

# God Forbid! Substance Use Among Religious and Nonreligious Youth

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Among a predominately Mexican and Mexican American sample of preadolescents, religiosity protected against lifetime alcohol, cigarette, and marijuana use and recent alcohol and cigarette use when religious affiliation was controlled. When religiosity was controlled, however, adolescents with no religious affiliation and adolescents who were religiously affiliated reported similar substance use outcomes. Interaction effects demonstrated that the protective effect of greater religiosity operated more strongly in some religions than in others for selected outcomes. Overall, the impact of religiosity on reported drug use did not differ significantly for more and less acculturated Latino youth.

*Keywords:* adolescents, drug use, religiosity, Mexican American, acculturation

Adolescence is a life period marked by significant personal and social changes that are associated with unacceptably high substance use rates (Johnston, O'Malley, & Bachman, 1998a, 1998b). Initiation into substance use at this age is of special concern given that early drug use places an individual at greater risk for later use (M. A. Miller, Alberts, Hecht, Trost, & Krizek, 2000). Yet adolescence is also a period of attachment transitions and religious changes (Granquist, 2002). Compared with adults, adolescents are more likely to be searching for purpose and identity (L. Miller, Davies, & Greenwald, 2000). In this search, religion may be a source for information or answers, providing guidelines for behavior and opportunities for prosocial interaction.

Religion has been identified as having a protective effect against substance use, including for youth (Wallace & Bachman, 1991). Yet further research is needed to understand how religion affects adoles-

cents as they experience multiple developmental and social changes. Although religiosity and religious affiliation have each been associated with youth substance use outcomes, still relatively little is known about the relationship between these two phenomena and about how this relationship may influence adolescent substance use. Furthermore, little is known about how the influences of religion and acculturation combine in the life of Latino adolescents in the Southwest, many of whom come from immigrant families. This article focuses on the protective effects of religion, exploring the influence of religiosity within certain religious affiliations and across levels of acculturation, using a predominately Mexican and Mexican American sample of adolescents. The two hypotheses of the study are that religiosity and religious affiliation will have a protective effect on the drug use behaviors and norms of preadolescents in the Southwest and that acculturation will mediate the effect of religion.

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## Literature Review

### *Religiosity*

Religiosity is a multidimensional construct referring to a person's behavioral and attitudinal religious fervor, regardless of the content of his or her beliefs (Amey, Albrecht, & Miller, 1996). The literature operationalizes religiosity in several ways. Some researchers have explored behavioral and attitudinal domains of religiosity simultaneously. For instance, Kutter and McDermott (1997) conceptualized religi-

osity in three dimensions: proscriptiveness, involvement in church (or synagogue or mosque) activities, and importance placed on those activities.

Other researchers have explored the behavioral dimension of religiosity alone, defining it in terms of religious activities, such as frequency of church attendance and conversations with a religious leader (Neff & Hope, 1993; Zimmerman & Maton, 1992). Others have distinguished between private and public religious behavior: Private religiosity refers to personal prayers, the study of religious texts, and the individual effort to live by religious standards, whereas public religiosity refers to attendance at religious services, public prayer, and participation in group religious activities (Bahr, Maughan, Marcos, & Li, 1998; Hill, 2000). Under a behavioral conceptualization of religiosity, a person is more religious if he or she is more involved in religious activity, such as prayer and ceremonial worship, and/or in religion-related activity, such as faith youth groups and religious scholarship.

Researchers exploring the attitudinal dimension of religiosity have conceptualized it as the degree to which a person expresses sincere and earnest regard for religion (Cochran, 1993) and as the extent to which an individual agrees or disagrees with certain statements regarding religious ideals (Patock-Peckham, Hutchinson, Cheong, & Nagoshi, 1998). Others have defined it in terms of spirituality (Hodge, Cardenas, & Montoya, 2001). Under an attitudinal conceptualization of religiosity, a person is more religious if he or she is more committed to the religion, in terms of either the religion's teachings or its personal importance to him or her.

Religiosity has been viewed, for the most part, as an individual-level variable. However, because adolescents are under the authority of their parents, their religious involvement may be dictated by their parents. As Hodge et al. (2001) pointed out, "In cases in which religious participation is seen as an expression of individual spirituality, it may be more likely to express the parents' rather than the adolescent's spirituality" (p. 154). Many youths may be required, or at least strongly encouraged, to attend religious services as part of a family practice. In such cases, participation in religious services does not reflect an adolescent's spirituality or even a desire to participate in religious activities. Perhaps for this reason, some researchers have defined religiosity in terms of family, rather than personal, religiosity (Hardesty & Kirby, 1995). For the purposes of this article, religiosity is operationalized in terms of religious involvement. As such, it includes an individual's beliefs and

attitudes in addition to his or her behavior and activities.

### *Religiosity as a Protective Factor*

According to the National Center on Addiction and Substance Abuse (2001), 95% of Americans have some religious faith—that is, they believe in God or a higher power. This belief can provide them with a sense of security and stability. Numerous studies have revealed religiosity's protective effect on important life outcomes for adolescents (T. L. Brown, Parks, Zimmerman, & Phillips, 2001; Kutter & McDermott, 1997), such as ego strength (Markstrom, 1999), health status (D. R. Brown & Gary, 1994), and prosocial peers and behavior (Donahue & Benson, 1995). In a study of U.S. high school seniors, researchers found that religious students were least likely to engage in at-risk behavior and that religiosity was the most powerful predictor of at-risk behavior (Benson & Donahue, 1989).

Religiosity has also been associated with positive drug-related outcomes. It can protect adolescents against substance use in a number of ways. It may inhibit adolescent risk behavior by altering behavior-influencing values or by functioning as an external control factor (Amoateng & Bahr, 1986). Some religions explicitly prohibit substance use. Others, although they may not prohibit use, prescribe behavior norms that may operate to discourage substance use (Benda, 1997; McBride, Mutch, & Chitwood, 1996; Oetting, Donnermeyer, & Deffenbacher, 1998). Greater commitment to one's religion may engender greater adherence to religiously prescribed conduct norms. Studies have shown that adults and adolescents who believe in the importance of religion are less likely to use tobacco, alcohol, and illicit drugs (Free, 1994; National Center on Addiction and Substance Abuse, 2001). One national study found that among adolescents for whom religion was important, 9.9% had used marijuana some time in their life, compared with 21.5% of adolescents for whom religion was only a little important (National Center on Addiction and Substance Abuse, 2001).

Religious involvement can protect against substance use by providing opportunities for prosocial activities, which themselves may promote antidrug conduct norms, and for interaction with nondeviant peers (Amoateng & Bahr, 1986). Youth who are involved in religious activities tend to form peer groups with youth who are involved in similar activities, and they are less likely to form friendships with deviant peers (Mason & Windle, 2001; Oetting et al.,

1998). Youth who are less involved in religious activities may be more at risk. Substance users, for example, have been found to have lower church attendance and less participation in religious activities (Oetting et al., 1998). Religiosity may also be associated with resilience, the ability to recover from adverse life events, such as substance addiction. Among adults, religiosity was found to be positively correlated with successful substance abuse recovery (Pardini, Plante, Sherman, & Stump, 2000).

### *Ethnicity, Acculturation, and Religiosity*

Research focusing on Latinos has generally associated religiosity with positive outcomes, and this is largely due to the strength of religion as a force in Latino cultures. Religious institutions and beliefs provide Latinos with support during periods of stress (De La Rosa & White, 2001). Among youth, Latinos are generally more religious than non-Latino Whites or African Americans, and their religious involvement has been found to deter drug use (De La Rosa & White, 2001). A study of predominately Latino adolescents found, for instance, that spirituality protected against marijuana and hard drug use (Hodge et al., 2001). Another study of Latino eighth graders found that attendance at religious services was inversely related to drug use (Wallace, 1999).

Religiosity's protectiveness, however, may not be universal for Latinos. In their summary of research, De La Rosa and White (2001) described several studies that indicate that religiosity does not always inhibit substance use: Church attendance did not affect the drug use of Latino intravenous drug users or Latino gang members; Latino drug users' decision to stop using drugs was unaffected by their church activities; Latino gang members with higher church attendance had higher proportions of drug-using friends; and, specifically for Mexican American young men, religious identification and peer drug association were not significantly related. These findings indicate that additional research is needed to clarify whether, when, and how religiosity operates as a protective factor for Latino youth in general and for Mexicans and Mexican Americans in particular.

Other studies have suggested that immigration and acculturation status may also mediate the protective effect of religiosity. Immigrant children have to cope not only with the identity confusion typically associated with adolescence but also with the stress associated with acculturation (Birman, 1998; Hodge et al., 2001). Studies have shown that for Mexican American children, the stress of acculturation places

them at risk (Birman, 1998; Padilla & Gonzalez, 1997). These children may display a complex pattern of partial acculturation and ambivalent ethnic identity (Lopez & Stanton-Salazar, 2001). Furthermore, they may experience mainstream oppression and feelings of rejection that contribute to substance use (Hodge et al., 2001). In general, the effect of acculturation on Latinos has been to liberalize their drinking (Marsiglia & Waller, 2002; Wallace, 1999). This liberalization may be compounded by a concomitant decrease in religiosity as a result of acculturation. In their 1998 study of drug use by Latinos, African Americans, non-Latino Whites, and non-American Blacks during early and middle adolescence, Vega and Gil (1998) concluded that native-born and acculturated youth were less religious and more susceptible to drug use. Acculturation, therefore, may undercut the benefits of religiosity.

### *Religious Affiliation as a Protective Factor*

Religious affiliation is defined as identification with a particular religion. Like religiosity, religious affiliation has been shown to have a relationship with substance use. A study of a large public university, for example, determined that among 263 alcohol-using college students, those with no religious affiliation reported higher levels of drinking frequency and quantity, getting drunk, celebratory reasons for drinking, and perceived prodrinking norms than those of either a Catholic or a Protestant religious affiliation (Patock-Peckham et al., 1998). A subsequent study found that religious affiliation was an important factor in substance abuse recovery (Pardini et al., 2000).

Religions differ in their creed, organization, and beliefs, and these differences result in variations in the effects each religion has on its members (Hill, 2000). Although no religion advocates excessive substance use, a religion's stance toward substance use has considerable implications for consumption patterns among members of the religion (Clarke, Beehley, & Cochran, 1990). Among religions that forbid alcohol consumption, members are less likely to use alcohol (Hodge et al., 2001; Oetting et al., 1998). A study conducted at Brigham Young University, in Utah, illustrates this point. Of the 1,036 participating undergraduate students, 99.1% of whom were Latter Day Saints, 86% reported that they never used drugs because it would violate their religious beliefs (Merrill, Salazar, & Gardner, 2001).

Although members of religions that forbid substance use may differ from members of religions that permit substance use, the latter may differ even from each other. Catholics, for example, regularly incorporate alcohol into their worship ceremonies and, therefore, may be more tolerant of alcohol consumption than Protestants, who are less likely to use alcohol during worship. A study by L. Miller et al. (2000) supports this prediction. They found that Protestant adolescents had a later age of onset for alcohol use and were more likely to abstain from drinking than were Catholic adolescents. Another study found similar results: Protestants reported significantly higher levels of perceived drinking control than Catholics (Patock-Peckham et al., 1998).

The degree of conservatism also determines a religion's influence on its members' behavior. Generally, more conservative religions exercise a stronger influence over their congregations (Amoateng & Bahr, 1986; Free, 1994; National Center on Addiction and Substance Abuse, 2001). This influence extends to substance use behavior, as evidenced by L. Miller et al.'s (2000) study, which found that adolescents who were affiliated with more fundamentalist Christian denominations had a later age of onset for alcohol use and were more likely to abstain from drinking. These results were corroborated by a later study, conducted among 899 White and African American ninth graders, which concluded that alcohol use was inversely associated with fundamentalist religious beliefs (T. L. Brown et al., 2001).

### *Ethnicity, Acculturation, and Religious Affiliation*

Religious affiliation is itself influenced by ethnicity and acculturation, and these influences may alter the impact of affiliation on substance use for individuals of certain ethnicities and acculturation statuses. Latinos, for instance, are generally associated with Catholicism. However, in the United States, growth in Latino involvement in Protestantism is partly attributed to Protestantism's greater prospects of assimilation and upward mobility, relative to Catholicism. Protestantism offers men access to leadership roles and social participation in a close community and offers women involvement opportunities that are concordant with Latino cultural views of women's roles (Hunt, 2001). Affiliation with Protestantism, therefore, may have different effects on Latinos than Catholicism typically has, because it is associated with shifts in acculturation. For the same reasons, Protestantism may affect Latinos differently than

other groups, as so many Latinos are immigrants and, therefore, faced with acculturation. Little research has explored these possibilities, particularly as they relate to youth.

### *Religiosity and Religious Affiliation*

Although the research has not specifically focused on the relationship between religiosity and religious affiliation, several studies have hinted at it. For example, as two distinct aspects of religion, religiosity and religious affiliation have been found to differentially influence ethnic groups. Attendance at religious services, a measure of religiosity, was the strongest significant predictor of alcohol use for African American adolescents, whereas religious fundamentalism, a measure of religious affiliation, was most important for White adolescents (T. L. Brown et al., 2001; Hazel & Mohatt, 2001). Differences in religiosity have also been found between ethnic groups. For example, Protestant Latinos reported greater religious involvement than Catholic Latinos (Hunt, 2001).

Differences among religious affiliations in the effect of religiosity on substance abuse have also been found. Amoateng and Bahr's (1986) study of 17,000 high school students revealed that

religious activity had the greatest impact among Church of Jesus Christ of the Latter-Day Saints. Inactive Church of Jesus Christ of the Latter-Day Saints had consumption rates of alcohol and marijuana that were similar to the entire sample, whereas active Church of Jesus Christ of the Latter-Day Saints had consumption rates that were substantially lower than all other subgroups. (p. 71)

For alcohol, the difference between active and inactive members was almost twice as great for Church of Jesus Christ of the Latter-Day Saints members compared with fundamentalist Protestants. For marijuana, Church of Jesus Christ of the Latter-Day Saints members again had the greatest difference, followed by Jews (Amoateng & Bahr, 1986).

These findings may be explained in terms of the paradoxical user—a person who uses substances despite prohibitions.

The paradox is that such users may be prone to heavy or problem use. Within a proscriptive religious culture, substance users may become further isolated, contributing to a downward spiral into substance abuse and addiction. The paradoxical user illustrates that substance abuse does not spare any group from its devastating impact. (National Center on Addiction and Substance Abuse, 2001, p. 15)

Using a sample of predominately Mexican and Mexican American preadolescents, the present study explores the relationship between religiosity and religious affiliation as it relates to youth substance use outcomes. It also examines the influence of religion as mediated by language use as a proxy for acculturation among Mexican, Mexican American, and other Latino youth.

## Method

### *Data*

Data for the analysis come from a 2-year drug prevention study of 7,304 students from middle schools spread over nine school districts in a large Southwestern city. Investigators procured the cooperation of school districts and principals and trained approximately 200 teachers on the implementation of a prevention curriculum. In most of the 35 participating schools, non-Latino White students constitute the school's numerical minority, and students claiming at least some Mexican heritage constitute the majority. The schools serve primarily lower income, inner city neighborhoods. Within these schools, every student in seventh grade at the onset of the study was selected as a participant. One hundred students from several eighth grade classes in one of the schools also participated.

Data from the 2-year study were collected in four waves across students' seventh and eighth grade years: fall 1998, spring and fall 1999, and spring 2000. Information on religious affiliation was collected during only the first wave and on only two of three survey versions. Information on religiosity was collected in all waves but on only two of three survey versions. Only one survey version captured information on both religious affiliation and religiosity. Drug use and drug attitude information was collected at all waves.

The results reported here are based on an analysis of a subsample of the 2-year study sample, using only the first wave of data. The criteria for inclusion in the subsample analysis were that the respondent completed a survey in Wave 1 and was randomly selected to respond to the questions on both religious affiliation and religiosity, with 1,310 students meeting the criteria. Comparisons of the subsample with the rest of the Wave 1 respondents on the measures used in the analysis revealed only one statistically significant difference: Although both groups received mostly Bs, the subsample reported a slightly lower average in the B range.

University-trained survey proctors administered a 45-min written questionnaire, in English on one side of the page and Spanish on the other, during regular school hours in either a science, a health, or a homeroom class, according to individual schools' scheduling and administrative needs. Prior to survey administration, school administrators sent letters to the parents of every student explaining the study and requesting their consent to have their child participate in

the study and complete the study surveys. Institutional review boards at the investigators' university and at each school district reviewed and approved these procedures. Survey proctors informed students that the questionnaire was part of a voluntary university research project rather than a normal school activity and that their responses were guaranteed to remain confidential. Regular teachers were absent during survey administration. Members of the study team collected all questionnaires and returned them to the office for coding, and no student names or identification numbers were recorded on the questionnaires. All students present the day of survey administration agreed to complete the questionnaire. Absent students were not contacted further. Although teachers and school administrators had no access to the original data, investigators provided them with reports of school-specific, aggregated student responses.

After we excluded those who failed to report key demographic information (gender, race/ethnicity, age, socioeconomic status [SES]), there were 1,272 respondents. Students ranged from 11 to 15 years of age, but 86% were either 12 or 13 years old. There were 636 girls and 633 boys. Most of the students were from lower income families, receiving either a free (72%) or a reduced price (9%) school lunch. Three fourths (74%) of the sample claimed some Latino heritage. Of these respondents, 96% identified as either Mexican, Mexican American, or Chicano, and 14% were Spanish-language dominant: They either took the survey in Spanish or reported that they spoke Spanish with friends all or most of the time. Sixteen percent of the sample identified as White or Anglo, 7% as African American or Black, 2% as American Indian, and 1% as Asian or Pacific Islander.

### *Measures*

The key outcomes examined in this study were measured by Likert-type items that captured students' behaviors and attitudes concerning alcohol, tobacco, and marijuana use. Additional variables captured demographic and religiosity information about students.

*Lifetime and current drug use.* Dependent variables were constructed from questions about the amount and frequency of drug use, which were modeled on questionnaire items used by Flannery, Vazsonyi, Torquati, and Fridrich (1994). These measures were chosen for their developmental specificity for the age group under study and for their similarity to measures used in other large studies of early adolescent drug use (e.g., Kandel & Wu, 1995; Newcomb & Bentler, 1986). We used measures of the amount of lifetime use for three substances. Students indicated how many drinks of alcohol they had had in their entire life, how many cigarettes they had smoked, and how many times they had used marijuana. Students also indicated separately the quantity of these substances they had consumed in the past 30 days and the frequency of consumption. The original Likert-type scale responses (e.g., 1 = none to 10 = over 100 drinks, 1 = none to 10 = more than 20 packs, and 1 = never to 10 = over 30 times) had highly skewed distribu-

tions toward low rates of drug use. To improve model fit, we transformed the responses by calculating their natural log.

*Antidrug norms.* Using 17 original questionnaire items, we created seven additive scales to measure aspects of the students' drug use attitudes in terms of personal approval/disapproval, expectation of injunctions by parents and friends in response to the respondent's drug use, and perceived extent of drug use by peers and acquaintances. Two scales measured antidrug personal norms: the students' opinion on whether use of alcohol, cigarettes, and marijuana is "OK" for someone their age, and their opinion on whether it is OK for anyone to use "hard drugs" (e.g., LSD, crack, cocaine) or inhalants. The five component items for these two scales were scored from 1 (*definitely OK*) to 4 (*definitely not OK*). Two separate scales measured antidrug injunctive norms, focusing on two important reference groups for these students: parents and friends. The respondents reported how angry their parents would be (from 1 = *not at all* to 4 = *very angry*) and how their best friends would react (from 1 = *very friendly* to 4 = *very unfriendly*) if they discovered the respondent was using each of three substances (alcohol, cigarettes, and marijuana). A three-item scale measured descriptive drug use norms: students' report of the proportion of their school peers who had tried any drugs, as well as the proportion who used drugs regularly (from 1 = *hardly any* to 4 = *most*), and the number of their friends who used alcohol, cigarettes, or marijuana at least once a month, scored from zero to four or more. A maximum-likelihood factor analysis revealed the seven scales to cohere strongly (loadings ranged from a low of  $-0.42$  to a high of  $0.73$ ) around a single factor. We used the resulting factor score as a measure of the degree to which the respondent subscribed to antidrug norms.

*Religiosity and religious affiliation.* Students indicated their degree of religiosity by indicating how involved they were in their religion on a scale ranging from 1 (*not at all involved*) to 5 (*very involved*). Students also responded to the question, "What is your religion?" On the basis of their responses, students identifying a religion were grouped into the following five categories: Catholic, Protestant, Church of Jesus Christ of the Latter-Day Saints, Native American church, and other religion, with the last category capturing students identifying as Jewish, Muslim, and other religions. Students who reported that they did not practice or believe in a religion were combined into a sixth category: no affiliation. In multivariate analyses, dummy variables for each category were used, with no affiliation serving as the reference group.

*Ethnicity and control variables.* Students identifying as "Mexican, Mexican American, or Chicano/a" or as "other Latino/a or Hispanic" in any survey wave constituted the Latino group. However, this group was further broken down by a proxy measure for their degree of acculturation into majority culture, as indicated by whether they used Spanish as their predominant language. Spanish predominance was determined in two ways. With language as a proxy for acculturation (Marsiglia & Waller, 2002), students who opted to complete the questionnaire in Spanish and/or who

indicated that they spoke Spanish with their friends all or most of the time were considered to be Spanish dominant and assigned to the less acculturated Latino category. Remaining members of the Latino group were assigned to the more acculturated Latino category. Non-Latino non-Whites constituted a third category. Finally, non-Latino White students constituted a fourth category and served as the reference group in multivariate analyses.

Several control variables, in addition to ethnicity, were entered into the multivariate analyses. The student's age was measured in years. SES was distinguished with a dummy variable contrasting students who did and did not receive a free or reduced-price school lunch. The student's "usual grades in school," on a Likert scale ranging from 0 (*mostly Fs*) to 9 (*mostly As*), are a self-reported global assessment of academic performance.

### *Analysis Strategy*

The results presented in the following sections examine the role of religiosity and religious affiliation in drug use, whether religiosity or religious affiliation operates as a protective factor, whether religiosity and religious affiliation operate interactively, and whether religiosity and ethnicity operate interactively. The key findings are ordinary least squares regression results that predict the degree to which students had used drugs in their lifetime and in the recent past and the strength of their antidrug norms. In our initial equations, we entered religious affiliation and religiosity, separately and together, along with controls for age, gender, ethnicity/acculturation, SES, and academic performance. In three separate additional runs, we added the interaction terms: Religiosity  $\times$  Religious Affiliation, Religiosity  $\times$  Gender, and Religiosity  $\times$  Ethnicity/Acculturation. Only the first of these three sets produced significant interaction effects. Variance inflation factors below 10 for all equations showed no evidence of serious multicollinearity. Several of the variance inflation factors associated with the religiosity interactions for those affiliated with the Church of Jesus Christ of the Latter-Day Saints and American Indian churches—groups with a relatively small number of cases—were over 5, however.

## Results

Descriptive statistics and selected correlations for all dependent and independent variables are presented in Table 1. Dichotomous variable means are also given as percentages. The means suggest that the typical student had used alcohol in his or her lifetime more than any other substance, followed with decreasing frequency by cigarettes and then marijuana. Students, on average, reported a low level of religiosity, describing themselves as "involved just a little" in their religion. The greatest number of students (51%) were affiliated with the Catholic church. Al-

Table 1  
*Descriptive Statistics*

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	Correlation with religiosity
Religiosity	1,310	2.11	1.38	1.000
Lifetime alcohol use	1,303	0.89	0.76	-.089**
Lifetime cigarette use	1,305	0.54	0.71	-.077**
Lifetime marijuana use	1,300	0.29	0.58	-.072**
Recent alcohol use frequency	1,303	0.23	0.45	-.077**
Recent cigarette use frequency	1,307	0.13	0.38	-.057*
Recent marijuana use frequency	1,307	0.15	0.42	-.059*
Antidrug norms	1,298	0.01	0.88	.026
Age (years)	1,310	13.04	0.76	.010
Usual grades received	1,301	6.66	1.84	.082**
Catholic (Y = 1, N = 0)	1,310	0.51 (51%)	0.50	
Protestant (Y = 1, N = 0)	1,310	0.09 (9%)	0.29	
Mormon (Y = 1, N = 0)	1,310	0.03 (3%)	0.18	
American Indian church (Y = 1, N = 0)	1,310	0.03 (3%)	0.17	
Other religion (Y = 1, N = 0)	1,310	0.19 (19%)	0.39	
No religious affiliation (Y = 1, N = 0)	1,310	0.15 (15%)	0.35	
Less acculturated Latino (Y = 1, N = 0)	1,310	0.11 (11%)	0.31	
More acculturated Latino (Y = 1, N = 0)	1,310	0.63 (63%)	0.48	
Non-Hispanic White (Y = 1, N = 0)	1,310	0.15 (15%)	0.36	
Non-Hispanic other ethnicity (Y = 1, N = 0)	1,310	0.11 (11%)	0.31	
Gender (Male = 1, Female = 0)	1,282	0.50 (50%)	0.50	
Free or reduced lunch participation (Y = 1, N = 0)	1,300	0.82 (82%)	0.39	

Note. Y = yes; N = no.

\*  $p < .05$ . \*\*  $p < .01$ .

most one fifth of the sample (19%) identified as belonging to the other religion category, and 14% indicated that they had no religious affiliation because they either did not believe in or did not practice any religion. The remaining students identified as members of Protestant churches (9%), the Church of the Latter Day Saints/Church of Jesus Christ of the Latter-Day Saints (3%), or the American Indian church (3%). An analysis of variance (results not shown) indicated that although the Church of Jesus Christ of the Latter-Day Saints reported the highest religiosity, followed by Protestants, the only statistically significant difference in mean religiosity existed between students with no religious affiliation and all the groups of students reporting an affiliation.

Religiosity was negatively correlated with all substance use outcomes, although the correlations were not always significant, and positively and significantly correlated with the antidrug norms outcome. Analysis of variance tests (results not shown) revealed that less acculturated Latinos reported the highest level of religiosity. They reported significantly greater religiosity than non-Latino Whites. *t* tests (results not shown) demonstrated that religiosity did not differ by gender or SES. However, greater religiosity was correlated with higher grades.

To explore how religiosity and religious affiliation related to drug use, we produced four hierarchical ordinary least squares regression models for all outcomes. The first model entered the dichotomous religious affiliation variables, preceded by the control variables, including ethnicity/acculturation, as predictors of lifetime and recent drug use and antidrug norms (Model 1). Next, religiosity alone was modeled with the control variables (Model 2). The third model included both religious affiliation and religiosity (Model 3). Finally, Model 4 included an added interaction term: Religious Affiliation  $\times$  Religiosity.

Table 2 shows the results of the four models when predicting lifetime substance abuse. Without controls for religiosity (Model 1), Church of Jesus Christ of the Latter-Day Saints students were more likely than students without any affiliation to have a higher lifetime cigarette use. Without controls for religious affiliation (Model 2), religiosity had a protective effect only on lifetime alcohol use. The effect of Church of Jesus Christ of the Latter-Day Saints affiliation on lifetime cigarette use persisted when we controlled for religiosity (Model 3) and appeared also for lifetime marijuana use. Furthermore, once religiosity was controlled, Catholic, Protestant, and other religion affiliations were associated with greater life-

Table 2  
Effects on Lifetime Alcohol, Cigarette, and Marijuana Use—Unstandardized Regression Coefficients

Variable	Lifetime alcohol use				Lifetime cigarette use				Lifetime marijuana use			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Catholic	.08		.17*	.20*	-.03		.02	-.02	-.04		-.01	-.11
Protestant	.16		.25**	.27*	.06		.12	.08	.02		.06	-.04
Mormon	.11		.23	.40*	.29*		.37**	.39**	.17		.22*	.24*
American Indian church	.00		.08	.12	.05		.10	.06	.03		.07	-.03
Other religion	.09		.18*	.22*	-.00		.05	.02	-.05		-.01	-.11
Religiosity		-.04**	-.06***	-.08*		-.03	-.04*	-.00		-.02	-.03*	.06
Catholic × Religiosity				.04				-.03				-.09*
Protestant × Religiosity				.07				-.03				-.09
Mormon × Religiosity				-.16				-.11				-.24**
American Indian Church × Religiosity				-.02				.01				-.09
Other Religion × Religiosity				.01				-.05				-.11**
Male	.09*	.08	.09*	.09*	.07	.06	.07	.07	.02	.01	.02	.02
Less acculturated Latino	-.13	-.11	-.11	-.11	-.05	-.06	-.03	-.04	-.02	-.02	-.01	-.02
More acculturated Latino	.18**	.19**	.18**	.18**	.16*	.13*	.16**	.15*	.17***	.16**	.17***	.16**
Non-Latino, Non-White	-.15	-.14	-.14	-.14	-.01	.01	-.00	-.01	.13	.14*	.13*	.12
Age	.06*	.06*	.06*	.06*	.10***	.10***	.10***	.10***	.09***	.09***	.09***	.08***
Socioeconomic status	-.07	-.09	-.08	-.08	.01	.01	.01	.01	-.01	-.01	-.01	-.01
Usual grades	-.07***	-.07***	-.07***	-.07***	-.08***	-.08***	-.08***	-.08***	-.07***	-.07***	-.07***	-.06***

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

time alcohol use, relative to students unaffiliated with a religion. Also illustrated in Model 3, the protective effect of religiosity on lifetime alcohol use persisted when we controlled for religious affiliation and appeared for lifetime cigarette and marijuana use.

In Model 4, an interaction between religious affiliation and religiosity was identified only for lifetime marijuana use. Catholic, Church of Jesus Christ of the Latter-Day Saints, and other religion affiliations were associated with less lifetime marijuana use as the students' religiosity increased. The independent effects of religious affiliation identified in Model 3 persisted with Church of Jesus Christ of the Latter-Day Saints affiliation, appearing for the first time to positively affect lifetime alcohol use. The independent protective effects of religiosity remained only for lifetime alcohol use.

Turning now to the demographic control variables, we note that gender predicted only lifetime alcohol use. Boys reported higher alcohol use than girls. Older students and students with poorer grades reported greater use of all three drugs. Relative to non-Latino White students, more acculturated Latino students reported greater substance use, and non-Latino other ethnicity students reported greater lifetime marijuana use.

Table 3 shows the results of the four models when predicting the frequency of recent substance use. When religious affiliation was modeled alone, Church of Jesus Christ of the Latter-Day Saints students reported higher frequencies of recent cigarette and marijuana use, and Catholic students reported a lower frequency of recent marijuana use. When religiosity was modeled alone, it yielded a protective effect only for recent alcohol use. In combination, both religious affiliation and religiosity had effects; however, they were in opposite directions. Church of Jesus Christ of the Latter-Day Saints affiliation was associated with greater frequencies of recent use of all three substances. In contrast, greater religiosity was associated with lower frequencies of recent alcohol and cigarette use.

The independent positive effect of Church of Jesus Christ of the Latter-Day Saints affiliation on recent use of all three substances identified in previous models persisted when we controlled for interaction effects. In addition, greater religiosity in association with Church of Jesus Christ of the Latter-Day Saints affiliation predicted less frequent recent marijuana use. Greater religiosity among Protestants and other faith members was associated with less frequent recent marijuana use. Older students reported higher frequencies of recent use, whereas students with bet-

ter grades reported less frequent recent use. Relative to non-Latino Whites, more acculturated Latinos reported higher frequencies of recent substance use.

Somewhat similar patterns of findings were obtained when we predicted antidrug norms (see Table 4). Church of Jesus Christ of the Latter-Day Saints affiliation was associated with weaker antidrug norms when modeled alone, in combination with religiosity, and when we controlled for interaction effects. Protestant affiliation was also associated with weaker antidrug norms when modeled alone and in combination with religiosity. Unlike the patterns in previous equations, religiosity showed no independent association with antidrug norms in any of the four models. However, students affiliated with Mormonism or who fell in the other religion category reported stronger antidrug norms as their religiosity increased. Boys, youth with poorer grades, and youth of lower SES reported weaker antidrug norms. In addition, all ethnic groups reported weaker antidrug norms relative to non-Latino Whites.

Figure 1 provides a pictorial summary of repeated patterns found in the regressions results, as well as a sense of the magnitude of differences in substance use by religiosity and religious affiliation. The bar chart shows the percentage of students reporting lifetime marijuana use by religious affiliation and religiosity. Moderate to heavy users included students who reported using marijuana anywhere from "4–7 times" to "more than 30 times" in their lifetime. Low users included students who reported using marijuana "once" or "2–3 times" in their lifetime. Religiosity was dichotomized into not religious (not at all involved, involved just a little, or somewhat involved) and religious (involved or very involved).

The figure illustrates many earlier trends observed in the regressions. First, religiosity does not appear to be uniformly protective. The more religious Catholic, Church of Jesus Christ of the Latter-Day Saints, and other religion-affiliated students reported less marijuana use overall. In the case of Church of Jesus Christ of the Latter-Day Saints members and other religion-affiliated youth, the more religious reported substantially less moderate to heavy use than the nonreligious. In the case of Catholics, the more religious reported light marijuana use less often than the nonreligious. Church of Jesus Christ of the Latter-Day Saints affiliation generated the greatest gap in any use between religious and nonreligious students. Second, religious affiliation appeared to have little protective effect. Relative to students with no affiliation, students affiliated with a religion reported similar lifetime experience with marijuana. Third,

Table 3  
Effects on the Frequency of Recent Alcohol, Cigarette, and Marijuana Use—Unstandardized Regression Coefficients

Variable	Frequency of recent alcohol use				Frequency of recent cigarette use				Frequency of recent marijuana use			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Catholic	.03		.07	.04	-.01		.01	.00	-.08*		-.05	-.12*
Protestant	.00		.05	.01	.05		.07	.06	-.04		-.01	-.06
Mormon	.12		.18*	.19*	.17**		.21**	.25**	.15*		.18*	.25**
American Indian church	.07		.11	.08	.05		.07	.06	.08		.10	.04
Other religion	.03		.07	.04	-.03		-.00	-.01	-.03		-.01	-.06
Religiosity		-.02*	-.03**	.00		-.01	-.02*	-.01		-.02	-.02	.03
Catholic × Religiosity				-.03				-.00				-.04
Protestant × Religiosity				-.02				-.00				-.07*
Mormon × Religiosity				-.08				-.07				-.21***
American Indian Church × Religiosity				-.10				.01				.03
Other Religion × Religiosity				-.04				-.02				-.08**
Male	-.02	-.02	-.02	-.02	.02	.02	.02	.03	.03	.03	.03	.03
Less acculturated Latino	.05	.07	.06	.06	.04	.04	.05	.05	.07	.06	.08	.07
More acculturated Latino	.16***	.16***	.16***	.15***	.07*	.06	.07*	.06	.16***	.14***	.16***	.14***
Non-Latino, Non-White	-.03	-.03	-.03	-.03	-.01	.00	-.00	-.01	.08	.10*	.09	.07
Age	.03	.03	.03	.03	.02	.02	.02	.02	.05**	.05**	.05**	.05**
Socioeconomic status	-.04	-.05	-.04	-.04	-.06	-.06*	-.06	-.06	-.06	-.06	-.06	-.05
Usual grades	-.04***	-.04***	-.03***	-.03***	-.03***	-.03***	-.03***	-.03***	-.04***	-.04***	-.03***	-.03***

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 4  
Effects on Antidrug Norms—Unstandardized Regression Coefficients

Variable	Model			
	1	2	3	4
Catholic	.01		-.01	.11
Protestant	-.24*		-.26*	-.14
Mormon	-.54***		-.57***	-.58**
American Indian church	-.26		-.28	-.15
Other religion	.05		.02	.13
Religiosity		.00	.02	-.08
Catholic × Religiosity				.10
Protestant × Religiosity				.11
Mormon × Religiosity				.28*
American Indian Church × Religiosity				.01
Other Religion × Religiosity				.16*
Male	-.22***	-.20***	-.22***	-.22***
Less acculturated Latino	-.23*	-.19	-.24*	-.22*
More acculturated Latino	-.42***	-.39***	-.43***	-.40***
Non-Latino, Non-White	-.27**	-.29**	-.27**	-.25*
Age	-.06	-.06	-.06	-.05
Socioeconomic status	.18**	.18**	.18**	.17*
Usual grades	.08***	.09***	.08***	.08***

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Church of Jesus Christ of the Latter-Day Saints students constituted a unique case.

Clearly evident are the large proportion (60%) of students with lifetime experience using marijuana among nonreligious Church of Jesus Christ of the Latter-Day Saints members and the relatively large proportion of this group that reported moderate to heavy marijuana use (33%). The gap between non-religious and religious Church of Jesus Christ of the Latter-Day Saints students reflects the regression results, showing that the protective effect of Church of

Jesus Christ of the Latter-Day Saints affiliation increased with greater religiosity. These results corroborate earlier findings that religious involvement among Church of Jesus Christ of the Latter-Day Saints members moderates the influence of affiliation on substance use outcomes (Amoateng & Bahr, 1986).

The high rates of use among nonreligious Church of Jesus Christ of the Latter-Day Saints students may be reflective of an atypical subgroup, especially given that the total number of Church of Jesus Christ of the Latter-Day Saints in the sample was relatively small: 45. An analysis of our sample's Church of Jesus Christ of the Latter-Day Saints students revealed that the group was predominately female (64%) and Mexican American (56%) and that the Church of Jesus Christ of the Latter-Day Saints group reporting moderate to heavy substance use disproportionately consisted of more acculturated students.

In separate sets of equations (results not shown), we examined the effects on all outcomes of interactions of religiosity with gender and interactions of religiosity with ethnicity/ acculturation. Paradoxically, less acculturated Latino students were associated with weaker antidrug norms as their religiosity increased. We also examined effects separately for Catholics only, the most common religious affiliation reported, to ensure that multivariate results that simultaneously controlled for religious affiliation, religiosity, and ethnicity did not obscure important rela-

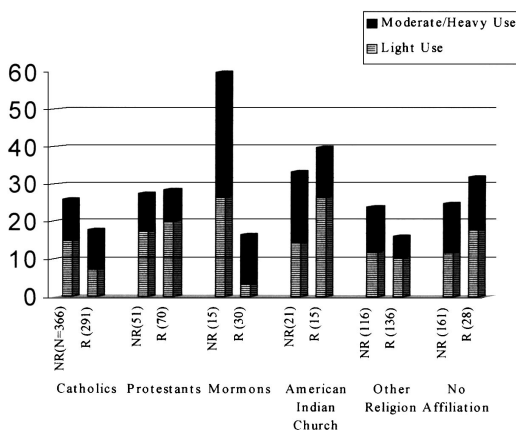


Figure 1. Percentage of participants reporting use of marijuana (lifetime) by religious affiliation and religiosity. NR = not religious; R = religious.

tionships that pertained to the majority of respondents. These results confirmed that religiosity was not generally a factor in drug use among Catholic respondents.

## Discussion

This study confirms some findings previously reported on the protective effects of religion (T. L. Brown et al., 2001; Hodge et al., 2001; Kutter & McDermott, 1997; Wallace & Bachman, 1991) and raises important questions about religion in the life of Mexican, Mexican American, and other Latino adolescents in the Southwest. Religiosity was found to be associated with lower lifetime alcohol, cigarette, and marijuana use and less frequent recent alcohol and cigarette use. Furthermore, within certain religious affiliations, more religious youth, relative to less religious youth, reported better outcomes for some substances. Religious affiliation, however, was not so clearly protective. We explain this finding in terms of the association between religion and culture and the relationship between religious involvement and acculturation in the life of Mexican and Mexican American youth. Religiosity and ethnic culture appear to be webbed together such that formally belonging to a particular religion is unnecessary to achieve a protective effect against drugs.

Among the largest religious group in the sample, Catholics, religious affiliation was protective against recent marijuana use, yet it was associated with greater reported lifetime alcohol use. This difference in effects is perhaps explained by the predominance in the sample of Mexican and Mexican American youth. For many of these youth, especially those who were recent immigrants, Catholicism may be an integral part of their Mexican heritage and culture. Because of its ritualistic incorporation into religious and cultural activities, alcohol use may be viewed with greater tolerance. Marijuana's lack of similar cultural support may explain its lower usage among Catholic youth.

In the case of Church of Jesus Christ of the Latter-Day Saints youth, who were a relatively smaller group, contrasts between very religious and very nonreligious students resulted in the study's largest and most consistent differences in drug use and drug norms. The finding of heightened risk among some Church of Jesus Christ of the Latter-Day Saints students may reflect the concept of the paradoxical user described in the literature (National Center on Addiction and Substance Abuse, 2001). Alternatively, it may reflect the effects of being an atypical member

of the Church of Jesus Christ of the Latter-Day Saints faith. Mexican American Church of Jesus Christ of the Latter-Day Saints youth may struggle to adjust to the cultural similarities and differences they experience when interacting with Mexican American Catholic youth, who make up the majority of their peers, and when attempting to conform to a religion that may not be culturally familiar. Their uncharacteristic religious affiliation may produce identity conflicts, making the youth especially vulnerable to substance use. Further study is needed to clarify the social origins and contexts of Latino Church of Jesus Christ of the Latter-Day Saints youth.

The finding of a risk rather than a protective effect of religious affiliation on some outcomes in this study is perhaps explained by the relationship between affiliation and acculturation. Religious affiliation may be an avenue of accelerated acculturation and, in some cases, assimilation into the host culture for some Latino youth, heightening their risk of substance use rather than suppressing it. As youth interact with organized religion, they may, for instance, experience acculturation stress (Birman, 1998; Hodge et al., 2001). A predominately Spanish-speaking Catholic congregation may maintain and strengthen a Mexican national preadolescent's cultural ties and protect against permissive drug norms and risky drug behaviors. A congregation in which Mexican nationals are a very small minority and there is less culturally specific content, in contrast, may function less protectively.

It is also possible, however, that mixed-ethnicity congregations aid the adaptive process and mitigate acculturation stress, thereby buffering against substance use. Because this study did not capture data on the ethnic make-up or language predominance of the religious congregations with which students were affiliated, we were unable to assess their effects. Future studies, however, could explore these possibilities by capturing data on the characteristics of the religious congregations with which students report affiliations. For example, one could compare preadolescents of similar backgrounds in Mexican-only versus mixed-ethnicity congregations to determine which group reports better antidrug normative and behavioral outcomes.

Another potential explanation for the findings on religious affiliation may relate to the composition of the unaffiliated group. In the context of migrant or immigrant Mexicans, Mexican Americans, and other Latinos, religious affiliation may be an avenue to establish social ties with others of similar background in a new community. Once the new immigrants or

migrants have established themselves, their formal religious affiliation may cease, even though related cultural/religious values and norms continue to be reinforced through community affiliation. Unaffiliated youth living under such circumstances, therefore, may be more influenced by religion than their affiliation status suggests. The contrast between religiously affiliated and unaffiliated youth might not have been sufficient, as measured in this study, to capture all the protective effects of the religions studied. Churches are seen by some not just as houses of worship but more as community centers where connections are made and social and economic needs are met.

A related point is that a lack of religious affiliation does not uniformly go hand in hand with low or no religiosity. An appreciable minority—about 1 in 7—of those who claimed no particular religious affiliation nonetheless reported that they were “involved” or “very involved” in religion. Unaffiliated youth may follow home- or community-based religious practices, and such practices have been found to relate to substance use outcomes (e.g., National Center on Addiction and Substance Abuse, 2001).

A limitation of this study is its failure to distinguish among types of religiosity, including those that do not depend on formal religious affiliation. As stated previously, for Mexicans, Mexican Americans, and other Latinos, religion is tied to culture, and changes in families’ affiliation with religious institutions can be associated with changes in acculturation status. Youth and their family may become affiliated with organized religion for other than spiritual reasons, such as social integration into a new community. Therefore, a single-item measure of religious involvement, such as that used in this study, may not adequately separate the effects on substance use of better social adaptation due to religious involvement; the effects of adherence to spiritually prescribed behavioral norms; and the effects of some other religious mechanism, such as strong faith in a deity. Additional measures, such as measures of motivations for religious involvement, could help to illuminate the role of religion, permitting a better assessment of its potential protective effects.

This study’s findings support the notion that religion has multiple pathways of influence on substance use and suggest that for Mexican, Mexican American, and other Latino youth the distinctions among such pathways are essential to understanding religion’s role in preventing substance use. Furthermore, the findings highlight for future research the importance of distinguishing between culture and religion

as protective factors. In the Mexican, Mexican American, and other Latino cases, future research should focus on understanding how to better use the nexus between religion and ethnic culture as a resource to develop and test innovative and effective youth prevention programs.

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