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## Associations of maternal and adolescent religiosity and spirituality with adolescent alcohol use in Chile: Implications for social work practice among Chilean social workers

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### Abstract

To inform social work practice with adolescents who may consume alcohol, we examined if alcohol use among Chilean adolescents varied as a function of their mothers' and their own religiosity and spirituality. Data were from 787 Chilean adolescents and their mothers. Adolescent spirituality was a protective factor against more deleterious alcohol use. Parental monitoring and alcohol using opportunities mediated the associations. The practice of religious behaviors by themselves without meaningful faith were not associated with alcohol use among adolescents. Implications for social work practice are discussed.

### Keywords

Religiosity; spirituality; adolescents; alcohol use; alcohol use opportunities; Chile; parental monitoring

### Introduction

The benefits of religiosity and spirituality have been well documented in the health, mental health, and substance use fields (Chitwood, Weiss, and Leukefeld, 2008; Koenig, McCullough, and Larson, 2001; Miller and Thoresen, 2003). Religious affiliation, participation in religious activities, and reliance on religious and spiritual beliefs to make decisions in life have been found to be associated with improved health and mental health and decrease in substance use (Chitwood, Weiss, and Leukefeld, 2008; Ellison and Levin, 1998; Ellison, Hummer, and Cormier et al., 2000; Hummer, Rogers, and Nam et al., 1999;

Idler and George, 1998; Koenig et al., 2001). Studies of religiosity and substance use among adolescents from around the world consistently point to an inverse association between religiosity and alcohol using behaviors (Chitwood, Weiss, and Leukefeld, 2008; Chen, Dormitzer, Bejarano, et al., 2002). Findings from a cross-sectional study of the association between religiosity and alcohol use among adolescents in seven countries in Central America also points to the potentially protective role of religiosity but this appears mainly to serve to delay onset, rather than preventing adolescents from using alcohol in more frequent and larger quantities once onset has occurred (Chen, Dormitzer, Bejarano, et al., 2002).

It is interesting that despite the overwhelming evidence of an inverse association of religiosity and spirituality with unhealthy behaviors, social workers and individuals from allied fields specializing in substance use prevention generally lack skills, knowledge, and perhaps even interest to conduct an assessment of their clients' religiosity and spirituality and identify ways by which some of their clients' practices and beliefs may be supported or strengthened to benefit clients (Furness and Gilligan, 2010; Sheridan, 2012). In Chile, where the present study was conducted, a large number of youth belong to a religion.

Approximately 62.5% and 66% of 15–29 and 15–19 year olds, respectively, have a religious affiliation (72.5% Catholics, 19.0% Evangelical, 2.8% Other Christian), and 89.9% of youth believe in God (Instituto Nacional de la Juventud, 2009). Despite the importance of religiosity and spirituality for the Chilean population, there is little knowledge of the extent to which religiosity and spirituality may be associated with substance using behaviors among youth in Chile. Before continuing with this discussion, we note that in this study we use the term religiosity to refer to religious behaviors and practices (e.g., belonging to a religious group, regular church attendance and praying) and the term spirituality to refer to a more personal relationship with the transcendent (Koenig et al., 2001), a sort of personal connection with the divine (Seaward, 2001) and, thus a more relational and intimate component than on rules and behaviors (Horsburgh, 1997). This distinction is in line with scholars who point to the importance of considering religiosity and spirituality as related but separate constructs (Hill, Pargament, and Wood et al., 2000; Pargament, 1997; Zinnbauer, Pargament, and Cole et al., 1997; Zinnbauer, Pargament, and Scott, 1999).

Although both religiosity and spirituality are critical components of understanding youth substance use patterns, there has been limited research that examines these two concepts simultaneously in the Chilean context. A study of Chilean youth found a statistically significant inverse association between the importance youth placed in their religious faith to make daily life decisions and alcohol consuming behaviors (e.g., frequency and quantity of alcohol consumption in the past month and the number of times drunkenness resulted from consuming alcohol), but only among those youth whose propensity to be religious was the lowest (Delva et al, 2012). In another study of Chilean adolescents no differences were between the more religious and the non-religious adolescents in the frequency with which these youth would get drunk in the past month (Florenzano et al., 2008).

In another study of religiosity among adolescents in Chile, an inverse association was found between the measure frequency of attendance at religious services and frequency (number of days) of use of alcohol (Neckelman, 2009). Although this study relied on national representative data only religiosity was asked in the survey. The survey did not include

questions about spirituality to allow for analysis and the cross-sectional design considerably limited what one can conclude in terms of temporal associations between religiosity and spirituality with substance use among Chilean adolescents.

Therefore, the lack of research on religiosity, spirituality, and substance use among youth in Chile suggests that Chilean social workers and other health and mental health service providers have primarily to rely on findings of religiosity, spirituality, and substance use research conducted with very different populations under very different socio-political and economic contexts from those in Chile. In addition to this scarcity of locally-generated research on spirituality, religiosity, and alcohol use, and despite the fact that most Chilean adults and youth subscribe to some religion and that social workers work with youths in practically all settings where youth and families may be found (e.g., NGOs serving youth, government and locally sponsored organizations serving youth, schools), courses in spirituality/religiosity and social intervention are not currently being taught at any institution in the country, including major Catholic-oriented schools of social work and institutions.<sup>1</sup> From this preliminary review, it can be reasonably assumed that the profession is not offering an adequate culturally competent professional training that accounts for the ways by which their clients' religious practices and spiritual beliefs guide their clients' lives.

With the above in mind, the purpose of this study was to examine if levels of alcohol use among Chilean adolescents varied as a function of their mothers and their own religiosity and spirituality. We studied this association exploring two main ideas. First, we tested if adolescents' religiosity and spirituality acted as preventing factors against adolescent alcohol use. Second, we explored whether parental monitoring and opportunities to acquire and consume alcohol mediated the association among religiosity, spirituality, and alcohol use. We investigated the degree to which parental monitoring and opportunities to use alcohol were mediators because prior research has found parental monitoring and drug use opportunities to be important predictors of alcohol use (Chilcoat and Anthony, 1996; Nash, McQueen, and Bray, 2005; Wagner and Anthony, 2002; Weitzman, Folkman, Folkman, et al., 2003). Therefore, we thought it was important to include these variables in the model we tested.

Findings from this research may provide additional empirical information about the direct and indirect (via parental monitoring and alcohol use opportunities) associations of religiosity and spirituality with levels of alcohol use that can serve to guide social work practice with adolescents and families in Chile.

## Methods

### Sample

Data for this study come from adolescents participating in the [name removed to maintain anonymity of authors], a study of urban adolescents in Santiago, Chile. The study is a collaborative project between U.S. and Chilean institutions with funding from the U.S.

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<sup>1</sup>A preliminary review of course listings in schools and departments of social work in Chile was conducted by one of the co-authors in March 2012.

National Institute on Drug Abuse. Participants for this study included adolescents who in infancy participated in a study of iron supplementation (Lozoff, De Andraca, Castillo et al., 2003). Participants (n=1657) were mothers and healthy infants who in 1991–1996 were recruited from working-class communities of mid- to low socioeconomic backgrounds in the southern part of Santiago. Subsequently, in 2003–2007, when the children were 10 years old, approximately 1100 of these families were successfully re-interviewed whereby the mothers completed a battery of questions about their household characteristics, religiosity, and stress, among other constructs. Out of these families, 1076 participated again in 2007–2010 when the youth were 12–17 year olds. Both, the mother (or another adult caregiver) and the adolescents, completed a 2-hr administered battery of questions on substance using behaviors and a number of constructs of interest to the study.

The analytic sample for the present study comes from the 787 adolescents selected based on two criteria. First, 793 adolescents were selected out of the 1076 whose mothers (rather than another adult caretaker) completed the adult interview when the youth was 10 years old and then 12–17 years of age. Second, from these 793 adolescents, eight were excluded due to incomplete data in all variables involved in the analysis. There were no differences between the analytic sample and the omitted sample (n=283) on the proportion of adolescent males and females ( $\chi^2(1)=1.99, p>.38$ ), but adolescents in the analytic sample were approximately half a year younger (Mean age=14.32, SD=1.46) than adolescents in the omitted sample (Mean age=15.18, SD=1.51;  $p<0.001$ ).

## Measures

The study's dependent variable, level of alcohol consumption, was generated based on questions that asked adolescents about their alcohol consumption behaviors in their lives, past year, and past month. Participants were categorized with the following gradient: 0=non-drinkers (never drank alcohol in their lifetime or did not drink in the year prior to the interview), 1=infrequent drinkers (drank within the past year but not in the past 30 days or in the past 30 days drank once and only one drink), 2=light/moderate drinkers (in the past 30 days drank more than once but less than 4 times or no more than 4 drinks), 3=moderate/heavy drinkers (in the past 30 days drank on 5–16 days or no more than 16 drinks), or 4=heavy/very heavy drinkers (in the past 30 days drank for at least 17 days or drank more than 16 drinks). The study's independent variables are discussed next.

One of the study's independent variables was a latent factor assessing mother's religiosity using 8 questions asked of the mother when the youth was 10 years old. This latent factor was estimated using Confirmatory Factor Analysis (CFA). Examples of the 8 questions included as indicators are: "How frequently do you go to mass or religious services?" (1=Never, 2=Less than once a year, 3=A few times a year, 4=A few times a month, 5=At least once a week, and 6=Almost every day); "Do you have a formal, official, job/responsibility in your church or place of worship?" (0=No, 1=Yes); "How frequently do you ask others to pray for you? (1=Never, 2=A few times a year, 3=A few times a month, 4=At least once a week, and 5=Almost every day). The model fit for this latent indicator of mother's religiosity was excellent (RMSEA=0.046 RMSEA 90% CI = (0.033–0.06), CFI=0.979 and TLI=0.971).

Adolescent's religiosity was also assessed using a latent factor with two indicators when these youth were 12–17 years old. This latent factor, using CFA, was based on the following two indicators: "In the past year, how often have you attended religious services, not counting weddings, baptisms, bar/bat mitzvahs, funerals, or similar religious ceremonies? (1=Never, 2=A few times, 3=About once a month, 4=2–3 times a month, 5=Once a week, 6=More than once a week) and "Are you currently involved in any religious youth groups? By youth group we mean an organized group of young people that meets regularly for social time together and to learn more about their religious faith" (0=No, 1=Yes). The model fit for the combined set of these three latent factors was also excellent (RMSEA=0.048 RMSEA 90% CI = (0.032–0.064), CFI=0.994 and TLI=0.991).

Also assessed was a latent factor for mother's spirituality using three indicators measured when their children were 12–17 years of age. The first was based on this question: "How important or unimportant is religious faith in how you live your daily life?" (1=Not important at all, 2=Not very important, 3=Somewhat important, 4=Very important, 5=Extremely important). The second was based on this question: "How important or unimportant is religious faith in making major life decisions? (1=Not important at all, 2=Not very important, 3=Somewhat important, 4=Very important, 5=Extremely important). The third was based on this question: "How often do you pray by yourself alone?" (1=Never, 2=A few times a month, 3=About once a week, 4=About once a day, 5=More than once a day). The same indicators were used to create a latent factor for adolescents' spirituality when these were 12–17 years old.

The study's mediating variables were a latent factor of parental monitoring using adolescents' reports and a latent factor based on the mothers' reports, as well as a latent variable of the adolescents' reports of opportunities they have to acquire alcohol. These variables are described next.

The latent factor for reports of parental monitoring by the adolescents consisted of responses to questions about the extent to which they perceived parental awareness and knowledge of their whereabouts. For this study we selected seven questions from an originally 10-item scale of parental monitoring (Patterson and Capaldi, 1998) because they were identical in both the youth and parent questionnaires. Some of the questions were "If your mom/dad or guardian are not home, how often do you leave a note for them about where you are going?" and "How often, before you go out, do you tell your mom/dad or guardian when you will be back." The response categories for these questions were 1=All of the time, 2=Most of the time, 3=Sometimes, 4=Hardly ever, and 5=Never. After reverse coding all of the items so that higher scores represented more parental monitoring, CFA was used to test and estimate the latent factor. The model fit indices were very good (RMSEA=0.043 RMSEA 90% CI = (0.025–0.062), CFI=0.984 and TLI=0.975).

The latent factor for reports of parental monitoring by the mothers were based on the same seven questions that assessed the adolescents' perception of parental monitoring (Patterson and Capaldi, 1998) with higher scores representing greater levels of parental reports of parental monitoring. As in the case of the youth reports we fitted a CFA to estimate the measurement part for the mothers' report of their monitoring of their children. The fit

indices were good. (RMSEA=0.058 RMSEA 90% CI = (0.041–0.075), CFI=0.964 and TLI=0.95).

The latent factor measuring ‘opportunities to use alcohol’ by adolescents was created using three indicators. First, adolescents were asked if they ever had an opportunity to drink alcohol (cerveza, vino, pisco, pisco, jote, ponche, etc..., all common alcoholic drinks in Chile). Those who answered affirmatively were then asked to report the number of occasions alcohol was offered to them in their lifetime: (1=1–2 occasions, 2=3–5 occasions, 3=6–9 occasions, 4=10–19 occasions, 5=20–39 occasions, and 6=40 or more occasions). Using these data, the first indicator, called ‘alcohol opportunities’, coded adolescents into one of these four groups: 0=Never, 1=1–2 occasions, 2=3–9 occasions, or 3=10 or more occasions. The second indicator was based on how difficult it would be to acquire alcohol if they wanted to (1=not able to or don’t know, 2=difficult or very difficult, 3=easy, or 4=very easy). The third indicator was based on how fast they could get alcohol if they wanted to (1=not able to or don’t know, 2=more than 5 hours to more than one week, 3=1 to 5 hours, 4=less than 1 hour). The fit indices for substance use opportunities were excellent (RMSEA=0.03 RMSEA 90% CI = (0.018–0.040), CFI=0.999 and TLI=0.997).

Finally, the adolescents’ sex, age, parental education, family income and occupational prestige were also obtained from the interviews of the adolescents and mothers. Gender and age were included in the analyses as statistical controls in addition to an indicator of socioeconomic status (SES) that was constructed based on information about parental education, family income, and parents’ occupational prestige.

## Analysis

The analytic approach used in this study consists of two main parts. First we estimated the measurement models, a common practice when using structural equations modeling (SEM) (Bollen, 1989; Kline, 2004). We then estimated the pathways and the direct and indirect associations of the religiosity/spirituality variables on the dependent variable, levels of alcohol consumption. For the measurement part, CFA was used to estimate the factor structure of all the latent models. Once the measurement part had adequate indicators of model fit - RMSE below 0.05 (Steiger, 1990), RMSE CI between (0.1– 0.8) (Hu and Bentler, 1995), TLI and CFI above 0.95 (Hu and Bentler, 1999), the second part of the analysis was estimated using SEM (Bollen, 1989).

All analysis took into consideration the specific distribution of the variables, that is, the path analyses did not rely on the assumption of continuous measurements. Categorical indicators as well as the categorical nature of the outcome were incorporated in the estimations with ordinal probit regression. The SEM analyses were performed using MPLUS 6.12 (Muthén and Muthén, 1998–2010 while all data transformation was performed in STATA 12 (StataCorp, 2011).

Missing data, about 5%, were treated with the MPLUS default which estimated the models using all available data. Finally, we conducted multi-group analysis by gender and age groups. We did not find any substantial differences between male and female adolescents nor among age groups. We also tested separate models by religion membership (no religious

affiliation, Catholic, other religions). The different set of analysis did not show any consistent and meaningful differences from those found when all groups were combined. We also tested the association of religious affiliation with the dependent variable by including it in the path models but because we found no association we removed this variable from the final model.

## Results

The mean age of the adolescents was 14.3 years old ( $SD=1.5$ ) and 48% were female. Mean age of the mothers was 40.6 ( $SD=6.32$ ). Fifty-six percent of the adolescents reported being Catholic, 23% Evangelical, about 1% other (e.g., Jehovah's Witness, Jewish, Buddhist), and 20% reporting no religious affiliation. Mothers' religious membership was 65% Catholic, 25% Evangelical, 1% other, and 9% no religious affiliation.

Approximately 60% of adolescents were non-drinkers, 23% were infrequent drinkers, 7% light/moderate drinkers, 5% moderate/heavy drinkers, and 3% heavy/very heavy drinkers. The results of the path analysis are displayed in Figure 1 (for parsimony's sake, the measurement part of the model -- that is the indicators that make up each of the latent variables and their corresponding correlations -- is not displayed). Figure 1 displays direct and indirect statistically significant paths at conventional level of  $p<0.05$ . Overall, we observe direct associations of mothers' religiosity when the adolescents were 10 years old (left-hand side of dotted line in Figure 1) with their own spirituality when their children became adolescents and with their adolescents' self-reported religiosity and spirituality (right-hand side of dotted line in Figure 1). We also note direct associations of mothers' spirituality with increased alcohol consumption among adolescents and direct associations of adolescents' spirituality, but not religiosity, with decreased levels of alcohol consumption.

Given that an ordinal probit model was used to estimate the pathways, the interpretation of the coefficients is not as straightforward as it is when analyses are conducted with ordinary least square regression. For example, among adolescents, the direct association of spirituality with drinking was  $-0.221$  and the total association (direct and indirect) was  $-0.293$  ( $p<0.01$ ) meaning that adolescents who reported higher levels of spirituality also reported lower levels of alcohol consumption. To more easily interpret the coefficients, a series of probabilities were computed and presented in Table 1. To compute these probabilities, we set the values of all the covariates to their sample average. Thus, the estimated probabilities described below are for an adolescent with average SES, about 14.2 years old, average levels of parental monitoring, average opportunities of acquiring alcohol, average levels of religiosity, and whose mother had average level of religiosity when the youth were ten years old (note that adolescent gender was set to the average 0.5 to make the interpretation simpler).

Table 1 presents the estimated probabilities for the same group of adolescents whose characteristics were set to average as described above. For these adolescents, their probabilities of belonging to any drinking category (nondrinker, infrequent, light, moderate or heavy) was conditioned based on the mothers' and adolescents' spirituality levels. We

found that adolescents with low levels of spirituality would be expected to have a 53% chance (.53 probability) of being a nondrinker after controlling for all other factors. As the levels of the adolescents spirituality increase to average and high, the corresponding probabilities of being a nondrinker increase to 63% and 70%, respectively.

Similarly, the probabilities of being a moderate drinker and heavy drinker decrease as the level of the adolescents spirituality increase. For example, adolescents with low levels of spirituality, on average, have a 9% probability of being a light drinker, this probability decreases to 6% and 5% as their spirituality increases to average and high levels, respectively. The other probabilities in Table 1 can be interpreted in the same manner as described above.

The association between the adolescents' spirituality and alcohol consumption was mediated by their report of parental monitoring and opportunities to acquire alcohol. Higher levels of adolescent spirituality was associated with higher levels of parental monitoring which in turn was associated with reduced opportunities of alcohol consumption. The overall mediated association was statistically significant (coefficient=-0.072,  $p<0.01$ ). Thus, the combined direct and indirect association of adolescent spirituality with alcohol consumption was estimated to be -0.293. This association, translated in terms of probabilities, is presented in Table 1 and can be interpreted as described earlier.

Mother's spirituality also was associated with youth alcohol consumption behavior. More specifically, an adolescent, holding all covariates constant at the sample averages, whose mother has low levels of spirituality, has a 68% chance of being a nondrinker. If the mother's level of spirituality were average then the adolescent's probability of being a nondrinker would be 63%. This probability would increase to 56% if his or her mother had high levels of spirituality. The other probabilities for the different drinking categories, in Table 1, can be interpreted in the same manner.

## Discussion

This study incorporated an important component—religiosity and spirituality—in understanding alcohol consuming patterns among Chilean youth. This work advances other research examining drinking behaviors among adolescents in Chile (e.g., Han, Grogan-Kaylor, Delva, et al., 2012) as it focuses on an important aspect that helps set principles and provide guidance on daily life decisions among Chilean youth. The study findings are consistent with the results of the systematic review of over 100 empirical studies of religiosity and substance use by Chitwood and colleagues (2008), concluded that nearly 58% of the studies found an inverse association and about 41% found non-significant association between a measure of religiosity and a measure of alcohol consumption behaviors. The findings are also consistent with the findings observed by Cehn and colleagues (2002) in Central America.

Furthermore, this study contributes beyond existing studies that solely focus on the role of religiosity in understanding at-risk behaviors among Chilean youth (e.g., Florenzano et al., 2008; Neckelman, 2009). Results from this study indicated that mothers who engaged in

more religious practices when their children were 10 years old and who scored higher on spirituality when their children were adolescents tended to have adolescents who were also more religious and spiritual as probably one would expect. Of particular interest, however, is the finding that adolescents' spirituality, but not religiosity, was protective against increased alcohol consumption, and that their mothers' spirituality was positively associated with the adolescents' alcohol consumption. These findings suggest that adolescents' spirituality (i.e., making sure their religious faith guides important decisions they make in their lives) may offer protection against alcohol consumption, something that religiosity (i.e., church attendance) may not. Essentially, the practice of religious behaviors by themselves without a personally meaningful, internalized, faith were not associated with alcohol consumption among a large sample of adolescents in Chile. It is also plausible that in a country such as Chile where alcohol consumption, especially heavy alcohol use, is common and not entirely frowned upon by societal norms, that there probably is no meaningful contradiction between religious behaviors and alcohol consumption unless the religion specifically prohibits its members from consuming alcohol. However, even adolescents belonging to Evangelical Churches and the Jehovah's Witnesses reported drinking alcohol.

The finding that mothers' spirituality was positively associated with adolescents' alcohol consumption is more difficult to interpret. This finding may reflect adolescents rebelling against parents particularly if their parents' religiosity and spirituality might be reflecting parenting behaviors that can be potentially more restrictive, authoritarian, prescriptive, or controlling. On the other hand, it is also possible that the opposite is true. Mothers who scored higher in spirituality may be more trusting of their children and pay less attention to their children's whereabouts and alcohol consuming behaviors. It is also entirely possible that this particular finding reflects the possibility that the mother's increased spirituality is the result of a reaction to their children engaging in more risky behaviors (i.e., increased alcohol consumption) in an attempt to cope with their children's behaviors. However, we conducted some exploratory analyses with different dependent variables (i.e., frequency of cigarettes and marijuana use) and found that mother's religiosity and spirituality were not significantly associated with their children's use of these other substances. These findings potentially negate the hypothesis that mothers are becoming more spiritual as a way to cope with their children's high risk behaviors. More research is certainly needed to understand how parental religiosity and spirituality may be associated with their children's alcohol consumption.

Also of interest is the mediating association of parental monitoring and opportunities to use alcohol. That increased spirituality among adolescents was associated with increased parental monitoring, in turn associated with reduced opportunities to consume alcohol, suggests a potential pathways by which alcohol consumption may decrease when adolescents are more spiritual.

Before discussing the implications of the study findings for social work practice, several limitations must be considered. First, questions on mother's spirituality were not available when the adolescent was 10 years old. Second, the questions on religiosity and spirituality included in the study are not as comprehensive as they could have been and as such may be considered proxy measures of these complex multidimensional constructs. Future studies

with Chilean adolescents and their families would benefit from the use of more comprehensive set of questions on religiosity and spirituality to better understand how these practices and beliefs protect adolescents from engaging in at-risk behaviors. Third, it is plausible that youth belonging to some religions may have under-reported their alcohol using behaviors. It was not possible to test if indeed this is the case. However, we note that youth from all the religions represented in the study reported consuming alcohol. Furthermore, even though sample sizes for the various religions represented in the study, other than Catholics, were too small to conduct separate analyses, results of exploratory analyses by religious affiliation did not reveal any appreciable differences from the model that grouped all adolescents together (those depicted in Figure 1). Finally, the sample is not a representative sample of the Chilean adolescent population and it is mainly composed of adolescents from lower socioeconomic backgrounds. Research with national representative samples of adolescents and with smaller samples of adolescents from mid to higher socioeconomic position is needed to examine if the findings observed in this study can be replicated. Nonetheless, it remains to be seen if with larger samples important differences would be observed between religious groups. Despite this limitation, it is important to highlight that independent of religious affiliation, adolescents' spirituality had a statistically significant inverse association, directly and indirectly, with their levels of alcohol consumption.

Notwithstanding these limitations, this study makes an important contribution to the literature on religiosity, spirituality, and alcohol use among Chilean adolescents, given the scarcity of studies on these topics in Chile and in the Latin American region (Chen, Dormitzer, Bejarano, et al., 2004; Florenzano, Valdéz, Cáceres et al., 2008; Kliever and Murrelle, 2007; Neckelmann, 2009). Furthermore, the study relied on independent reports by mothers and adolescents, and is one of the few studies that tested mechanisms by which religiosity and spirituality could be protective by examining the mediating associations of parental monitoring and alcohol using opportunities.

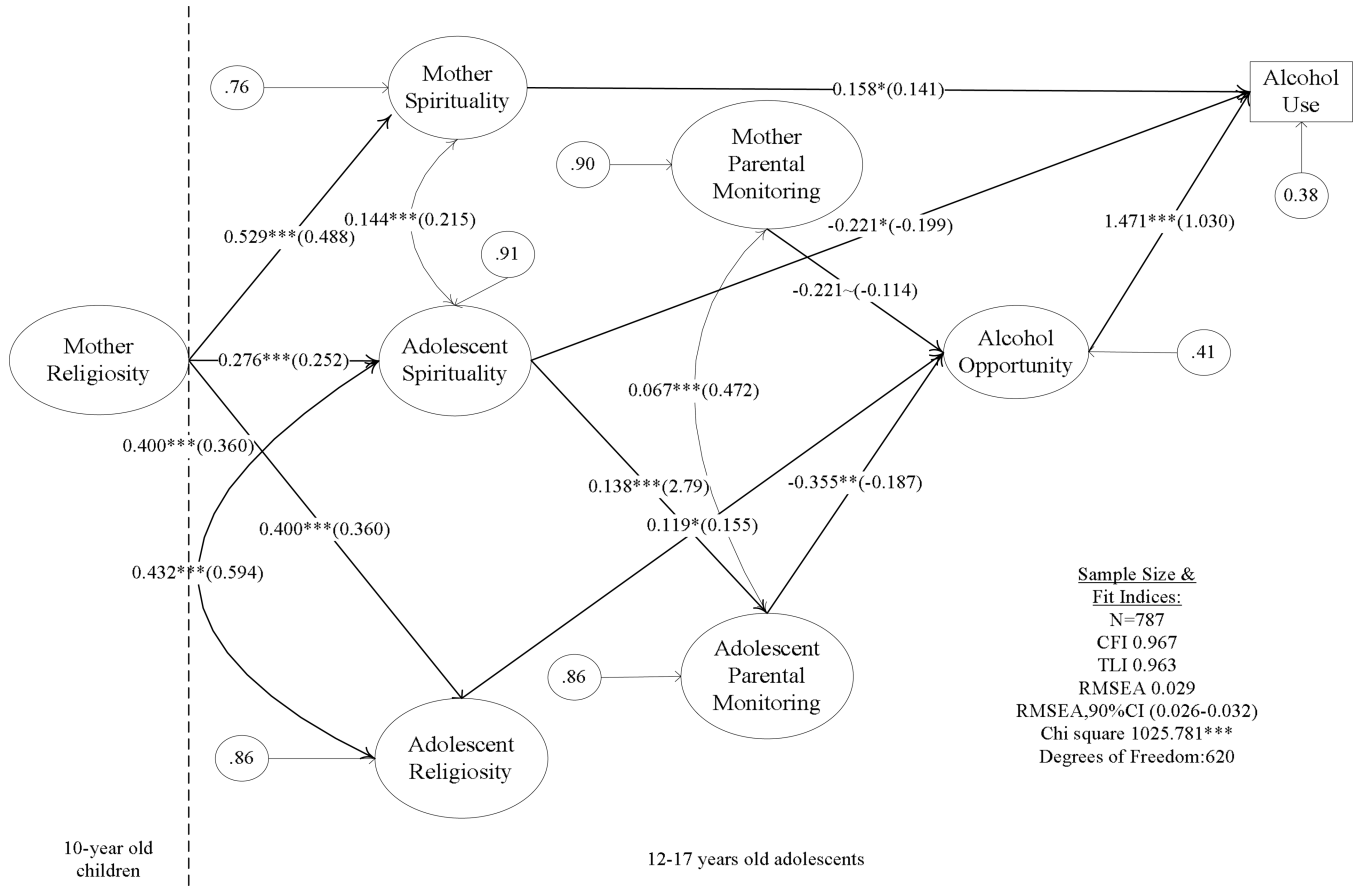
In light of recent national figures which reported that the vast majority of adolescents in Chile identify as having some sort of religious affiliation (~66%) and belief in God (~90%) (Instituto Nacional de la Juventud, 2009), the study findings raise some interesting implications for social work practice with Chilean adolescents. One important implication is that interventions intended to protect youths from abusing alcohol (and possibly other substances) might explore ways to promote a healthy, meaningful spirituality among youths (Puschel & Cassigoli, 2009), which may help them avoid potentially self-damaging behaviors. The importance of adolescents' religious beliefs on making daily life decisions may be an important factor preventing them from problematic drinking, which may be linked to a sense of personal responsibility derived from their spiritual or religious beliefs (Boff, 2001), or to a personal, ethical discernment regarding the appropriateness of engaging in more risky behaviors (Mifsud, 2002), or to a commitment to values that are meaningful to them that do not involve alcohol consumption (Puschel & Cassigoli, 2009). Future research should explore the specific mechanisms by which religiosity and spirituality may be acting as protective influences against alcohol abuse (and, potentially, other substances) in developing nations.

Per the information obtained in the present study which is consistent with prior findings in the international literature, social workers might benefit from being more aware of the nature of the spiritual resources upon which young people may be drawing.

## References

- Boff, L. Espiritualidad. Un camino de transformación. In: GMT. , editor. Espiritualidad: la transformación interior. Distinción entre espiritualidad y religión. Rio de Janeiro: Editorial Sextante; 2001. p. 17-29.
- Bollen, KA. Structural Equations with Latent Variables. NY: John Willey & Sons; 1989.
- Chen C-Y, Dormitzer CM, Bejarano J, Anthony JC. Religiosity and the Earliest Stages of Adolescent Drug Involvement in Seven Countries of Latin America. *American Journal of Epidemiology*. 2004; 159:1180–1188. [PubMed: 15191935]
- Chilcoat HD, Anthony JC. Impact of parent monitoring on initiation of drug use through late childhood. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1996; 35:91–100. [PubMed: 8567618]
- Chitwood DD, Weiss ML, Leukefeld CG. A systematic review of recent literature on religiosity and substance use. *Journal of Drug Issues*. 2008; 38(3):653–688.
- Delva, J.; Han, Y.; Andrade, F.; Bares, CB.; Grogan-Kaylor, A.; Castillo, M. Does religiosity protect adolescents from using drugs? Mixed evidence from an empirical test with longitudinal data and propensity score stratification. Paper presented at the Annual Conference of the Society for Social Work and Research (SSWR); January 12, 2012; Washington, DC. 2012 Jan.
- Ellison CG, Levin JS. The religion-health connection: evidence, theory and future directions. *Health Education and Behavior*. 1998; 25:700–720. [PubMed: 9813743]
- Ellison CG, Hummer RA, Cormier S, Rogers RG. Religious involvement and mortality risk among African American adults. *Research on Aging*. 2000; 22:630–667.
- Florenzano R, Valdéz M, Cáceres E, Santander S, Armijo I, Bergman V, Trapp A. Religiosidad, conductas de riesgo y salud mental en adolescentes de Santiago de Chile. *Revista Chilena de Salud Pública*. 2008; 12:83–92.
- Furness, S.; Gilligan, P. Religion, Belief and Social Work: Making a Difference. UK: Bristol, Policy Press; 2010.
- Han Y, Grogan-Kaylor A, Delva J, Castillo M. The role of peers and parents in predicting alcohol consumption among Chilean youth. *International Journal of Child and Adolescent Health*. 2012; 5(1):53–64. [PubMed: 24489979]
- Hill PC, Pargament KI, Wood RW Jr, McCullough ME, Swyers JP, Larson DB, et al. Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal of Theory of Social Behavior*. 2000; 30:51–77.
- Horsburgh M. Towards an inclusive spirituality: Wholeness, interdependence and waiting. *Disability and Rehabilitation*. 1997; 19(10):398–406. [PubMed: 9368090]
- Hu, LT.; Bentler, PM. Evaluating model fit. In: Hoyle, RH., editor. Structural equation modeling: Concepts, issues, and applications. Thousand Oaks, CA: Sage; 1995. p. 76-99.
- Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*. 1999; 6:1–55.
- Hummer RA, Rogers RG, Nam CB, Ellison CG. Religious involvement and U.S. adult mortality. *Demography*. 1999; 36:273–285. [PubMed: 10332617]
- Idler, EL.; George, LM. What sociology can help us understand about religion and mental health. In: Koenig, HG., editor. Handbook of religion and mental health. San Diego: Academic Press; 1998. p. 51-62.
- Instituto Nacional de la Juventud (INJUV). [Accessed on March 19, 2012] Sexta Encuesta Nacional de la Juventud. INJUV, Ministerio de Desarrollo Social, Gobierno de Chile. 2009. Available at: [www.injuv.gob.cl/injuv2010/encuestas\\_juventud](http://www.injuv.gob.cl/injuv2010/encuestas_juventud).

- Kliwer W, Murrelle L. Risk and protective factors for adolescent substance use: Findings from a study in selected Central American countries. *Journal of Adolescent Health*. 2007; 40:448–455. [PubMed: 17448403]
- Kline, RB. *Principles and practices of Structural Equation Modeling*. 2ed. NY: The Guilford Press; 2004.
- Koenig, HG.; McCullough, ME.; Larson, DB. *Handbook of religion and health*. New York, NY: Oxford University Press; 2001.
- Lozoff B, De Andraca I, Castillo M, Smith JB, Walter T, Pino P. Behavioral and developmental effects of preventing iron-deficiency anemia in healthy full-term infants. *Pediatrics*. 2003; 112:846–854. [PubMed: 14523176]
- Merrill RM, Folsom JA, Christopherson SC. The influence of family religiosity on adolescent substance use according to religious preference. *Social Behavior and Personality*. 2005; 33:821–836.
- Mifsud, T. *Moral de Discernimiento (Reivindicación ética de la sexualidad)*, Tercer Tomo, quinta edición. Tony Mifsud S.J. Santiago: San Pablo ediciones; 2002.
- Muthén, LK.; Muthén, BO. *Mplus user's guide*. 6th Ed. Los Angeles, CA: Authors; 1998–2010.
- Nash SG, McQueen A, Bray JH. Pathways to adolescent alcohol use: Family environment, peer influences, and parental expectations. *Journal of Adolescent Health*. 2005; 37:19–28. [PubMed: 15963903]
- Neckelmann, M. El efecto protector de la religión frente consumo de alcohol y drogas en adolescentes chilenos. Unpublished Master's Thesis in Sociology. Pontificia Universidad Católica de Chile, Santiago, Chile; 2009. [www7.uc.cl/sociologia/milenio/download/tesis\\_maureen\\_neckelmann.pdf](http://www7.uc.cl/sociologia/milenio/download/tesis_maureen_neckelmann.pdf)
- Pargament, K. *The psychology of religion and coping*. New York: Guilford Press; 1997.
- Patterson, GR.; Capaldi, DM. *Psychometric properties of fourteen latent constructs from the Oregon Youth Study*. New York, NY: Springer-Verlag; 1998.
- Püschel, K.; Cassigoli, G. Healthy development for healthy spirituality: Social transformations among Chilean youth in the New Millennium. In: Souza, M.; Francis, L.; O'Higgins-Norman, J.; Scott, D., editors. *International handbook of education for spirituality, care and wellbeing*. International handbooks of religion and education. Springer Netherlands: 2009.
- Seaward, BL. *Health of the human spirit: Spiritual dimensions for personal health*. Boston: Allyn and Bacon; 2001.
- Sheridan M. Introduction: Connecting spirituality and social justice within macropractice. Special issue on spirituality and social justice. *Journal of Religion & Spirituality in Social Work: Social Thought*. 2012; 31:1–8.
- StataCorp. *Stata Statistical Software: Release 12*. College Station, TX: StataCorp LP; 2011.
- Steiger JH. Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioural Research*. 1990; 25:173–180.
- Wagner FA, Anthony JC. Into the world of illegal drug use: exposure opportunity and other mechanisms linking the use of alcohol, tobacco, marijuana, and cocaine. *American Journal of Epidemiology*. 2002; 155:918–925. [PubMed: 11994231]
- Weitzman ER, Folkman A, Folkman MP, Wechsler H. The relationship of alcohol outlet density to heavy and frequent drinking and drinking-related problems among college students at eight universities. *Health Place*. 2003; 9:1–6. [PubMed: 12609468]
- Zinnbauer B, Pargament K, Cole B, Rye M, Butter E, Belavich T. Religion and Spirituality: Unfuzzifying the fuzzy. *Journal for the Scientific Study of Religion*. 1997; 36:549–564.
- Zinnbauer B, Pargament K, Scott A. The emerging meanings of religiousness and spirituality: Problems and Prospectus. *Journal of personality*. 1999; 67:889–919.



**Figure 1.** Structure equations model depicting the associations of religiosity and spirituality with alcohol use; parental monitoring and alcohol use opportunity as mediators (N= 787).  
**Notes.** The levels of significance are: ~ $p < 0.1$ , \* $p < 0.05$ , \*\* $p < 0.001$ , \*\*\* $p < 0.001$ . All factor loadings and residual variances are significant at  $p < 0.001$ . The model controls for age, SES, and gender (variables not shown in the Figure). The parental monitor factors are based on equivalent items in both adult and youth versions. The measurement part of the model is not depicted to make the figure easier to understand. The estimations were based on probit models; the coefficients are probit and numbers in parenthesis represent standardized coefficients.

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Table 1

Predicted probabilities of belonging to a drinker type based on mothers' and adolescents' spirituality levels (N = 787).

	Drinker					Total
	Nondrinker	Infrequent	Light	Moderate	Heavy	
<b>Mother spirituality</b>						
Low	0.68	0.22	0.05	0.03	0.01	1.00
Average	0.63	0.25	0.06	0.04	0.02	1.00
High	0.56	<b>0.28</b>	0.08	0.05	0.02	1.00
<b>Adolescent spirituality direct association</b>						
Low	0.53	0.29	0.09	0.06	0.03	1.00
Average	0.63	0.25	0.06	0.04	0.02	1.00
High	0.70	0.22	0.05	0.03	0.01	1.00
<b>Adolescent spirituality total association</b>						
Low	0.51	0.30	0.09	0.06	0.03	1.00
Average	0.64	0.25	0.06	0.04	0.02	1.00
High	0.73	0.20	0.04	0.02	0.01	1.00

<sup>a</sup> Probabilities range from 0–1. A probability of **0.28** (bold cell in table), for example, corresponds to a 28% chance of being and infrequent drinker conditioned to having a mother with high levels of religiosity.