accomplishments to make himself look important.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

4. A man deserves to be taken care of by the women in his family.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

5. A real man takes care of himself and doesn't need a wife to do everything for him.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

6. A real man will fight anyone who disrespects his authority.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

7. A real man will do the right thing, even if it is unpopular.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

8. It is wrong for a man to admit that he needs help.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

9. A man should always tell his wife and children how much he loves them.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

10. A man must appear tough in the eyes of others.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

11. A man should avoid activities that are commonly performed by women.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

12. It is better for a man to be a follower rather than a leader.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

13. A man's first priority is his family.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

14. A real man will refuse to share the household responsibilities with his wife (e.g., cooking meals).

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

15. A man must stand up for what he believes.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

16. A real man can share his feelings.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

17. A real man can follow orders as well as give them.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

18. Men who can drink a lot of alcohol impress their friends with their strength.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

19. A good father treats every member of his family as equals.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

20. A real man can ask for help when he needs it.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

21. It is acceptable for little boys to play with dolls.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

22. A man who can express his emotions is strong.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

23. A real man puts the needs of his wife and children before his own.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

24. A real man is dishonest and is unfaithful to his wife.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

25. A wife must obey her husband at all times.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

26. A man who cries at a family funeral is weak.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

27. A father will often guide and care for his children.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

28. It is inappropriate for a man to talk to others about his problems.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

29. A man is always responsible for protecting his family.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

30. A good father will hug and kiss his children often.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

31. A father's best form of discipline for his children is physical punishment (hitting them).

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

Appendix I
Marianismo Beliefs Scale

Instructions: The statements below represent some of the different expectations for Latinas. For each statement, please mark the answer that best describes what you believe rather than what you were taught or what you actually practice.

A Latina ...

1.) must be a source of strength for her family.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

2.) is considered the main source of strength of her family.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

3.) mother must keep the family unified.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

4.) should teach her children to be loyal to the family.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

5.) should do things that make her family happy.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

6.) should (should have) remain(ed) a virgin until marriage.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

7.) should wait until after marriage to have children.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

8.) should be pure.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

9.) should adopt the values taught by her religion.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

10.) should be faithful to her partner.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

11.) should satisfy her partner's sexual needs without argument.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

12.) should not speak out against men.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

13.) should respect men's opinions even when she does not agree.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

14.) should avoid saying no to people.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

15.) should do anything a male in the family asks her to do.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

16.) should not discuss birth control.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

17.) should not express her needs to her partner.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

18.) should feel guilty about telling people what she needs.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

19.) should not talk about sex.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

20.) should be forgiving in all aspects.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

21.) should always be agreeable to men's decisions.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

22.) should be the spiritual leader of the family.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

23.) is responsible for taking family to religious services.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

24.) is responsible for the spiritual growth of the family.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

Vita

Cecilia Brooke Cholka was raised in El Paso, TX. She enrolled as an undergraduate at Trinity University in San Antonio, TX in 2005. There she earned her Bachelor of Arts degree with honors in Psychology and Theater with a minor in Sociology. She entered the Masters of Arts in Clinical Psychology program at UTEP in 2009, where she works with Dr. Theodore V. Cooper in the Prevention and Treatment in Clinical Health laboratory.

Permanent address: 4011 Lincoln Ave.
El Paso, TX 79930

This thesis/dissertation was typed by Cecilia Brooke Cholka.