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Spirituality within the Family and the Prevention of Health Risk Behavior among Adolescents in Bangkok, Thailand

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Abstract

This study investigates the influences of a family's spiritual beliefs and practices on substance use and sexual risk behaviors among young adolescents 13 to 14 years old in Bangkok, Thailand. Independent predictor variables are the parents' and teens' spiritual beliefs and practices in Buddhism and parental monitoring behaviors. The study uses data from the 2007 Baseline Survey of the Thai Family Matters Project, which adapted a U.S. based family prevention program for Thai culture. A representative sample of 420 pairs of parents and teens from the Bangkok metropolitan area was recruited to participate in the study. Structural equation models indicate that positive direct and indirect associations of the spirituality of parents and teens within a family and the prevention of adolescent risk behaviors are significant and consistent.

Keywords

Thailand; Buddhism; spirituality; adolescents; family; risk behavior; tobacco; alcohol; health behavior; sexual behavior

Introduction

It is generally recognized that alcohol consumption, drug use and sexual risk taking are leading interrelated threats to the health and well-being of young adolescents (Paikoff, 1991; DiLorio et al., 2004; Fongkaew, Fongkaew & Suchaxaya, 2007; Strachman et al., 2009; Waylen et al., 2010). Public health rationale indicates that preventive interventions during early adolescence are reasonable and may be more effective than programs designed to correct undesirable outcomes after the onset of risk behaviors. For instance, the national sexual surveillance system in Thailand reported in 2008 that 3% of teens aged 13, 15-24% of teens aged 16, and 37-43% of teens aged 17 had already had engaged in sex. In addition,

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sexual debut under the age of 15 has been rising (National AIDS Prevention and Alleviation Committee, Thailand 2010). Thus, targeting prevention to teens at age 13 or 14 may be particularly critical.

Public health interventions are often designed to be secular and “value free” to appeal to the widest possible audience. As a result, program designers are reluctant to develop interventions that promote spirituality or religious beliefs as a primary program element because they believe that such issues should be the province of each individual family. While it is important to be respectful of individual beliefs and values, it is equally important to identify the major factors that either contribute to, or prevent, risky behavior. Particularly with young adolescents, it is important to examine the influence of both family structure and family spirituality. Any future integration of spirituality into public health programs requires a thorough understanding of the relationship between spirituality and health behaviors and outcomes.

A number of studies report that high levels of spirituality are related to a lower level of risky behaviors for youth. Wallace and Forman (1998) reported the significance of religion in promoting health and reducing risk behaviors among 12th graders. More recently, a national study in the U.S. revealed that adolescents who perceived religion to be important and who were active in religious activities were less likely to be involved in risk behaviors such as smoking, drinking alcohol, and having sex (Sinha, Craan and Gelles, 2007). Among high school youth, individual levels of spirituality were negatively correlated with tobacco use, binge drinking and marijuana use (Wallace et al., 2007), and schools that provided additional religious context added to this individual-level effect. A study of adolescents in Central American countries revealed that the presence of protective factors, including both a personal “belief in God” and parental religiosity, had an effect on reducing alcohol and marijuana usage (Kliewer and Murrelle, 2007). Other studies have indicated that self-perception of “religious reason” provides a strong justification for not engaging in deviant behavior such as drug use (De Micheli and Formigoni, 2002).

In a review of the role of religion / spirituality as a protective factor against negative adolescent health outcomes, Cotton et al. (2006) made a clear theoretical distinction between the distal and proximal domains of religion / spirituality. According to Cotton and colleagues, factors that are more distal include individual *behaviors* (e.g., frequency of attendance of services, prayer, or meditation, etc.) while proximal factors include key *functions* of spirituality (e.g., spiritual coping and spiritual meaning, the reliance on spiritual beliefs and teachings in times of hardship, and one's belief in a higher, divine force). In light of such a distinction, this article will treat practice and belief as two distinct aspects of spirituality.

While the literature reviewed above focuses primarily on adolescent spirituality at the individual level of one generation, it is important to note studies that examine the impact of spirituality within the family context. In a review of familial transmission of spiritual beliefs, Miller (2005) suggested a number of ways that parents sustain spiritual beliefs and practices across the generations. Parents can influence youth by providing a model of how spiritual beliefs and practices are important for coping with difficult life situations and by exerting control over contacts that young children have with other children. In addition, parental monitoring of children that allows for early exposure to other youth who are being raised with similar beliefs and practices may result in friendship networks that further support these beliefs and practices as they become adolescents. Parents who adhere to their own professed spiritual beliefs may further create a pattern of practices that reinforce positive, pro-social values in the community.

Research on the link between spirituality and adolescent health outcomes has generated important and systematic reviews. To date, the prime focus of such research has been on the impact of Judeo-Christian traditions on adolescent risk behaviors. Consequently, there exists a need to assess the relationship between spirituality, families, and adolescent risk behavior as it pertains to non-Judeo-Christian religions. This study contributes to the understanding of the intergenerational transmission of spirituality and its relationship to risk behavior among adolescents in a Buddhist country and offers an interesting perspective and comparison. In particular, it is important to understand whether the benefits attributed to this relationship are related to spirituality in general or are due to specific beliefs and practices advocated by different religious traditions.

The authors' goal in presenting this paper is not to promote any particular set of religious beliefs but rather to contribute to an understanding of the degree to which spirituality can have an effect on adolescent risk behavior. In addition, it is our hope that the insights gained through this and other related research will contribute to the further development of effective public health strategies, particularly family-based interventions developed within the context of the accepted religious beliefs and traditions of any number of societies and communities.

Spirituality in Buddhist Society

Thailand is a Buddhist society with 94.6% of the population being Buddhist, 4.1% Muslim and 1% Christian (The National Statistical Office, 2000). The majority of Thai Buddhists belong to Theravada or Hinayana Buddhism. The teaching of Hinayana Buddhism in Thailand centers on the concept of reincarnation and emphasizes the Law of Karma, which states that individuals will experience the consequences of their conduct (whether meritorious or sinful) either in this or future lives. The main pillars of the Buddha's teachings are the Four Noble Truths (concerning the nature and cessation of suffering) including the Eight-Fold Path of Enlightenment, which leads individuals toward the end of suffering. Common practice for a layperson following the Path involves the observation of the Five Precepts, which include abstaining from killing, stealing, sexual misconduct, lying and the consumption of alcohol and other intoxicants. Buddhist laypersons also gain merit (*Tamboon*) by going to the temple to worship Buddha, to offer food to the monks, to make donations, and to pray on the Buddhist teachings especially during the Buddhist holidays. In their homes, they may also practice meditation or offer food to the monks who come to their house or their neighborhood (*Saibart*).

The Buddhist way of life mentioned above is related to Thai spiritualism in at least three aspects. First, Buddhism opposes materialism and worldly pleasures and stresses the spiritual paths leading to the end of human suffering. Second, moral and ethical values and practices generated by Buddhism are a major part of the spiritualism embraced by the Thai people. Third, Buddhism brings about the idea of "sacredness" in religion (Bovornkitti, 2005). However, Buddhist teachings are not compulsory. In Thailand, there are some variations in the degree or level of spirituality among the citizenry. While the family as a social unit remains central to the dissemination of Buddhism, spirituality in Thai families is presently being challenged by rapid social change. Due to a number of factors including the disruption of the extended family, increased materialism, and the transition to an urban society, it is important to investigate the degree to which the teachings of Buddhism impact the present generation of Thai adolescents, especially in urban Bangkok where social transformation is occurring most rapidly.

Past investigations of the relationship between Buddhism and adolescent health in Thailand are limited. In one study, Buddhist principles were used as an intervention to improve emotional intelligence for Thai youth (Sucaromana, et al., 2004). A more recent study found

that both Buddhist practices and beliefs were negatively related to alcohol use among Thai adolescents (Newman, et al., 2006). Assanangkornchai and colleagues (2002) reported similar findings in a study among men that looked at their religious experiences as youths (e.g., being a temple boy, being ordained as a monk, and/or the undertaking of Buddhist study). While the measurement of Buddhist spirituality is treated differentially in the literature, the association with adolescent health behaviors and outcomes seems to hold. Existing studies demonstrate the benefit of additional investigation into specific Buddhist beliefs and practices in order to fully understand the role of Thai spirituality as a protective factor against early adolescent risk behaviors.

While extant literature provides important information regarding the relationship between spirituality and adolescent behavior, previous study designs have allowed for investigations only at the individual level. It is proposed here that examination of the extent to which spirituality plays a protective role within the context of the family, which allows for the intergenerational transmission of Buddhist beliefs and practices, is also important. In the present study, we are able to examine the interaction between parents' and teen's spiritual beliefs and practices by surveying both teens and parents. Measuring the practices of more than one generation has enabled us to improve our understanding of the protective roles of spirituality in the family.

The Objectives

This study aims to investigate the influence of a family's spirituality in the Buddhist context, which includes both parental and teen spiritual beliefs and practices, on risk behaviors among young teens 13 to 14 years of age. The problem behaviors under investigation include alcohol, tobacco or other drug use, and sexual intentions and behaviors. We hypothesize that the parent's spirituality may have positive effects on their teen's spirituality and that parental spirituality may have either direct or indirect effects on the prevention of their teen's risky behaviors. Models will be tested to examine whether the spiritual beliefs of parents will sequentially have an impact on adolescents' problematic behaviors while controlling for the parents' education levels and the teens' ages and genders. According to this model, the parents' spiritual beliefs will first determine their own spiritual practices and will influence the adolescents' spiritual beliefs. Both the teens' spiritual beliefs and the parents' spiritual practices will determine the teens' spiritual practices, which in turn will discourage the teens' risky behaviors. It is also hypothesized that the parents' spiritual practices can also influence teen behavior directly. In addition, the influence of the parents' religious beliefs and practices on the teen may be indirect or work through increased parental monitoring of the teen. Parent spirituality is expected to increase monitoring and, in turn, reduce the risk behaviors of teens.

Due to the limitations of the scope of this study, any discussion of the adolescent's ecology will be limited to the intergenerational transmission model (Regnerus, 2003; Miller, 2005) with no consideration given to those environmental spheres outside of the family setting.

Methods

Data

The data used in this study are from the 2007 Baseline Survey of the Thai Family Matters Project. The goal of the broader study is to test the feasibility of adapting and implementing the Family Matters Project (FM), a family-based prevention program for alcohol, tobacco and drug (ATOD) prevention developed in the U.S. (Bauman and Ennett, 1996). In addition to cultural modifications, a module targeting risky adolescent sexual behavior was added. This study was funded by the National Institutes of Health (R01AA015672) and features an

international collaborative team composed of investigators from the PIRE (USA), Mahidol University, Chiang Mai University, and CSN & Associates (Thailand) as well as an American Program Advisor to the Thailand Ministry of Public Health (see Miller, et al. 2008; Byrnes et al., 2009; Chamratrithirong, et al., 2009; Rhuchareonpornpanich, et al. 2010). The study, including its data collection activities, was approved by both the PIRE IRB and the IRB Committee of the Institute for Population and Social Research, Mahidol University.

Using the probability proportional to size (PPS) sampling method (with the case multiplication technique), a representative sample of 420 pairs of parents and teens aged 13-14 residing in seven districts of the Bangkok metropolis was recruited for participation in this study (Chamratrithirong, et al., 2009). These seven districts, which are found in the three zones (inner, middle, and outer zone) of the former Bangkok Metropolitan Administration, were selected from a total of 50 districts based on the PPS method. Subsequently, 35 blocks from each of the seven districts were sampled again using the PPS method, which led to a total of 245 blocks. Then CSN & Associates (Thailand) in collaboration with Mahidol University researchers conducted household censuses and enumerations in all 245 blocks using maps provided by the National Statistical Office of Thailand. Data collection teams then identified households with 13-14 year-old adolescents.

In the final step, families in 60 households per district (420 in total) were randomly selected to be interviewed. One adolescent and one parent completed separate and private interviews. Adolescents completed interviews using an audio computer-assisted questionnaire (ACASI) on a laptop computer. Parents participated in a structured interview administered by a data collector. Different methodologies were used for parents and adolescents because of preferences expressed in formative focus groups. Questions about spirituality and religious beliefs and practices were asked of both parents and teens. The data about parental monitoring and adolescent behavior was collected from the teens.

Measures

To make certain that measures were valid for the Thai culture, the research team worked collaboratively to develop the instruments. Thai researchers first reviewed the U.S. measures and suggested modifications based on discussions about the interpretations of the cultural meanings of items. The instruments were translated into Thai and back-translated into English. This was done by two different team members to avoid bias. When the two versions did not match, all team members would review in order to make further refinements. In addition, a small sample of Thai parents and adolescents reviewed the instruments and provided comments. We describe the final measures used below.

Spirituality

Prior to constructing items to measure spiritual beliefs and practices among families in Thailand, we reviewed measures that have been used to assess religious and spiritual practices in various previous studies. The Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS), designed by the Fetzer Institute and the National Institute on Aging (Fetzer Institute, 1999) and later used and validated by Rippentrop et al. (2005) and Johnstone et al. (2008), made a clear distinction between the components of values/beliefs and private religious practices. Underwood and Teresi (2002) developed and tested the daily spiritual experience scale, which focused on feeling close to God, in a number of empirical studies. These validated measures of spirituality were largely developed to measure Judeo-Christian beliefs, practices, and faiths. Given that the predominant spiritual practice in Thailand is Buddhism, we discussed differences and similarities between tenets of the various faiths.

After examining several existing instruments and frequently used items in various large-scale studies of youth and risk behaviors, we determined which measures were most relevant for followers of Buddhism. There were three dimensions of this construct that were evident in the existing literature and that seemed pertinent to Buddhism: practices, beliefs, and the importance of religious traditions/values. The following items were selected for spiritual beliefs: perception of the importance of religion to self; belief in the help of religious prayer or meditation; and beliefs in Reincarnation and in the Law of Karma. As for the spiritual practices, we included regular religious prayer or meditation; religious prayer or meditation when life is stressful; the practices of merit making including *Tamboon* (donation) and *Saibart* (offering food to monks); and the observation of the Five Precepts including abstinence from killing, stealing, sexual misconduct, lying, and substance use. The reliability of the newly developed scales was acceptable with values of Cronbach's alpha of .626 and .676 for the teen's spiritual beliefs and practices scales and .633 and .673 for the same scales for the parents, respectively.

The dependent variables in this study capture include alcohol, tobacco and other drug use, and sexual intentions and behaviors.

Alcohol use—Alcohol use is measured by adolescents' reports of lifetime use (1 = Yes, 0 = No). Adolescents were instructed to exclude any occasions where they only had a sip or two from a drink.

Tobacco use—Tobacco use is measured by adolescents' reports of lifetime use (1 = Yes, 0 = No).

Drug use—Illicit drug use is measured by adolescents' reports of lifetime use of marijuana, inhalants, stimulants, or sedatives (1 = Yes, 0 = No).

Sexual behaviors—Risky sexual behavior is measured using two indicators. The first is the self-reported measure of intentions to have sex in the next six months. Response options ranged from 1 (“Very sure I won’t”) to 4 (“Very sure I will”) and was log-transformed due to the skewness of data. This measure is based on evidence that sexual intention is one of the stable predictors of sexual behavior outcomes (Buhi and Goodson, 2007) and that intention to refuse sex is significantly related to delaying actual sexual activities in the future (Dancy et al., 2010). Second is the self-reported measure of pre-coital acts that are often precursors to sexual intercourse including holding hands, hugging, kissing on the cheek, lips, or mouth, touching breasts (for boys) or allowing breasts to be touched (for girls), or touching or allowing touching below the waist. This measure, which is similar to previous measures such as the adolescent sexual activity index (ASAI) (Hanson, Paskett & Carter, 1999), sexual possibility situations (SPS) (Dilorio, et al., 2004), and romantic and sexual encounters (Waylen et al. 2010), captures initial forays into sexual activity. Such pre-coital behaviors are generally not considered acceptable in that they may lead to more intimate sexual behavior. Reports of pre-coital behavior in this study may be interpreted as more advanced than average in Thailand (Sartsara, 2001) where the prevalence of sexual activity is lower with this age group than in the U.S. (Lederman & Mian, 2003). The response scale for each item ranged from 1 (“No”) to 4 (“Yes, many times”). The scale is constructed by averaging the scores of these acts together, taking the acts for boys and girls into account separately, and log-transforming the data due to the skewness.

Other independent and background variables—Parental monitoring is another important variable included in this study, particularly in that it may influence adolescent outcome behaviors (Farmer, Sinha and Gill, 2008; Miller, et al., 2009; Rhucharoenpornpanich, et al., 2010). Parental monitoring is measured primarily by the

parents' knowledge of the teen's whereabouts and was adapted from Patterson and Stouthamer-Loeber (1984) and Capaldi and Patterson (1989). This information was gathered directly from the adolescents and includes items about parental knowledge over the past six months of the teen's whereabouts and activities when away from home. The response ranges from "none of the time" to "all /almost all of the time" on a 4-point scale.

Other background variables in this study include age, gender (1 = Male, 2 = Female) of the teens and the education level of the parents.

Data Analysis

Structural equation models were used to examine the relationship between spirituality and adolescent problem behaviors in this study. Missing data were first imputed using Expectation-Maximization (EM) estimation. Maximum Likelihood (ML) latent variable structural equation modeling implemented with EQS MPlus 5.2 (Muthen & Muthen, 2006; Bentler, 1985-2004) was then used to examine the impact of spirituality and parental monitoring on adolescent alcohol, tobacco, and drug use, intentions to have sex, and pre-sexual behaviors taking into account the background variables (e.g., parental education level). We used Lagrange Multiplier (LM) and Wald tests to help modify the models. The ML-based comparative fit index (CFI) and root mean squared error of approximation (RMSEA) were used to assess model fit, which is in line with Hu and Bentler's (1999) recommendation. A CFI close to .95 and a RMSEA close to .06 indicate better model fit. Due to non-normally distributed data, we used robust estimates of the standard errors.

Results

Descriptive Analysis

Teen Risk Behaviors—Table 1 presents the percentage of teens who reported engaging in problem behaviors. Among 14-year-olds, alcohol is the substance used most commonly (24-32%) followed by cigarette smoking (9%). By age 13, boys have already begun to drink alcohol and smoke more than girls and the differences are statistically significant. Use of other substances is very low but generally higher among males and older age teens. At age 14, there is a minor reversal in cigarette use, with a trend for girls to smoke slightly more than boys (8.8% compared to 8.5% with a p-value of .08) although the relationship is not significant at the .05 level. Intentions to have sex are significantly higher for boys than girls (mean score of about 1.29 for boys compared to 1.06 for girls). Participation in pre-sexual behaviors increases with age with the most common behaviors being holding hands, hugging and kissing on the cheek. The more intimate behaviors (kissing on the lips and mouth and touching breasts or other private parts) are reported by 10% or less of 14-year-old study participants with more experiences reported by boys.

Parental Monitoring—Table 1 presents the results for parental monitoring in terms of the mean score of the regularity of knowledge about the whereabouts of one's child. Parental monitoring is found to be significantly higher for girls, particularly among 14-year-old adolescents.

Parent and Teen Spirituality—Spiritual beliefs and practices of the parents and teens are shown in Table 2. The four measures of spiritual *beliefs* described earlier are presented. The four measures of spiritual practices discussed earlier are also provided. The strength and frequency of these beliefs and practices are presented separately for parents and teens. Table 2 also demonstrates the level of spirituality of those teens whose parents report the highest levels of a particular spiritual belief or practice.

As expected, parents report higher levels of spirituality than their teens in all areas of beliefs and practices (see Table 2). The gaps between parents and teens are especially large when examining spiritual practices compared to spiritual beliefs. The three most pronounced differences are in the factors of prayer or meditation when life is stressful; practices of *Tamboon* and / or *Saibart*; and observation of the Five Precepts. Regular practice of *Tamboon* and / or *Saibart* is about three times more prevalent among parents than among adolescents. Observing the Five Precepts on a regular basis is also found to be two times more prevalent among parents.

Table 2 also reveals the strength of religious or spiritual beliefs and practices among teens whose parents reported the highest levels of spirituality in each of the eight areas measured. If this particular group of adolescents reported themselves to be less spiritual than the general group, the hypothesis that a parents' spirituality has a significant influence on their children's spirituality would not be supported. However, a significantly higher level of spirituality was reported among teens whose parents are most spiritual. This suggests that parents influence their teens' spirituality or transmit to their teens their own level of spirituality. Adolescents mirror parental spiritual practices to the highest degree when those practices include *Tamboon* and / or *Saibart* and observation of the Five Precepts. For example, teens whose parents observe the five Precepts "very often" are also characterized by a much higher percentage (17.5%) of response that they too observe the Five Precepts "very often" compared to only 10% among all teens. The extent to which the spirituality of parents has positive effects on their teen's behavior will be tested by a multivariate analysis in the next section.

Structural Equation Models of Spirituality and Problem Behaviors—Initial structural models were specified that were consistent with the conceptual models wherein, controlling for the parents' education level and the teens' ages and genders, the spiritual beliefs and practices of parents will impact on adolescents' spirituality. Both the teens' spiritual beliefs and the parents' spiritual practices will determine the teens' spiritual practices, which in turn will discourage the teens' risky behaviors. This model also specifies that the parent's spiritual practices can also influence teen behavior directly. The influence of the parents' religious beliefs and practices on the teen may be indirect or work through increased parental monitoring of the teen or greater knowledge of the teens' whereabouts. In this model, parental spirituality is expected to increase monitoring, and this monitoring reduces teen risk behaviors in turn. Background variables (teen age and gender) and parent variables (e.g., parents' education levels and spiritual beliefs) are simultaneously entered and allowed to co-vary. For model parsimony, non-significant paths were then dropped from the models.

Figures I to III present the analysis of the structural equation models of spirituality and the behavioral outcomes of the adolescents including ATOD consumption and sexual intention and behavior.

Following the model described above, Figure I presents the final structural model of spirituality and the adolescents' ATOD use. The standardized coefficients are shown, and the model fit the data very well [χ^2 (N = 355, df = 18) = 26.25, p = .092, CFI = .96, RMSEA = .036]. As expected, parent spiritual beliefs significantly and positively influenced teen spiritual beliefs, which sequentially are related to teen spiritual practices. In turn, teen spiritual practices reduced significantly the chance of teen alcohol use. The parents' spiritual practices, which are significantly determined by the parents' spiritual beliefs, are found to serve two important functions. First, they have a significant impact on teen spiritual practices, which in turn are related to lower levels of teen alcohol use. Second, they stimulate more parental monitoring of the teen, which is important to prevent teen alcohol,

tobacco, and drug use. Parental spirituality does not have a direct effect on reducing any of the teen ATOD outcomes. Controlling for the parents' education levels and the teens' ages and genders, parental spirituality is associated with lowered teen ATOD use by both influencing teen spiritual practices and increasing the monitoring activities on the teen.

Figure 2 shows the final structural model of spirituality and the adolescents' intentions to have sex in the future (in the next six months). This model fit the data well [χ^2 (N = 405, df = 25) = 47.08, p = .004, CFI = .95, RMSEA = .047 (90% CI = .026 -.068)]. The likelihood of future sex is significantly suppressed only by parental monitoring. Importantly, the role of the parents' spirituality toward the prevention of intentions to have sex among adolescents is only indirect, i.e., parental spirituality triggers parental monitoring, which in turn reduces the teen's early sexual initiation.

As revealed in Figure 3, the model for pre-sexual behaviors fit the data very well [χ^2 (N = 405, df = 24) = 44.71, p = .004; CFI = .96; RMSEA = .048 (90% CI = .026 -.069)]. Unlike the analysis of intentions to have sex in the previous model, the results from the final structural model of spirituality and the adolescents' pre-sexual behavior show that the pre-sexual behaviors of adolescents are significantly related to the spirituality of the family through the teens' own spirituality. There are significant effects from the parents' spirituality that influence the adolescents' spiritual beliefs and practices. The adolescents' religious practices then significantly reduce pre-sexual behaviors. As found in all of the previous models, the parents' spirituality also works to reduce the adolescents' pre-sexual behaviors by way of stimulating parental monitoring.

In summary, the effects of the parents' spirituality on adolescent risk behaviors are found to be both direct and indirect. The indirect paths reflect the idea that spirituality first impacts via the socialization process of inducing teen spirituality and then via the increase in parental monitoring of teens. Table 3 summarizes the three final structural models by presenting the direct and indirect effects of parent and teen spirituality and parental monitoring on problem behaviors including teen ATOD use and teen sexual behaviors and intentions.

In Table 3, the most important direct effect on behavior outcomes of adolescents apart from the control variables is parental monitoring. For example, the standardized coefficient of parental monitoring on cigarette use (-.38) is among the highest. The second most important direct effect is the teens' spiritual practices. The standardized coefficients range from -.11 to -.27. In general, the parents' spirituality and the teens' spiritual beliefs only act indirectly via the two factors mentioned earlier. With the exception of future sex likelihood, the total indirect effects of parent spirituality and teen spiritual beliefs combined can be quite sizeable. Compared to the effect of parental monitoring of teens, "family spirituality", which combines both parent and teen measures, can have a comparable if not equally substantial impact on the behavior of adolescents.

Discussion

The prediction that parental spirituality has positive associations with the prevention of adolescent risk behaviors is consistently confirmed in the path models. Spirituality in the family including increased teens' spiritual practices and a higher level of parental monitoring is significantly related to teens' alcohol and tobacco use and pre-sexual behaviors. The negative relationship to drug use is also evident although the statistical association is not as strong. This may be due to the low rates of drug use within this young adolescent population.

As for sexual intentions, the protective influence of parental spirituality is indirect and is applied through increased parental monitoring. While teen spirituality is often predicted by (and perhaps a result of) the parents' spirituality, it does not empirically reduce sexual intentions or the likelihood to have sex in the future. Teens may have a clear idea about their level of parental monitoring at present and expect that it will continue in the future, so they know they will have difficulty engaging in risky behaviors. However, in comparison, they may not feel confident in their own long-term spiritual beliefs and practices ahead of time. It is possible that teens may not be sure how their spirituality fits in with their ideas about actual sex just yet because their spiritual beliefs are still being formed. The stability of spirituality among early adolescents as they are growing up needs to be further investigated.

Although the hypothesis that the parents' spirituality will have positive effects on the prevention of adolescents problem behaviors is consistently confirmed in the path models, the general impact of parents' spirituality tends to work indirectly by influencing teen spiritual practices and reinforcing parental monitoring and knowledge of teen whereabouts. The parents' spiritual beliefs determine their spiritual practices, which are found to be related to the teens' spiritual practices. Teen spiritual practices then can serve as a protective factor against problem behaviors. It is likely that the Buddhist teachings and the related parental sense of duty found in those with strong parental spiritual practices causes an increase in monitoring practices, which in turn could prevent the teen from engaging in problem behaviors. The impact of spirituality on adolescent behaviors appears to be complex and related to intergenerational relations. Comparing the direct and indirect effects of the determinants of teen problem behaviors, it is evident that, although monitoring plays a major role, it is also strengthened by parental spirituality. In addition, the importance of spirituality in the family (especially that found in the teens) appears to be equal to the influence of parental monitoring. This is because spirituality functions not only straightforwardly but also interactively among family members in the prevention of problem behaviors among Thai adolescents.

These findings suggest that the spiritual beliefs and practices that have traditionally sustained the culture of Thailand are important to the next generation. Yet, there are a number of forces that threaten the transmission of these spiritual practices and beliefs across the generations. For example, the migration of rural Thai youth to the cities disrupts the familial support systems and traditions. The increased globalization of this "youth culture" may result in traditional values being less important and less valued.

Despite various strengths, this study also has limitations. Because there were relatively low rates of lifetime alcohol tobacco and drug use, we found it necessary to use lifetime measures. As youth become older, the analyses need to be repeated for quantity and for specific types of use for different drugs to further test these models. Because the data in this study are cross-sectional, any conclusions about causality are limited. Longitudinal data that are presently being collected in the Thai Family Matters Project will help to confirm directionality. Because the target population of this study was limited to a representative sample of families in Bangkok, generalization to the whole country of Thailand is still restricted. In addition, while the study focused on the family domain, it did not include other important domains of the adolescent ecology such as community, school, and peers. Given these limitations, further research is needed to examine how these relationships are sustained across the age span. Understanding how spirituality may change as the teen ages is also needed to provide a balanced understanding of the role of spirituality in the building of positive youth assets and the prevention of problem behaviors in youth.

Conclusion

Both parent and youth spirituality are important in decreasing risky behaviors for youth in Thailand. Thus, the potential to include spirituality in prevention programs designed for Thailand offers important directions for improving public health programs. Taking into consideration the roles, functions, and dynamism of the family seems to be quite important. Sensitivity to advocating for spirituality in the public health domain is a concern given political and cultural constraints in school and public programs. However, the family is able to define spirituality in their own terms and is probably one of the most appropriate units and most comprehensive points of entry for public health intervention in Thailand.

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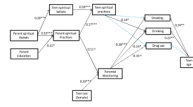


Figure 1.

Final Structural Model of Spirituality and the Adolescents' ATOD use. Standardized robust weighted least squares (RWLS) coefficients are shown. Model fit: χ^2 (N = 355, df = 18) = 26.25, $p = .092$, CFI = .96, RMSEA = .036.

* $p < .05$, ** $p < .01$, *** $p < .001$.



Figure 2.

Final Structural Model of Spirituality and the Adolescents' Sexual Intention. Standardized maximum likelihood coefficients are shown. Model fit: χ^2 (N = 405, df = 25) = 47.08, p = .004; CFI = .95; RMSEA = .047 (90% CI = .026 -.068).
 * p < .05, ** p < .01, *** p < .001.



Figure 3.

Final Structural Model of Spirituality and the Adolescents' Pre-sexual Behaviors.

Standardized maximum likelihood coefficients are shown. Model fit: χ^2 (N = 405, df = 24) = 44.71, p = .004, CFI = .96, RMSEA = .048 (90% CI = .026 -.069).

* p < .05, ** p < .01, *** p < .001.

Table 1
Percentage and mean score of teens who reported having problem behaviors by age and gender of the teens.

Problem behaviors	13- year teenagers			14- year teenagers		
	Male	Female	p-value	Male	Female	p-value
Alcohol and Drug Use (%)						
Have you ever, even once, had a drink of any type of alcoholic beverage?	21.7 (115)	12.1(106)	.074	23.8 (84)	31.6 (95)	.317
Have you ever smoked cigarettes in your life?	8.9 (111)	2.9 (103)	.044	8.5 (81)	8.8 (92)	.080
Have you ever, even once, used any form of marijuana?	0.9 (111)	0.0 (106)	1.000	2.4 (82)	1.0 (96)	.595
Have you ever, even once, used any form of inhalant?	1.8 (110)	0.0 (107)	.498	2.4 (85)	0.0 (96)	.219
Have you ever, even once, used any form of stimulants not prescribed for you, in order to get high?	0.9 (112)	1.0 (103)	1.000	1.2 (83)	0.0 (94)	.469
Have you ever, even once, used any form of sedatives not prescribed for you, in order to get high?	0.0 (115)	1.0 (105)	.477	0.0 (82)	0.0 (94)	-
Sexual Intention (mean)						
Mean Score (1 to 4) of self report of likelihood to have sex in the next six months	1.28 (98)	1.07 (98)	.022	1.29 (79)	1.06 (89)	.003
Pre-sexual Behaviors (%)						
Have you ever held hands with a boy or girl that you liked?	29.2 (106)	22.6 (104)	.128	42.7 (82)	40.9 (93)	.618
Have you were hugged a boy or girl that you liked?	8.5 (106)	14.2 (106)	.554	13.3 (83)	23.7 (93)	.031
Have you ever kissed a boy or girl on the cheek?	5.7 (106)	7.5 (107)	.716	16.7 (84)	15.2 (92)	.156
Have you ever kissed a boy or girl on the lips?	1.8 (109)	0.9 (108)	.392	7.1 (84)	5.3 (95)	.601
Have you ever kissed a boy or girl on the mouth?	0.9 (110)	0.9 (106)	1.000	6.0 (84)	5.4 (93)	.282
(For boys) Have you ever touched a girl's breasts?	3.7 (109)	NA	-	11.0 (82)	NA	-
(For girls) Have someone touched your chest or breasts?	NA	1.9 (106)	-	NA	3.2 (93)	-
Have you touched someone else's private parts below the waist?	3.7 (107)	2.8 (108)	.260	8.5 (82)	6.5 (93)	.307
Have someone ever come into contact with your private parts below the waist?	0.9 (112)	0.0 (110)	1.000	4.8 (83)	1.1 (93)	.297
Parental Monitoring (mean)						
Mean score (1 to 4) of regularity of knowledge of child where-about as reported by teens	3.03 (116)	3.13 (109)	.275	2.85 (87)	3.20 (94)	.001

Note: Number of cases analyzed (N) are in parentheses. The number of cases in each column may not be equal because of the "don't know" category and/or refusal to answer a particular question.

The chi-squared test was used to measure gender differences for drug and alcohol use and pre-sexual behaviors; The F-test was used to measure gender differences for future sex likelihood and parental monitoring.

Table 2
Percent Distribution of Measures of Spirituality and Religious Beliefs and Practices among Parents and Teens.

Spirituality Beliefs and Practices	Level of Spirituality Beliefs and Practices				Number of cases
	A lot	Some what	Little or not quite	Not at all	
Spiritual Beliefs					
Perception of the importance of spiritual beliefs to self					
• parent	57.5	36.3	5.3	1.0	100.0
• teen	44.4	44.9	7.4	3.3	100.0
• teen of most highly spiritual parent	54.0	37.9	5.4	2.7	100.0
Belief in the help of religious prays or meditation ⁱ					
• parent	35.8	45.5	14.5	4.1	100.0
• teen	30.6	42.5	21.8	5.1	100.0
• teen of most highly spiritual parent	41.7	38.3	18.3	1.7	100.0
Belief in Reincarnation					
• parent	30.0	33.3	23.8	12.9	100.0
• teen	24.5	43.3	24.8	7.5	100.0
• teen of most highly spiritual parent	30.6	46.3	19.0	4.1	100.0
Belief in Karma					
• parent	56.4	31.0	9.8	2.9	100.0
• teen	46.8	35.4	14.4	3.5	100.0
• teen of most highly spiritual parent	54.8	29.4	12.3	3.5	100.0
Spiritual Practices					
Regular religious prayer or meditation ⁱⁱ					
• parent	34.0	38.1	12.9	15.0	100.0
• teen	33.9	43.3	9.1	13.7	100.0
• teen of most highly spiritual parent	44.8	36.6	6.0	12.7	100.0
Religious prayer or meditation when life is stressful ⁱⁱⁱ					
• parent					420
• teen					395
• teen of most highly spiritual parent					113

Spirituality Beliefs and Practices	Level of Spirituality Beliefs and Practices					Number of cases
	A lot	Some what	Little or not quite	Not at all	Total	
• parent	27.2	24.0	24.3	24.5	100.0	416
• teen	13.5	28.1	38.5	19.9	100.0	392
• teen of most highly spiritual parent	16.2	36.2	24.8	22.9	100.0	105
<i>Tamboon and/or Saibar^{iv}</i>						
• parent	22.6	53.8	19.8	3.8	100.0	420
• teen	7.4	54.1	31.5	6.9	100.0	403
• teen of most highly spiritual parent	15.2	56.5	21.7	6.5	100.0	92
Observing the Five Precepts ^{iv}						
• parent	20.2	46.9	21.9	11.0	100.0	420
• teen	10.1	48.9	30.7	10.3	100.0	397
• teen of most highly spiritual parent	17.5	51.2	26.2	5.0	100.0	80

ⁱThe four corresponding codes are very helpful / helpful / neutral or mixed / unhelpful or very unhelpful.

ⁱⁱThe four corresponding codes are daily or almost daily / about once a week or once a month / a few times a year / never.

ⁱⁱⁱThe four corresponding codes are always / most of the time / hardly ever / never.

^{iv}The four corresponding codes are very often / often / seldom / never.

Note: The number of cases in comparable rows may not be equal because of the “don't know” category and/or refusal to answer a particular question

Table 3
Direct and Indirect Effects of the Parents' and Teens' Spirituality and Parental Monitoring on Teen ATOD use and Teen Sexual Behavior.

Major Constructs	Alcohol Use		Cigarette Use		Drug Use		Sexual Intention		Pre-sexual Behaviors	
	Direct Effects	Indirect Effects	Direct Effects	Indirect Effects	Direct Effects	Indirect Effects	Direct Effects	Indirect Effects	Direct Effects	Indirect Effects
Parent spiritual beliefs		-.036		-.057*		-.070		-.008+		-.044***
Parent spiritual practices		-.034+		-.063*		-.059		-.016+		-.041**
Teen spiritual beliefs		-.064		-.080		-.134				-.079**
Teen spiritual practices	-.109		-.136		-.227				-.14**	
Parental monitoring	-.145*		-.380***		-.194+		-.14**		-.18***	
Age of teen	.223**		.240**		.073				.19***	
Teen sex		-.028+		-.073**		-.037		-.017+		-.024*
Parent education		-.004		-.007		-.006		-.002		-.004+

+ p < .10

* p < .05

** p < .01

*** p < .001