A mediational model was tested where religiosity predicted sexual behaviors of 386 Catholic Latino adolescents aged 12 to 16 based on parental-adolescent communication about sex. Religiosity predicted greater intentions to delay intercourse after controlling for differences in age and gender. This effect was not mediated by extent of communication. Frequent parental communication about sex predicted adolescents being older at first intercourse after controlling for age and gender. Religiosity and communication did not predict contraceptive use. Results suggest religiosity and parental communications about sex contribute independently to the sexual socialization of Latino youth. (Contains 64 references and 3 tables.) (Author)
Sexual Behaviors Among Latino Youth: The Role of Religiosity and Communication

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CHOICES
Abstract

A mediational model was tested where religiosity predicted sexual behaviors of 386 Catholic Latino adolescents aged 12 to 16 (M = 12.91, SD = .62) based on parental-adolescent communication about sex. Religiosity predicted greater intentions to delay intercourse after controlling for differences in age and gender, $R^2$ change = .021; $F(4, 335) = 4.74, p < .001$; this effect was not mediated by extent of communication. Frequent parental communication about sex predicted adolescents' being older at first intercourse after controlling for age and gender, $R^2$ change = .196, $F(3, 22) = 2.77, p < .07$. Religiosity and communication did not predict contraceptive use. Results suggest religiosity and parental communication about sex contribute independently to the sexual socialization of Latino youth.
Sexual Behaviors Among Latino Youth: The Role of Religiosity and Communication

In 1999, over 50% of high school students in the United States reported having had sexual intercourse (Centers for Disease Control [CDC], 2000c). Although fewer adolescents each year are choosing to have sex (CDC, 2000a), those that do are becoming sexually active at increasingly younger ages (Brewster, Cooksey, Guilkey, & Rindfuss, 1998; CDC 1997, CDC 2000c). This is especially true for Latino youth; the CDC (2000c) reports that almost 10% of Latinos have had sexual intercourse before age 13, while only 5% of Euro American adolescents report having sexual intercourse before age 13.

Additionally, sexually active adolescents in the United States report infrequently using contraceptives. Although the CDC (2000c) states that condoms are the most frequently used method of contraception among sexually active adolescents in the United States, even rates of condom use are relatively low, with only about half of adolescents reporting having used a condom at the time of their last intercourse. Latino adolescents are also significantly less likely to use contraceptives than adolescents in other ethnic groups (CDC, 1997, CDC, 2000b, CDC 2000c). Early sexual activity among Latino adolescents, especially when coupled with low rates of condom use, may translate into serious implications for the public health of this population.

Perhaps most notably, unprotected adolescent sexual activity leads to an increased risk of experiencing early pregnancy and childbirth. Each year, almost one million adolescent women become pregnant, 78% of which do so unintentionally (National Campaign to Prevent Teen Pregnancy [NCPTP], 2000a). Three out of five Latinas experience at least one pregnancy during their adolescent years, a rate significantly higher than the national average (NCPTP, 2000b). Latinas have the highest teen birth rate across all ethnic groups in the U.S. (NCPTP, 2000b). In California, 44 out of 1000 adolescent women give birth annually (California Department of
California also contains a significant number of teen birth “hot spots,” where birth rates have reached up to 150 per 1000 adolescent women (CDHS). Aside from potentially creating socio-economic difficulties for these individuals and their families, early pregnancy places young women’s infants at higher risk for medical complications. These infants are at greater risk for premature birth, low birth weight, physical and neurological defects, and mortality, even after controlling for differences in quality and frequency of prenatal care (Anastasiow, 1987; Bozkaya, Mocan, Usluca, Beser, & Gumustekin, 1996; McAnarney, Bayer, Kogut, Silverman, & Iker, 1986; Stickle, 1981).

In addition to early pregnancy, unprotected intercourse places adolescents at increased risk of disease contraction. Four million adolescents become infected with a sexually transmitted infection (STI) annually (Office of Disease Prevention and Health Promotion, 1999). Likewise, the CDC (1998) reports that approximately 656,900 adolescents are currently infected with the HIV virus, with minority youth having a greater prevalence of infection. However, this number only considers individuals who have been tested and found positive for HIV. Therefore, it may be an underestimate because it does not include the 75% of adolescents who have not been tested for HIV (CDC, 1997), or who were tested but scored falsely negative for the virus.

Due in part to these and other health concerns, researchers in recent years have explored numerous socio-demographic and psychological factors as potential indicators of risky sexual activity among adolescents. Examination of the determinants of risky sexual behavior, including unprotected sexual activity, is a crucial component of identifying ways in which to increase instances of abstinence and reliable condom use among sexually active youth, which in turn work to decrease the negative health consequences of unsafe adolescent sexual behavior. The need for research in this area is important when considering the current health outcomes of
Latino youth, who have been identified in the literature as being at greater risk than comparable EuroAmerican adolescents for experiencing early pregnancy and STI and HIV/AIDS contraction (CDC, 2000c).

Many factors relevant to Latino adolescent’s life experiences in the U.S. may influence the sexual behavior of these youth. Latinos are the fastest growing ethnic minority group in the U.S., and demographers predict that the country will soon be predominately Latino (Villarruel & Montero-Sieburth, 2000). This fast population growth rate signifies that the majority of Latinos currently living in the United States are recent immigrants or first- or second-generation U.S. citizens: the Census Bureau reports that, of the 32.8 million (or 12% of the population) Latino individuals living in the U.S., 39% were born outside of the country (Therrien & Ramirez, 2000). These individuals hold a diverse range of culturally and religiously rooted traditions, values, and belief systems (Villarruel & Montero-Sieburth, 2000).

One such value examined in the current paper that may influence adolescent sexuality is religiosity, or the strength of one’s religious beliefs (Young, 1982). An examination of Latino cultural heritage demonstrates the historic impact of Catholicism. Early colonization processes brought the Judeo-Christian religious heritage of Spain to the people of Latin America (Francoeur, 1990; Hunt, 1999; Pena & Frehill, 1998; Ortiz-Torres, Serrano-Garcia, & Torres-Burgos, 2000). During the colonization process, individuals in Latin America were encouraged to adopt the rituals and symbols of Catholicism, and to abandon indigenous conceptualizations of religion (Francoeur). Although demographic studies report that increasingly more Latinos in the United States are choosing to convert to Protestant religions (Hunt), Catholicism no doubt continues to influence the norms and values of Latinos (Francoeur). Catholic religion relies
heavily on literal teachings from the Holy Bible, and yields moral and spiritual authority to these teachings (Rosten, 1975).

The Catholic religion has strict rules for sexual conduct, and is actively concerned with transmitting values to adolescents with the intention of impacting adolescent sexual behavior (Brewster et al., 1998). These teachings prescribe pervasive norms against engaging in premarital sexual intercourse (Mahoney, 1980; White & DeBlassie, 1992). Many researchers have empirically examined the impact of religiosity on adolescent sexual behavior. The majority of this research, although conducted on non-Latino samples, has indeed found that religious adolescents have less sexually permissive attitudes and behaviors than less religious adolescents (Clayton, 1972; Libby, Gray, & White, 1978; Reiss, 1967; Thornton & Camburn, 1989; Young, 1982). The body of research examining the influence of religion on the sexual behavior of Latino adolescents, although not as extensive, reports findings similar to the research on Euro-American adolescents. Liebowitz, Castellano, and Cuéllar (1999), in a study on Mexican American adolescents, found religious participants were significantly more likely to report being abstinent than participants with less religious convictions. Furthermore, similar findings have been reported with college-aged samples (Langer, Warheit, & Perez McDonald, 2001). Langer and associates, in a study of 338 ethnically diverse college students (72% of which were Latino), found that having strong religious values was associated with being less likely to have sexual intercourse with unknown partners or with individuals who used illegal drugs or alcohol.

Aside from discouraging premarital sexual intercourse, Catholicism prescribes additional norms for sexual behavior. Because the only sexual activity sanctioned by the Catholic Church occurs in heterosexual marital relations for the purposes of procreation (Francoeur, 1990), Catholicism openly condemns the use of any form of contraception, other than "natural"
contraceptive methods such as the rhythm (cycle charting) or withdrawal method. These religious codes of conduct are enforced by associating contraceptive use with sinning (Donovan, 1984; Rosten, 1975; Studer & Thornton, 1987). This is despite common health care knowledge that using the rhythm (cycle charting) and withdrawal methods are the most unreliable birth control methods (National Women's Health Information Center, 2001), and place people at increased risk of contracting an STI, including HIV. Prior research does suggest that these norms can influence the decisions adolescents make. Sexually active adolescents with greater degrees of religiosity have lower rates of reliable condom usage than sexually active adolescents with lesser degrees of religiosity (Forste & Heaton, 1988; Goldschieder & Mosher, 1991; Studer & Thornton, 1987). Furthermore, this pattern of behavior has been found among Latino youth. In one of the few studies conducted on Latino adolescents, Gibson and Lanz (1991) found that, not only did religious Latina adolescents report less contraceptive use than non-religious Latina adolescents, they also reported perceiving using birth control as less important. Similarly, Kahn, Rindfuss, and Guilkey (1990) found that adolescents holding a religious affiliation (such as Catholicism) that did not endorse contraceptive use were significantly less likely to report using birth control than non-religious adolescents. These findings highlight that being religious can function to discourage protective safe sexual health behaviors among adolescents who are sexually active.

It is important to note that very little research exists examining the role of religiosity as a determinant of sexual behavior among young adolescents. Researchers in the area of human sexuality use college student samples as representative of the "adolescent" population. However, college-age students may be removed from familial influences and hold their peers as their main source of influence and information (Cauce, Mason, Gonzalez, Hiraga, & Liu 1996; Mason,
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Cauce, & Gonzalez, 1997; Udry, 1988). This separation from family constraints over participation in religion and religious behavior may dilute the importance of religiosity in these individuals' lives, therefore, these findings cannot be easily generalized to younger adolescents.

Furthermore, almost no research on the influence of religion on adolescent sexuality exists on ethnic adolescents. Although Catholicism may play a central role in Latino culture, little to no research has specifically examined the impact of religiosity on the sexual behaviors of young Latino adolescents. Thus, the present study will help build on the little research on adolescent sexuality and religious behavior by exploring the link between these two variables with an understudied population. However, the possibility that the religiosity/sexual behavior relationship is also likely to be influenced by several other factors should not be left unexplored. Most notably, the extent to which traditional religious teachings on sexuality are communicated to the adolescent within the home should be considered as a possible factor determining the extent of influence of religiosity and acculturation processes have on adolescent sexual behavior.

Religion and Parental-Adolescent Communication About Sexuality

Researchers have suggested that communication about sex in more religious homes is often of a different quality than communication about sex in less religious homes. Fox and Inazu (1979) found that parental-adolescent communication occurs more frequently in more religious households. However, discussion in these households often consists of setting strict rules for sexual conduct and discussing prepubertal changes; as such, personal attitudes and feelings regarding sexuality is often not discussed (Fox & Inazu). Furthermore, research has suggested that there may be some variability in the extent that religious households discuss sex with their children: Catholic parents who are more liberal in their views about adolescent sexuality
communicate more with their adolescent children about sex than Catholic parents who hold conservative attitudes towards adolescent sexual behavior (Swan, 1983).

It is highly likely that the extent to which religiosity influences the sexual behavior of adolescents is dependent on the extent to which religious teachings about sexuality get communicated to adolescents: that is, that the frequency of parental-adolescent communication about sex may mediate the relationship between religiosity and adolescent sexual behavior. Within parental-adolescent conversations about sex, parents have the opportunity to directly impose traditional values, including religious teachings about sexuality, onto adolescents. Many researchers have indeed suggested that parental-adolescent sexual communication can influence adolescent sexual behavior (Christopher, Johnson, & Roosa, 1993; Pistella & Bonati, 1998). Dittus, Jaccard, and Gordon (1999), advocates of the family-based approach to safer adolescent sexual behavior, state that parents play a major role in adolescent sexual socialization. This approach posits that parents directly impact their adolescent’s sexual behavior through the promotion of certain sexual practices. As an accessible source of information on sexuality (Lefkowitz, Sigman, & Au, 2000), parents can influence their adolescent’s sexual behavior by communicating their values to their adolescent (Fisher, 1986b; Fox & Inazu, 1980; Leland & Barth, 1993; Miller, Kotchick, Dorsey, Forehand, & Ham, 1998; Moore, Peterson, & Furstenberg, 1986; Shoop & Davidson, 1994).

Indeed, a large body of research has found that parental-adolescent communication about sex, including both the extent and the quality of communication, influences the sexual behaviors of adolescents (Dittus et al., 1999). Adolescents whose parents frequently talk to them about sex seem to adopt their parents’ values and beliefs, supporting the family-based approach (Dittus et al.; Fisher, 1986a). Adolescents who frequently discuss their concerns about sex with their
parents are less likely to be sexually active (Dilorio, Kelley, & Hockenberry-Eaton, 1999; Fisher, 1986b; Leland & Barth, 1993). Holtzman and Rubinson (1995) found, in a national sample of high-school aged adolescents, increased parental-adolescent sexual communication about HIV was related to adolescents having fewer sexual partners. Furthermore, parental-adolescent communication prior to the initiation of sexual activity is related to greater rates of consistent condom use once the adolescent becomes sexually active (Fox & Inazu, 1980; Holtzman & Rubinson; Miller et al., 1998; Miller, Levin, Whitaker, & Xu, 1998; Shoop & Davidson, 1994). These studies suggest that parental-adolescent communication about sex sets the stage for safer adolescent sexual behavior.

As suggested by the literature, parental-adolescent communication about sex is thought to directly influence adolescent sexual behavior by transmitting norms that are either permissive or prohibitive towards certain sexual practices, such as engaging in sexual intercourse and using contraceptives. Within parental-adolescent conversations about sex, parents have the opportunity to impose traditional values, including religious teachings about sexuality, onto adolescents. Thus, we hypothesized that the level of parental-adolescent communication about sex mediates the relationship between religiosity and Latino adolescent sexual behavior. When parental-adolescent communication is more frequent, religiosity will have a greater impact on adolescent sexual behavior, as the religious teachings about sexual behavior are more likely to get transmitted to the adolescent.

Following this conceptual model, several hypotheses were formulated. It was expected that, after controlling for differences in age and gender, religiosity and parental-adolescent communication mediate the relationship between acculturation and sexual behavior so that lower acculturation scores would predict greater religiosity, and greater religiosity would influence the
following indicators of sexual behavior indirectly through the frequency of parental-adolescent communication:

H1: Lower likelihood of being sexually active
H2: Being an older age at first intercourse
H3: Greater intentions to delay sexual activity
H4: Among sexually active adolescents, a lower rates of condom use
H5: Among non-sexually active adolescents, lesser intentions to use contraceptives

Methods

Participants

Data were collected during the 2000 to 2001 academic school year from eighth and ninth grade students in two school districts (a total of 7 schools were sampled) in Los Angeles County for the purposes of evaluating a sex education program. Adolescents were drawn from three school districts that have been identified by the State of California as being “hot spots” for teen pregnancies, with an average of 86 per 1000 adolescent women in the sampled areas giving birth yearly (California Department of Health Services, 2001). Six hundred and sixty-four adolescents (462 or 70% of which were Latino) from 3 schools completed measures. The sample was further restricted, for data analytic purposes, so that only adolescents who were Latino and stated that their religious affiliation as Catholic were selected for inclusion, (n = 386). The current sample consists of approximately equal numbers of females (52.1%; n = 201) and males (47.2%; n = 180). Five participants (1.3%) did not report their gender. Participants were between 12 and 16 years old (M = 12.91, SD = .62).

Nine percent (34) of the respondents indicated that they have had sex. The distribution of participants who reported being sexually active was not different based on gender ($\chi^2 (1) < 3.00$).
These findings are not consistent with the CDC’s (2000c) findings that Latino males are significantly more likely to be sexually active than Latina females, suggesting that this population of adolescents is unique from national data. Of the 34 individuals who stated that they had had intercourse, 27 (80%) reported their age at first intercourse to be about 12 and a half years ($M = 12.56, SD = .89$). This is significantly younger than the national average age of first intercourse of 17.8 years as reported by the CDC (1997), again suggesting that this sample may not be representative of the national population. However, considering that the range of the sample was restricted to youths in early adolescence, these statistics should be interpreted with caution. Age at first intercourse was not significantly different for females ($M = 12.70, SD = .68$) versus males ($M = 12.50, SD = 1.03$).

The majority of participants were $1^{st}$ generation United States citizens, defined as having been born in the United States, but having one or both parents born outside of the United States ($n = 218; 56.5\%$). One hundred and thirty-four (33.4\%) of participants were immigrants (born outside of the United States), and 18 (4.7\%) were from $2^{nd}$ generation families, where both they and their parents were born inside the United States. Twenty-one (5.4\%) of participants did not answer the items on generational status. The majority of participants born outside the United States listed their country of origin as Mexico ($n = 111$).

The vast majority of participants (79%; $n = 305$) lived with both their parents. Sixty-seven participants (17.4\%) lived only with their mother, and seven participants (1.8\%) lived only with their father. Five (1.3\%) reported living with neither parent. Only two participants (.5\%) did not provide information regarding their living arrangements. These data suggest that the participants in the current study mostly come from intact families.
The majority of participants (approximately one-third) did not know their parents’ highest level of education. Of those who knew their parent’s educational level, the majority responded that both their mothers (27.7%; \( n = 107 \)) and their fathers (25.9%; \( n = 100 \)) had less than an eighth grade education. This data suggests that these participants may come from communities of lower socio-economic status, however, this result should be interpreted with caution considering that many participants did not know their parents’ educational level. In addition, the educational system in Latin countries may be structured differently, and therefore participants may have inaccurately listed their parents’ educational level.

**Procedure**

Consent forms were distributed to all eligible participants two weeks’ prior to data collection by participants’ teachers. The consent form was written in both English and Spanish and explained the research study in detail. All individuals who wished to participate in the study were required to turn in a copy of this consent form signed by the participant and one parent or legal guardian. All participants were guaranteed anonymity by being assigned a code number.

Questionnaires were administered during participants’ physical education or health and safety classes. Project staff read a protocol instructing the students on how to fill out the questionnaire. Steps were taken to ensure that participants were given enough privacy when completing the questionnaire. For instance, participants were instructed to seat themselves apart from their peers, and to only ask the research team (not their peers or teachers) if they needed assistance. Questionnaires were written in English. However, those participants who needed extra assistance in question comprehension were read the questionnaire (or portions of) out loud in English and/or Spanish.
The current study is a secondary analysis of an existing data set. The data for this study was obtained as part of a larger study evaluating the impact of a teen theater intervention on adolescent sexual knowledge, contraceptive use, and intended sexual behavior. The study from which the data were drawn consists of a pretest-posttest design, conducted over a three-day period. All data for the present analyses were collected during the pre-testing session, and thus results are not likely to be confounded with any effects of the intervention.

**Measures**

Participants were administered a 5-page questionnaire, taking about 20 minutes to complete, to gather data on adolescent sexuality and to evaluate a 1-hour safe-sex educational program. The items used for the current analyses were drawn from this questionnaire.

**Demographics.** Participants were asked to report their age, ethnicity, and gender, generational status, parents' highest level of education achieved, and which parent(s) they lived with. Participants were also asked to choose their religious affiliation from a list of 8 religions. Participants were allowed to indicate if they practiced more than one religion. An “other” religious affiliation category was also provided.

**Current sexual behavior.** Participants were asked “Have you had sex? (yes/no).” Due to stipulations in the public schools where data were collected, “sex” was not defined, and thus open to interpretation, and thus could entail any one of several different types of sexual activity, not just heterosexual, genital-to-genital intercourse. Sexually active adolescents were asked to provide their age at time of first intercourse.

**Intended sexual behavior.** Intended sexual behavior was measured with four items ($\alpha = .70$). Two items were dichotomous, and two were placed on 5-point Likert scales (1 = strongly disagree, 5 = strongly agree). Sample items included, “I plan to wait to have sex until I am
older.” Thirty-four individuals (8.8%) failed to answer the items on their intentions to delay sexual intercourse.

**Condom Use.** As condoms are both the most commonly used contraceptive method among adolescents (CDC, 2000c) and provide the best protection against both STIs (including HIV) and pregnancy (National Women’s Health Information Center, 2001), the current study examined the extent of condom use among sexually active adolescents by asking them, “How often do you use condoms?” placed on a 5-point Likert scale (1 = never, 5 = always). Intended contraceptive use among non-sexually active adolescents was assessed by two questions (r = .37, p < .001); “If you decide to have sex, will you use birth control? (yes/no)” and “I should use birth control when I have sex,” placed on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Sixty-three (16.3%) of the participants failed to answer these questions.

**Religiosity.** Participants completed a five-item scale adapted from Scott’s (1965) Personal Values Scale (Religious Values subscale) that included questions on both religious behavior (church attendance) and religious attitudes (α = .70).4 Abstract wording present in the original scale was modified to be comprehensible among the adolescents sampled. Items measuring religious attitudes were on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree) and included, “I try to follow the rules of my religion.” The measure of church attendance was placed on a forced-choice categorical scale.

**Parental-Adolescent Communication About Sex.** Participants completed two items (r = .50, p < .001) asking them how often they talked with their mother and father about sex. Items were measured on a five-point Likert scale (1 = never, 5 = always).

Results

*Sample Characteristics and Bivariate Correlations.*
Participants reported a moderate frequency of communication about sex with their parents ($M = 2.26$, $SD = 1.00$ on a 5-point scale). Furthermore, participants’ religiosity was normally distributed, with the majority of adolescents scoring in the middle of the religiosity scale (standardized scale). The adolescents had, on average, strong intentions to delay sexual intercourse ($M = .12$, $SD = .72$, on a standardized scale). Non-sexually active participants had moderate intentions to use contraceptives (standardized scale). However, the distribution of participants’ responses were positively skewed, suggesting that many adolescents reported strong intentions to not use contraceptives once sexually active. Likewise, sexually active participants only reported a moderate level of condom use ($M = 2.37$, $SD = 1.8$ on a 5-point scale). However, the most frequent response chosen for this item was “every time” (14 out of 32 sexually active participants).

Bivariate correlations among the independent and dependent variables were computed. Lack of a correlation between the independent measures would indicate that the variables could not mediate each other (Baron & Kenny, 1986). The religiosity and parental-adolescent communication variables were significantly correlated with each other ($r = .18$), allowing for a mediational test of these two variables.

Looking at the dependent variables, the religiosity variable was positively and significantly correlated with not being sexually active ($r = .11$) and greater intentions to delay intercourse ($r = .15$). The parental-adolescent communication variable was significantly positively correlated with greater intentions to delay sexual intercourse ($r = .13$) and with being an older age upon becoming sexually active ($r = .39$), allowing for a test of the mediational effects of these variables. Neither of the independent variables was significantly correlated with either intended or actual contraceptive use.
Test of Hypotheses

H1: Religiosity and parental-adolescent communication as predictors of whether or not adolescents are sexually active.

A logistic regression analysis was conducted to examine religiosity as a predictor of whether adolescents have had sex. The logistic regression analysis consisted of two models. Because older adolescents are more likely to be sexually active (CDC, 2000c), age was entered into the first model to control for its effect on adolescents' sexually active status. Likewise, female adolescents are less likely to report being sexually active than male adolescents, so gender was also entered into the first model to control for its effect. Religiosity was the only predictor entered into the second model, allowing for isolation of potential effects of this variable. Fourteen individuals (3.6%) were excluded from the analysis due to missing data on one or more of the variables, final n = 372.

There was a good model fit (discrimination between groups) on the basis of gender and age alone, $\chi^2 (2) = -15.54, p < .01$. After addition of the religiosity variable, $\chi^2 (3) = -14.06, p < .05$, Nagelkerke $R^2 = -.085$. Comparison of log-likelihood ratios (see table 1) for models with and without the religiosity variable did not show reliable improvement with the addition of the religiosity variable, $\chi^2 (1) = 1.48, p > .05$.

Overall classification was poor. On the basis of the two demographic variables (age and gender) alone, correct classification rates were 0% for sexually active participants and 100% for non-sexually active participants. Adding religiosity as a predictor did not change these classification rates.
Table 1 shows the contribution of the individual predictors to the model by comparing models with and without each predictor. As can be seen from the table, although the overall model was significant, none of the individual predictors (age, gender, or religiosity) significantly predicted whether or not adolescents reported being sexually active.

H2: Religiosity and parental-adolescent communication as predictors of adolescents' age at first intercourse.

The influence of parental-adolescent communication on adolescents’ age at first intercourse can be explored, as these two variables were significantly correlated.

A hierarchical regression analysis was conducted to examine the extent of parental-adolescent communication as a predictor of adolescents’ age at first intercourse. The regression analysis again consisted of two models, with the first model containing age and gender. Extent of parental-adolescent communication was the only predictor entered into the second model, allowing for isolation of potential effects of this variable. Recall that only 34 participants reported being sexually active, 27 (80%) of which also reported their age at first intercourse. One individual was further excluded from the analyses because they failed to provide their gender and age, final n = 26.

The first regression block, which included gender and age, was not significant in predicting sexually active adolescents’ age at first intercourse, $R^2 = .08; F (2, 23) < 1.00$. However, adding the extent of parental-adolescent communication into the model in the second block significantly improved model fit, $R^2$ change = .196; F (3, 22) = 2.77, $p < .07$. See table 2 for a summary of these results. Although the overall model remained statistically insignificant, adding parental-adolescent communication into the analyses accounted for an additional 19% of the variance on adolescents’ age at first intercourse, with increased parental-adolescent
communication being predictive of a significantly older age at first intercourse. Examination of the individual predictors in the final model reveals that parental-adolescent communication is indeed a highly significant predictor of being older at time of first intercourse for this sample of adolescents (B = .383, SE = .157). Considering that the ability to detect effects with a regression analysis is determined by sample size, with greater samples yielding a higher likelihood of finding a significant effect (Jaccard & Becker, 1997), this should be considered a highly significant finding.

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**H3: Religiosity and parental-adolescent communication as predictors of adolescents’ intentions to delay intercourse.**

The third hypothesis explored religiosity and parental-adolescent communication as mediated predictors of sexually active adolescents’ age at first intercourse. A series of hierarchical regression analyses were conducted to test for a mediational relationship between religiosity, parental-adolescent communication, and adolescents’ intentions to delay intercourse. Recall that it was specifically hypothesized that parental-adolescent communication about sexual issues would mediate the relationship between religiosity and intentions to delay intercourse. Baron and Kenny (1986) suggest that, to test for a mediational relationship, a regression analysis first be conducted exploring the mediated predictor (religiosity) on the dependent variable (intentions to delay intercourse), and then a second regression analysis be conducted exploring the influence of the mediated predictor (religiosity) on the dependent variable (intentions to delay intercourse) controlling for the mediator variable (parental-adolescent communication). A mediational relationship can be said to occur if the predictive power of the mediated variable
(religiosity) drops to insignificance with inclusion of the mediator variable (parental-adolescent communication) in the model. This was the approach undertaken in the current analyses.

Additionally, the effects of the variables of gender and age on intentions to delay intercourse were again controlled by entering them into the first block in the model. Since pairwise elimination of missing data was used, 11% of the participants in the sample were excluded from the analyses due to failure to provide information on one or more of the variables in the final model, final \( n = 340 \).

The first analysis, as stated above, explored religiosity as a predictor of intentions to delay intercourse, controlling for the effects of gender and age. The first regression block, which included gender and age, was significant in predicting adolescents’ intentions to delay intercourse, \( R^2 = .023; F (2, 340) = 4.06, p < .05 \). Adding religiosity as a predictor in the model in the second block significantly improved model fit, \( R^2 \text{change} = .025; F (3, 339) = 5.75, p < .001 \). Examination of the individual predictors in the final model reveals that both gender (\( B = -.203, SE = .076 \)) and religiosity (\( B = .173, SE = .058 \)) were significant predictors of adolescents’ intentions to delay intercourse, with females and those adolescents who were more religious having greater intentions to delay intercourse.

The second regression analysis explored parental-adolescent communication about sexual issues as a mediator between religiosity and adolescents’ intentions to delay intercourse, controlling for the effects of gender and age. The results can be seen in table 3. The first regression block, which included gender and age, was again significant in predicting adolescents’ intentions to delay intercourse, \( R^2 = .024; F (2, 337) = 4.06, p < .05 \). Adding parental-adolescent communication as a predictor in the model in the second block did not significantly improve model fit, \( R^2 \text{change} = .009; F (3, 336) = 3.79, p < .001 \). Adding religiosity as a predictor in the
third block, however, continued to significantly improve model fit after controlling for parental-adolescent communication, $R^2$ change = .021; $F (4, 335) = 4.74, p < .001$. Examination of the individual predictors in the final model reveals that both gender ($B = -.191, SE = .077$) and religiosity ($B = .160, SE = .059$) were significant predictors of adolescents’ intentions to delay intercourse, with females and those adolescents who were more religious having greater intentions to delay intercourse. Because religiosity remained as a significant predictor after inclusion of the extent of parental-adolescent communication about sexual issues into the model, it can be concluded that religiosity’s influence on adolescents’ intentions to delay intercourse is not mediated by adolescents’ level of parental-adolescent communication about sex.

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**H4 and H5: Religiosity and parental-adolescent communication as predictors of sexually active adolescents’ rates of condom use and non-sexually active adolescents’ intentions to use contraceptives**

Religiosity and parental-adolescent communication were both not significantly correlated with sexually active adolescents’ reports of condom use or with non-sexually active adolescents’ intentions to use contraceptives. As such, mediational analyses cannot be tested among these variables (Baron & Kenny, 1986). The lack of a significant correlation between these variables and the dependent variables suggests that, for this sample of adolescents, religiosity and the extent of parental-adolescent communication about sexual issues do not significantly predict the reported condom use of neither sexually active adolescents nor non-sexually active adolescents’ intentions to use contraceptives. Therefore, no further analyses were conducted.

**Discussion**
Risky adolescent sexual behavior, including early intercourse and infrequent contraceptive use, has serious consequences for the public health of young Latinos. Latino youth in early adolescence are a rarely studied population, especially in the literature exploring the influence of religiosity on sexual behavior. The current findings indicate that religiosity is a significant predictor of adolescent sexual behaviors, namely, intentions to delay intercourse until older. Although the amount of overall variance in adolescents’ intentions to delay intercourse that is explained by religiosity might be considered small, these findings should be considered significant in a real-world context. Predictors of relatively small statistical significance can have substantial practical significance when considering the public health consequences of risky sexual behavior (Jaccard & Becker, 1997). A small statistical finding can translate into a substantial percentage of adolescents choosing to delay the onset of sexual intercourse, and a noticeable decrease in pregnancy and STI and HIV contraction among this population.

Surprisingly, religiosity was not related to either actual or intended contraceptive use in the current study. This is an interesting finding, given that it contradicts with prior research suggesting religious values deter individuals from using contraceptives (Foste & Heaton, 1988; Gibson & Lanz, 1991; Studer & Thornton, 1987). Possibly, this is due to the fact that many adolescents, especially Latino adolescents, report low rates of intended and actual contraceptive use (CDC, 2000c). Nevertheless, these findings should be replicated. Because participants in the sample were in early adolescence, one possibility is that religiosity only seeks to deter adolescents from using contraceptives once they are in older adolescence. Older adolescents may be more likely to be in a situation in which they are prompted (for instance, by the onset of sexual activity) to seriously consider their intentions to use contraceptives, resulting in the activation of religious norms as a guide for sexual decision-making.
One potential explanation for the influence of religiosity on adolescent sexual behavior is proposed by Reference Group theory (Hyman, 1942; Reiss, 1967). Reference Group theory would posit that adolescents who are very religious ascribe to their religion’s normative system as a referent for acceptable social behaviors. In the case of sexual behavior, rules against premarital intercourse sanctioned by the Catholic Church could be adopted and referred to, thereby decreasing the likelihood that religious adolescents become sexually active. However, this is only one potential theoretical explanation for the results found here. Indeed, although the current study measured religiosity, the direct impact of a religious referent was not assessed. Therefore, although the results do provide preliminary support for Reference Group theory, more research is needed. Qualitative research would be useful to explore the level of individual awareness of the influence of religiosity on sexual behavior and to explore whether specific religious referents are used to compare behaviors and/or guide thinking. Research of this nature would give additional support for the explanation of Reference Group theory presented here.

The role of other individuals in norm transmittance must also be mentioned. A steadily increasing body of evidence suggests that adolescent sexual behavior is heavily influenced by individuals with whom they interact (Dittus et al., 1999). These individuals, most notably parents and other socializing adults, are essential components of norm and value transmittance (Dittus, Jaccard, & Gordon).

The current study did indeed find that a greater level of parental-adolescent communication about sexual issues translated into being an older age at the time of first intercourse. This was a highly significant finding (especially when given the small sample size), and suggests that parents, via transmitting norms and values about sexual behavior to their adolescents, can influence their children’s sexual practices. Contrary to the hypothesis, however,
parental-adolescent communication about sexual issues did not mediate the relationship between religiosity and adolescent sexual behavior. One explanation of this finding was that religiosity and parental-adolescent communication about sexual issues impact the sexual behavior of adolescents independently. However, an alternative, and perhaps more likely, theory would be that this finding is due to the fact that the measure of parental-adolescent communication did not specifically assess transference of religious values about sexuality to adolescents. Most likely, adolescents do receive communication from their parents regarding religion's prescriptions for appropriate and inappropriate sexual conduct. However, the current study assessed the extent of parental-adolescent communication in general, and not the extent of communication about religious values regarding human sexuality per se. This study could be expanded on by measuring the frequency of parental-adolescent communication about different sexual topics, including transference of religious values regarding sexuality.

On a related note, religious and cultural value transference most likely requires the corroboration of religious leaders, parents, extended family members, dating partners, peers, and other members with whom adolescents interact on a regular basis. Furthermore, it must be acknowledged that adolescent sexual behavior is not only influenced by the religious and cultural values that are transmitted to adolescents, but also about providing an on-going contingency of reinforcement and discussion of sexual rules of conduct, including prospective consequences for certain sexual behaviors. That is, adolescent sexual socialization requires a continuous feedback loop, and should not be necessarily viewed as a one-way process, with adolescents as the recipient. Parents, dating partners, peers, extended family members, and other individuals in adolescents’ lives play a role not only in transmitting values, but also in reinforcing these values through the approval and disapproval of certain sexual behaviors. Clearly, the different
reinforcing power of these individuals should be examined in future research. A closer examination of the ecological context sexual socialization occurs in would be helpful in further exploring the influence of religiosity, acculturation, and communication process discussed here.

One last caveat warrants attention. The dependent variables in the current study specifically looked at instances of sexual activity, intentions to delay intercourse, intentions to use contraceptives once sexually active, and condom use. However, the attitudes and behaviors measured in the current study do not fully provide a picture of adolescent sexual behavior. The fact that “sexual activity” was left undefined in the present study warrants concern, as it is unclear whether adolescents were reporting instances of oral, anal, or genital-to-genital sexual intercourse, or of homosexual or heterosexual intercourse. Different forms of sexual intercourse place adolescents engaging in these behaviors at different levels of risk. Most notably, adolescents who engage in anal sex, although having a decreased risk of experiencing early pregnancy, are at increased risk of contracting HIV/AIDS (DiClemente, 1992). In addition, the current study did not measure the number of sexual partners adolescents have had sex with. A further examination into the specific sexual practices of this population, including instances of homosexual and heterosexual intercourse, types of intercourse, as well as the number of sexual partners a participant has had, is warranted to provide a clearer picture of adolescent sexual behavior and the influence of religiosity and communication about sex on these practices.

Many factors may potentially work to substantially decrease these negative health outcomes by working as deterrents to unprotected sexual behavior. It is important to note that many deterrents to unprotected sexual behavior, including the ones examined in the present paper, are already present among adolescents and the communities in which they thrive. That is, these behavioral health indicators of protective sexual behaviors (such as abstinence and
contraceptive use) are currently existent in the population, as opposed to needing to be
introduced into communities by behavioral science researchers. Considering this, it is
increasingly important for behavioral scientists to work towards identifying these protective
behavioral health indicators, and strengthening the impact they have on the communities in
which they exist. This form of preventative science is perhaps the best way to non-invasively
and positively impact public health. Thus, the future exploration of the ways in which religiosity
and communication (among other potential variables) directly and indirectly impact the health of
adolescents, including their sexual and non-sexual health, is a crucial area for future research,
and should increasingly continue in subsequent work.
References


Author Note

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Footnotes

1 Data were collected in two phases, for a total n = 1613 from six schools in the greater Los Angeles area. However, participants in the second data collection phase completed a different version of the questionnaire, and thus their responses are not included in the current set of analyses.

2 The majority of participants who were not Catholic listed their religious affiliation as either non-denominational Christian (n = 28), Jehovah’s Witness (n = 11), or did not list a religious affiliation (n = 11).

3 For measures containing items placed on different types of scales, items were first computed into z-scores and then averaged together.

4 An exploratory factor analysis utilizing varimax rotation found that all five religiosity items (including church attendance) loaded onto the same factor. Thus, all items were equally weighted in construction of the religiosity variable by averaging them together.
Table 1.

**Logistic Regression Analysis of Sexually Active Status as a Function of Demographics (age and gender) and Religiosity**

<table>
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<td>All Variables</td>
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*p < .05
Table 2.

Hierarchical Regression Analysis Examining Extent of Parental-Adolescent Communication as a Predictor of Sexually Active Adolescents’ Age at First Intercourse

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F (2, 23) = .974, R² change = .078

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F (3, 22) = 2.77, R² change = .194

*p < .05
Table 3.

Hierarchical Regression Analysis Examining Religiosity and Extent of Parental-Adolescent Communication as Mediated Predictors of Adolescents' Intentions to Delay Intercourse

<table>
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<td>Age</td>
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\( F (2, 337) = 4.06, R^2 \text{ change} = .024 \)

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<td>Parental-Adolescent Communication</td>
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\( F (3, 336) = 3.80, R^2 \text{ change} = .009 \)

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<td>Parental-Adolescent Communication</td>
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<tr>
<td>Religiosity</td>
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<td>.059</td>
<td>.147*</td>
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\( F (4, 335) = 4.74, R^2 \text{ change} = .021 \)

\*\( p < .05 \)
\+\( p < .10 \)
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