

**The Influence of Family Religiosity During Adolescence on Risky Behaviors in Young Adulthood**

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Child Trends

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The years of adolescence and the transition to adulthood are associated with increases in rates of risky behavior, including the use of drugs and alcohol, delinquency, and unsafe sexual behavior (Bradley & Wildman, 2002; Tucker, Ellickson, Edelen, Martino, & Klein, 2005). While a large quantity of research has demonstrated that family religious activities and parental beliefs are protective factors against risky behaviors during adolescence (Hair, Moore, Hadley et al., 2009), few studies have examined the potential lasting effects of religiosity during adolescence on participation in risky behaviors into young adulthood (Manlove, Logan, Moore, & Ikramullah, 2005).

In our previous work, we demonstrated the importance of both belief- and action-oriented family religiosity during adolescence in the development of young adult mental health (Hair, Moore, Hadley, & Sidorowicz, 2008). Specifically, strong parent religious beliefs were associated with strong young adult religious beliefs, which were, in turn, associated with positive mental health in young adulthood. Religious beliefs are defined by the degree to which young adults feel that religion is important in their lives. Additionally, more frequent religious attendance among parents led to more frequent religious attendance among youth, which affected young adult religious beliefs. Furthermore, when parents engaged in family religious routines, higher levels of parental awareness of their children's activities and engagement in non-religious family activities were found; which, in turn, was associated with more positive mental health in young adulthood (Hair, Moore, Hadley et al., 2008).

### *Measuring Religiosity*

Hair et al. (2008) offered preliminary evidence for the notion that religious attendance and beliefs are separate but important components for developing religiosity and positive mental well-being during the transition to adulthood. Even though parents are the main influence on their children's religious beliefs and patterns of religious activity, it is important to take both parents' and adolescents' religiosity into consideration (Gunnore & Moore, 2002; King, Furrow, & Roth, 2002)

Therefore, this study uses both parent and adolescent religious attendance and beliefs as measures of family religiosity.

### *The Effects of Family and Adolescent Religiosity*

There has been a great deal of research on the effect of religiosity and risk behaviors in adolescents. Religious adolescents are also less likely to commit crimes than nonreligious adolescent, even with controls for age, gender, region, and education of parents (Smith & Faris, 2002). A large body of literature demonstrates that religious adolescents are also more likely to delay onset of sexual activity past early adolescence, decreasing the chance of becoming a teen parent (Manlove, Terry, Gitelson, Papillo, & Russell, 2000; Meier, 2003; Rostosky, Wilcox, Wright, & Randall, 2004). In addition, peer norms within a social network at church were found to be more influential in delaying sexual initiation than measures of service attendance (Mott, Fondell, Hu, Kowaleski-Jones, & Menaghan, 1996). In addition, a study using the National Study of Youth and Religion (NSYR) data found that the religiously devoted youth were significantly less involved with smoking and drinking, pre-marital sexual activity, and viewing X-rated and pornographic materials (Smith & Denton, 2005). Furthermore, in a nationally representative sample of adolescents ages 11-18 who were surveyed in the year 2000, youths who said religion was important in their lives and/or attended religious services frequently were less likely to smoke, use alcohol, be truant, be sexually active, use marijuana, or report feelings of depression, even when controlling for family background variables and self-esteem compared to their non-religious peers (Sinha, Cnaan, & Gelles, 2007).

Few studies have examined the potential lasting effects of family religious activities and parental beliefs during adolescence on engagement in risky behaviors into young adulthood. Family religious activities at age 16 consistently predicted favorable outcomes regarding adolescent smoking, binge drinking, and marijuana use when respondents were 20-years-old (Hair et al., 2009). High

religiosity also protected against increases in drug and alcohol use during the transition to college (White, McMorris, Catalano et al., 2006).

### *Mediators Between Family Religiosity and Risk Behaviors*

Previous research has demonstrated that parental awareness, family routines, and peer social support are predictors of whether an adolescent will engage in risky behaviors (DiClemente, Wingood, Crosby et al., 2001; B.H. Fiese, 1993; Prinstein, Boergers, & Spirito, 2001). Less is known about the protective value of these factors remains during emerging adulthood. These mediators will be used in the analysis to better understand the pathways in which religiosity ties to risk behaviors in emerging adulthood. Below we review the literature on how the three non-religion oriented mediators are related to risk behavior during adolescence and emerging adulthood where available, as well as discuss the expected trends in emerging adulthood.

Parental awareness. – Parental awareness of adolescents' activities and friends during adolescence has been associated with lower levels of substance abuse (Mott, Crowe, Richardson, & Flay, 1999) and lower levels of sexual activity (Meshke & Silbereisen, 1997; Romer, Black, Ricardo et al., 1994). In addition, one study found that higher levels of parental monitoring were still found to be beneficial during emerging adulthood, protecting against increases in heavy episodic drinking and moderating the effect of going to college on marijuana use (White et al., 2006).

Routine family activities. (From previous paper) The establishment of routine family activities has been found to be indirectly related to adolescent problem drinking (Barbara H. Fiese, 1993) and delinquent behaviors in youth (Hair, Moore, Garrett, Ling, & Cleveland, 2008). It is hypothesized that level of family routine will still play a small role in predicting risky behavior in adolescence.

Social support. High levels of pro-social behavior among an adolescent's friends were inversely correlated with adolescent violence and substance use (Prinstein et al., 2001), and association with deviant peers has been found to predictive of internalizing and externalizing problems during

adolescence (Dekovic, 1999).. It is believed that strong levels of positive social support will continue to decrease the likelihood of risk behaviors in emerging adulthood.

*The Effect of Sociodemographic Variables:*

There is debate over whether the relationships found between family religiosity and positive young adult outcomes among white and middle class families exist for black, non-Hispanic and Hispanic families and families living below 200% of the poverty threshold. Research has documented the importance of religion among disadvantaged groups (Brega & Coleman, 1999). It is likely that the pathways from family religious beliefs and attendance found in our previous work may be more pronounced in disadvantaged populations such as racial/ethnic minorities or families living in poverty. Our current study will focus on this research question by examining key demographic subgroups determined by race, poverty level, and gender.

Race. Significant differences by race have been found in the likelihood of engaging in risk behaviors such as drinking alcohol, using drugs, and participating in risky sexual behaviors. For example, the highest cigarette and alcohol use is reported among white teens, whereas African-American adolescents have been found to have earlier onset of intercourse. (Blum, Beuhring, Shew et al., 2000; Wallace, Forman, Guthrie et al., 1999). Levels of religious activities and beliefs are often higher in racial minorities, so this paper will address whether family religiosity will be a stronger predictor of risk behaviors from adolescence through early adulthood in racial minorities.

Poverty level. Economic disparity is another strong predictor of adolescent risk behaviors (citation?). Evidence suggests that neighborhood economic disadvantage accounts is a strong predictor of risky sexual attitudes (Browning & Burrington, 2006; South & Baumer, 1999) and activity (Browning, Leventhal, & Brooks-Gunn, 2004). It is believed that poverty level will continue to influence both level of religiosity and likelihood to participate in risky behaviors during emerging adulthood.

Gender effects. A review of ten longitudinal studies looking at religiosity and adolescent sexual behaviors found significant gender variations in religion's impact on sexual activity (Rostosky et al., 2004). It is expected that gender differences will persist during emerging adulthood.

### *Importance of Current Study*

The rates of participation in risky behaviors such as drinking, using drugs, and having unsafe sex peak between the ages of 18-25, and yet very little is known about the factors during adolescence that predict risky behaviors during the transition to adulthood (Arnett, 1996; Gullone, Moore, Moss, & Boyd, 2000). In addition, most of the available research on emerging adulthood is from cross-sectional studies on college student populations and therefore is not representative of young adults as a whole. This study uses data from a nationally-representative sample that has followed thousands of youth from early adolescence through early adulthood, allowing for longitudinal analysis of the factors during adolescence that predict later risk behaviors. In addition, having a large national sample allows for subgroup analysis to understand the strength of the relationship between religiosity and risky behaviors for racial minorities, youth in poverty, and gender.

## Methods

### *Data*

The National Longitudinal Survey of Youth, 1997 cohort (NLSY97), is a nationally representative sample of 8,984 adolescents, ages 12–16 in 1997, who have been surveyed annually over time. The survey is primarily sponsored by the Bureau of Labor Statistics of the U.S. Department of Labor and examines school progress, labor force behavior, and the transition from school to work. To accomplish this task, extensive information is collected on the youth's labor market behavior and educational experiences. The NLSY97 also collects data on a broad array of child and family interactions and relationships, as well as adolescent health-related behaviors.

*Sample.* Our sample includes the 4,834 respondents who were 12 to 14 years old in December 1996. The sample is 51.5% males ( $n = 2487$ ) and 48.5% females ( $n = 2347$ ). The race and ethnicity breakdown was as follows: 49.8% non-Hispanic white ( $n = 2402$ ), 21.0% Hispanic ( $n = 1010$ ), 25.6% non-Hispanic black ( $n = 1235$ ), and 3.8% other race/ethnicity ( $n = 187$ ). Approximately 24% of our sample was below 200% of the income to poverty threshold ( $n = 1659$ ).

### *Measures*

*Predictor measures.* We used the following two predictor variables in our model: (1) Parent religious beliefs in 1997 and (2) parent religious attendance in 1997. Parent religious beliefs were measured using a series of five true/false questions (e.g., “I often ask God to help me make decisions.”), with higher scores indicating stronger beliefs ( $M = 3.46$ ,  $SD = 1.40$ ). Parent religious attendance was measured by assessing how often in the 12 months prior to the interview date a parent attended worship services.

*Outcome measures.* We examined several outcome measures during young adulthood: (1) illegal substance use between ages 20 and 23; (2) binge drinking between ages 20 and 23; (3) heavy smoking between the ages of 20 and 23; (4) delinquent acts between the ages of 20 and 23; and (5) unsafe sexual behavior between the ages of 20 and 23.

For all of the outcomes, individual measures were created at each round and then converted into age-based measures depending on the respondent’s age at the time of the interview. Composite indices were then constructed measure the behavior between the ages of 20 and 23. The composite measure indicates the number of years that the respondent engaged in the risky behavior. Illegal substance use was measured by using the items in each round of the survey that asked, the respondents if they had used marijuana or other hard drugs since the date of last interview ( $M = .94$ ,  $SD = 1.41$ ). Binge drinking was measured by using the item from each round of the survey that assessed the number of days that a respondent drank more than 5 drinks a day in the last 30 days ( $M = 1.50$ ,  $SD =$

1.55). Heavy smoking was measured by using the items from each round of the survey that assessed the number of cigarettes smoked per day in the last 30 days. Heavy smoking was characterized as smoking a pack or more a day ( $M = .61$ ,  $SD = 1.27$ ). Delinquent acts was measured by using the items from each round that asked the respondents if they had engaged in any of the following behaviors since the date of last interview: carried a gun; belonged to a gang; destroyed property; stole something less than \$50; stole something more than \$50; sold drugs; or attacked someone ( $M = .31$ ,  $SD = .78$ ).

Unsafe sexual behavior was measured by using the items from each round that assessed whether the respondent had unprotected sex ( $M = 1.23$ ,  $SD = 1.25$ ). If the respondent was married or if they had abstained from sexual behaviors, they were coded as having safe sexual behaviors.

*Mediators.* We included a series of mediators related to religious activities in our model, including (1) family religious activities between the ages of 13 and 17, (2) youth religious attendance, and (3) young adult religious beliefs. Family religious activities were measured by assessing whether the family did (45.5%) or did not (29.7%) consistently attend religious services from when the respondent was 13 years old through when he or she was 17 years old (25.7% missing). Youth religious attendance was measured when respondents were 18, 19, and 20 years old. Participants were asked how often they had attended worship services in the 12 months prior to the interview date. If the respondent reported attending services more than 5 times in at least two of the three years then the respondent was coded as “attending religious services”. Finally, young adult religious beliefs were measured during Round 9 when respondents were 21, 22, or 23 years old. Beliefs were assessed using the same five-item scale used to measure parent religiosity in 1997 ( $M = 2.55$ ,  $SD = 1.58$ ).

#### *Sociodemographic Control Variables*

We also controlled for a number of sociodemographic covariates in the relationship between marital quality/parent-adolescent relationship and health outcomes. These covariates can be divided

into the following five categories: (1) marital characteristics, (2) family characteristics, (3) adolescent characteristics, (4) peer characteristics, and (5) environment characteristics.

*Marital characteristics.* The marital characteristics that we examined were: (1) whether or not the adolescents' parents were married, biological parents; and (2) whether or not the parents experienced a marital disruption between Rounds 1 and 3 (1997 to 1999). Some of the parents in the relationship were step- or adoptive parents to the adolescents and some were biological parents. For this covariate, we divided respondents based on whether they did (58.6% of sample) or did not (41.4%) live with two biological or adoptive parents. A marital disruption was defined as any change in the marital structure of those parents who were married during wave one (18.9% of sample).

*Family characteristics.* Family characteristics included the following: (1) family income; (2) number of siblings; (3) age of the biological mother at the time of the adolescent's birth; (4) parental employment status; and (5) the highest level of education across both parents. Family income was assessed using an income-to-poverty ratio calculation. Respondents were divided into the following four categories based on their income-to-poverty ratio: (1) income to poverty ratio less than 100% (18.0% of the sample); (2) income-to-poverty ratio between 100% and 199% (16.3% of the sample); (3) income-to-poverty ratio between 200% and 399% (25.0% of the sample); and (4) income to poverty ratio 400% or above (15.4% of the sample).<sup>1</sup> A respondent's number of siblings was counted ( $M = 1.60$ ,  $SD = 1.28$ ), and this served as a continuous variable. Respondents were divided into one of the following four groups based on the age of the biological mother at the time of the adolescent's birth: (1) less than 20 years old (18.4% of the sample); (2) 20 to 29 years old (59.0% of the sample); (3) 30 to 39 years old (21.7% of the sample); or (4) 40 years old or above (.9% of the sample). For the parental employment covariate, respondents were placed in one of the following three groups: (1) neither parent employed (10.7%); (2) one parent employed (40.9%); or (3) both parents employed (41.2%). Finally, for the highest level of education between both parents covariate, respondents were

placed in one of the following four groups: (1) less than high school (23.5% of the sample); (2) high school graduate (28.9% of the sample); (3) some college (24.1% of the sample); or (4) college or higher (23.6% of the sample).

In addition, we measured several aspects of family processes including: (1) quality of the parent-adolescent relationship from 1997 to 1999, (2) parental awareness from 1997 to 2001, and (3) routine family activities between the ages of 13 and 17. In order to assess the quality of the parent-adolescent relationships, we examined adolescent perceptions of their relationships with their mothers and their relationships with their fathers during Rounds 1, 2, and 3. Respondents were asked to rate their level of agreement with the following three statements: 1) I think highly of him/her, 2) He/she is a person I want to be like, 3) I really enjoy spending time with him/her. The response options for these three statements were as follows: 0 = Strongly Disagree, 1 = Disagree, 2 = Neutral or Mixed, 3 = Agree, and 4 = Strongly Agree. Respondents were then asked the following four questions (two addressing support and two addressing conflict) about their relationships with their parents: 1) How often does he/she praise you for doing well, 2) How often does he/she criticize you or your ideas, 3) How often does he/she help you do things that are important to you, 4) How often does he/she blame you for his/her problems. Participants responded to these questions using the following scale: 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Usually, and 4 = Always. Negative behavior items were reverse-coded for data analysis. Latent class growth modeling was used to develop 4 profiles of the parent-adolescent relationship: 1) sustained high quality relationship with parent over time; 2) high quality relationship with parent that decreases over time; 3) low quality relationship with parent that increases over time; 4) sustained low quality relationship with parent over time (Hair, Moore, et al. 2009).

We measured parental awareness using a scale that combined adolescent perceptions of mother and father awareness (e.g. “How much does she/he know about who your teachers are and what you

are doing in school?") from Rounds 1 through 5. Responses on each awareness question (1 - 4) were summed across the five rounds to create a composite score accounting for perceived awareness of both mothers and fathers. Scores ranged from 0 to 160 ( $M = 89.24$ ,  $SD = 25.55$ ). In order to assess engagement in routine family activities between ages 13 and 17, we created a 56-point scale combining answers from each of the appropriate rounds on the following two indicators: (1) Number of days per week the family eats dinner together, and (2) number of days per week the family does something fun together ( $M = 25.61$ ,  $SD = 10.84$ ).

*Adolescent characteristics.* The adolescent characteristics examined as potential covariates included the following: (1) age; (2) gender; (3) race and ethnicity; (4) disability status; and (5) whether or not the adolescent was reported to lie or cheat in Round 1. Adolescent age in years during Round 1 ( $M = 13.13$ ,  $SD = .79$ ) was used as a continuous covariate. Adolescent gender was a covariate divided into two groups, male (51.5% of the sample) and female (48.5% of the sample). A combined race and ethnicity variable was examined as a potential covariate. The three race/ethnicity categories that were used included Hispanic (20.9% of the sample), non-Hispanic black (25.5% of the sample), and non-Hispanic white (49.6% of the sample). Adolescent lies or cheats was measured through a combined adolescent and parent's report of adolescent's lying or cheating. The respondents were divided into three categories: (1) not true (50.9% of the sample); (2) sometimes true (45.0% of the sample); or (3) often true (4.0% of the sample). A covariate was also used that divided adolescents based on whether they did (18.7% of sample) or did not report having a disability at age 16. Disabilities included mental or emotional problems, sensory problems, or other health conditions.

We also measured the mental health of the young adult. The Mental Health Scale was assessed during Round 10, when youth were between the ages of 21 and 23. Participants responded to a series of five questions addressing their mental states in the last month (e.g., "How much of the time during the last month have you been a very nervous person?"). The five mental states addressed in the scale

include feelings of calmness, nervousness, sadness, depression, and happiness. Response options were “all of the time,” “most of the time,” “some of the time,” or “none of the time.” Higher scores on the scale were indicative of better mental health ( $M = 10.58$ ,  $SD = 2.40$ ), and scores ranged from 0 to 15.

*Peer characteristics.* The peer characteristics that were examined included positive and negative peer behaviors. The adolescents were asked to rate the percentage of their peers who displayed varied behaviors. The variables were then combined into a composite that represents the average percentage of peers engaged in these behaviors: (1) almost none (less than 10%); (2) about 25%; (3) about half (50%); (4) about 75%; (5) almost all (more than 90%). Positive peer behaviors include regular religious service attendance, participation in sports, clubs, or other activities, planning to go to college, and volunteer activity. Approximately 50% of the adolescents reported that 50% or more of their peers in engaged in positive behaviors. Negative peer behaviors include belonging to a gang, cutting class, and having sex. Approximately 70% of adolescents reported that 25% or fewer of their peers engage in these negative behaviors.

We also measured the youth’s perceived closeness to a best friend in Round 6. The indicator combined two 10-point questions assessing the respondent’s perceived closeness with, and caring for, a best friend. Scores on the scale ranged from 0 to 20 ( $M = 17.67$ ,  $SD = 2.86$ ).

*Environmental characteristics.* The environmental characteristics that were examined as potential covariates included the following: (1) whether or not the adolescent lived in an urban area; and (2) the adolescent’s score on the physical environment risk index. Urban living status was divided into the following two categories: (1) adolescents who lived in urban areas (73.2% of the sample); and (2) adolescents who lived in rural areas (22.4% of the sample). Finally, the adolescent’s score on physical environment risk index ( $M = 1.19$ ,  $SD = 1.41$ ) was used as a covariate. The environmental risk index assessed the condition of the neighborhood and the house in which the respondent was living. It addressed issues such as crime and the availability of utilities.

### *Strategy of Analysis*

Structural equation modeling was used to examine the hypotheses that parent religiosity (beliefs and attendance) in early adolescence would be related to young adult outcomes including. We also tested a series of mediators in this relationship, including family religious activities, the parent-youth relationship (1997-1999), parental awareness, family activities, youth religious attendance (2002), perceived closeness to a best friend, and young adult religious beliefs (2004).

In specifying the measurement component of the model, we used the individual items described above for the constructs of parent-reported religious beliefs and religious attendance, perceived parent-adolescent relationship, parental awareness, and closeness to a best friend, and self-reported family religious activity engagement, non-religious activity engagement, youth religious attendance, and young adult religious beliefs. As discussed, a number of contextual variables were used as covariates in the analyses, including the adolescent's race/ethnicity, age, gender, number of siblings, disability status, and self-reported lying and cheating; family income; parent marital status, marital disruptions, highest combined educational level, and employment status; biological mother's age at the time of the respondent's birth; positive and negative peer behaviors; and urban living status and physical environmental risk.

Cross group analyses were conducted to examine whether the relationship between young adult religiosity, family religiosity, and young adult risky behavior existed for key socio-demographic subgroups (e.g., poverty, race/ethnicity, and gender).

### Results

Table 1 presents the standardized regression coefficients from the structural equation models for each of the young adult risky behaviors. To evaluate model fit, we used two conventional indices: the Comparative Fit Index (CFI) and the Non-Normed Fit Index (NNFI). For both, values of .95 or greater reflect an excellent fit of the specified model to the data, and values between .90 and .95 reflect an

adequate fit (L. Hu & P.M. Bentler, 1999; L. Hu & P. M. Bentler, 1999). In addition, we report on the root mean square error of approximation (RMSEA). A value of less than 0.05 indicates an adequately fitting model.

#### *Illegal substance use between ages 20 and 23*

The fit of the model examining illegal substance use,  $X^2(505) = 6257.75, p < .001$ , CFI = .93, NNFI = .92, and RMSEA = .05, indicated that the model describes the relationships adequately. Young adult religious beliefs and behaviors were significant predictors of illegal substance use between the ages of 20 and 23. Specifically, young adults with stronger religious beliefs in 2004 reported fewer years of illegal substance use between the ages of 20 and 23 ( $\beta = -0.14, p < .001$ ). In addition, young adults who reported attending religious service regularly between the ages of 18 and 20 also reported fewer years of illegal substance use between the ages of 20 and 23 ( $\beta = -0.18, p < .001$ ). Family religious beliefs and behaviors did not have a direct influence on illegal substance use; however, there was an indirect influence through the young adult's religious beliefs and religious attendance.

The subgroup analyses found that young adult religious beliefs was a significant predictor of illegal substance use as a young adult for white youth, Hispanic youth, and youth not in poverty. The remaining relationships were consistent with the full sample findings (see Table 2 and 3).

#### *Binge drinking between ages 20 and 23*

The fit of the model examining binge drinking,  $X^2(505) = 6275.50, p < .001$ , CFI = .93, NNFI = .920, and RMSEA = .05, indicated that the model describes the relationships adequately. Young adult religious beliefs and behaviors were significant predictors of binge drinking between the ages of 20 and 23. Specifically, young adults with stronger religious beliefs in 2004 reported fewer years of binge drinking between the ages of 20 and 23 ( $\beta = -0.17, p < .001$ ). In addition, young adults who reported attending religious service regularly between the ages of 18 and 20 also reported fewer years of binge drinking between the ages of 20 and 23 ( $\beta = -0.09, p < .001$ ). In addition, young adults who

were raised in families that engaged in family religious activities between the ages of 14 and 17 reported fewer years of binge drinking ( $\beta = -0.07, p < .001$ ).

When testing the relationships between religiosity and binge drinking across the socio-demographic subgroups, several patterns appeared (See Tables 2 and 3). First, young adult religious beliefs were a significant predictor of binge drinking between ages 20 and 23 for white youth, but not for black or Hispanic youth. There was no difference in the relationship between young adult religious beliefs and binge drinking for the poverty or gender subgroups. Religious attendance also remained an important predictor for all subgroups. In addition, for white youth, Hispanic youth, youth not in poverty, and male youth, family religious activities was a significant predictor of binge drinking as a young adult; however family religious activities was not a significant predictor for black youth, youth in poverty, or female youth.

#### *Heavy smoking between the ages of 20 and 23*

The fit of the model examining heavy smoking,  $X^2(505) = 6246.45, p < .001$ , CFI = .93, NNFI = .92, and RMSEA = .05, indicated that the model describes the relationships adequately. Young adult and Parent religious attendance were significant predictors of heavy smoking between the ages of 20 and 23. Young adults who reported attending religious service regularly between the ages of 18 and 20 reported fewer years of heavy smoking between the ages of 20 and 23 ( $\beta = -0.08, p < .001$ ). In addition, young adults whose parents reported higher religious attendance in 1997 reported fewer years of heavy smoking between the ages of 20 and 23 ( $\beta = -0.07, p < .001$ ). Neither the young adult's own religious beliefs nor the parents' religious beliefs directly influenced young adult heavy smoking.

The subgroup analyses for heavy smoking as a young adult found few differences between the subgroups. Parent religious attendance was a significant predictor of heavy smoking for the subgroups of white youth, youth in poverty, and female youth. The remaining relationships were consistent with the full sample findings

### *Unsafe sexual behavior between the ages of 20 and 23*

The fit of the model examining unsafe sexual behavior,  $X^2(505) = 6275.50, p < .001$ , CFI = .93, NNFI = .92, and RMSEA = .05, indicated that the model describes the relationships adequately. Stronger young adult religious beliefs in 2004 are significantly associated with fewer years of unsafe sexual behaviors between the ages of 20 and 23 ( $\beta = -0.06, p < .05$ ). However, young adults whose parents reported higher religious attendance in 1997 reported more years of unsafe sexual behavior between the ages of 20 and 23 ( $\beta = 0.05, p < .05$ ).

The subgroup analyses for unsafe sexual behavior as a young adult revealed several differences. Young adult religious beliefs were a significant predictor of unsafe sexual behavior as a young adult for the following subgroups: white youth, youth not in poverty, and male youth. In addition, parental religious attendance was a significant predictor of unsafe sexual behavior for white youth, youth not in poverty, and female youth. All other relationships were consistent with the full sample findings.

### *Delinquent behaviors between the ages of 20 and 23*

The fit of the model examining delinquent behaviors,  $X^2(505) = 6279.76, p < .001$ , CFI = .93, NNFI = .92, and RMSEA = .05, indicated that the model describes the relationships adequately. Neither young adult religious beliefs nor young adult religious attendance was associated with engaging in delinquent behaviors between the ages of 20 and 23. However, young adults who were raised in families that engaged in family religious activities between the ages of 14 and 17 reported fewer years of engaging in delinquent behaviors between the ages of 20 and 23.

The subgroup analyses found that family religious activities between the ages of 14 and 17 was a significant predictor of delinquent behaviors as a young adult for white youth, youth not in poverty, and male youth. The remaining relationships were consistent with the full sample findings.

### *Discussion*

Our study has demonstrated a clear link between young adult and family religiosity and young adult risky behaviors. Specifically, strong personal religious beliefs as a young adult were protective against many young adult risky behaviors including unsafe sex, substance use, heavy smoking, and binge drinking. In addition, young adult religious attendance appears to be a protective factor for young adult risky behaviors that could be elicited during a group function such as smoking, drinking, and substance use. Young adults were less likely to engage in heavy smoking, binge drinking, or illegal substance use between 20 and 23 when they had attended church regularly during the transition to adulthood. Although socially-normed behaviors such as delinquent behaviors were not related to young adult religious beliefs and attendance, participation in family religious activities as an adolescent appears to be a protective factor against these illegal behaviors as an adult. Similarly, participation in family religious activities as an adolescent was also a protective factor for binge drinking as a young adult.

Smith (2003) identify nine key factors through which religion might be linked to positive outcomes for adolescents: moral directives, spiritual experiences, role models, community and leadership skills, coping skills, cultural knowledge and experiences, social ties, network closure, and extra-community links. These nine factors can be grouped into three broader areas of influence: moral order, learned competencies, and social and organizational ties. The findings from this study suggest that all three of these broader areas of influence may be working simultaneously in young adults. For instance, participating in family religious activities during adolescence may allow adolescents the opportunity to develop moral guidelines, to have positive role models, and to learn competencies and social norms within the context of the family. Young adult religious attendance also provides young adults with social ties and a wider community network. Previous research has also linked religious attendance to the ability to exert self-control over behaviors (Wagener, Furrow, King, Leffert, & Benson, 2003). The findings from this study support this premise. Youth who attended religious

service regularly were less likely to engage in risky behaviors as young adults such as substance use, smoking, and binge drinking. The young adult's personal religious beliefs were also an important predictor of young adult risky behaviors. These findings suggest that the young adult's own spiritual experiences and moral development is guiding their behavior during the transition to adulthood.

Finally, this study extends our previous work to provide further evidence for the importance of both belief- and action-oriented religiosity during adolescence for young adult's development (Hair, Moore, et al. 2008). Family religious activities during adolescence continue to be an important protective factor of risky behaviors. And although, parent religious beliefs and attendance seldom directly influenced young adult risky behaviors, both were important in the development of young adult religious beliefs and behaviors.

This study also suggests that family religiosity is important for key socio-demographic subgroups. Although differences were found in which religiosity dimensions was important for a specific behavior or specific subgroup, both belief- and action-oriented religiosity functioned as protective factors of young adult risky behaviors across the sub-groups. Interestingly, young adult religious attendance was a more consistent predictor of young adult risky behaviors for youth in poverty and minority youth than young adult religious beliefs.

Our study has several limitations. First, personal religious beliefs of the youth were not asked until the youth were already in the transition to adulthood. It would be interesting to examine whether individuals maintain stable religious beliefs from adolescence into adulthood. Second, detailed questions about the type of religious activities that the youth engaged in are not asked in the survey. Third, the information on young adult risky behaviors was collected through self-report. It is possible that the youth may not have answered truthfully about engaging in risky behaviors. And finally, not all of our key measures were collected every year. Specifically, some of the measures such as parent religious beliefs and attendance were only asked in the first year of the survey.

### *Conclusion*

Recent research from the National Study of Youth and Religion (NSYR) found that nearly half of the adolescents in America feel that religion is an important part of their daily lives (Smith and Denton, 2005). In addition, participation in risky behaviors such as drinking, using drugs, and having unsafe sex peak between the ages of 18-25. This study uses data from a nationally-representative sample of youth followed from early adolescence through early adulthood to conduct longitudinal analyses of the factors during adolescence that predict risky behaviors as young adults. In addition, using a large national sample allowed for sub-group analysis to explore the relationship between religiosity and risky behaviors for racial minorities, for youth in poverty, and for difference by gender.

Our study demonstrates the beneficial consequences of religious belief and attendance on the risky behaviors of young adults. Paired with our previous work showing the beneficial effects of religiosity on young adult mental, this work suggests that religiosity may have lasting benefits for future marital and family relationships. Further research should explore the long term effect of family and young adult religiosity on family formation and marital quality.

Providing children with a supportive family environment in which they can develop their own moral guidelines and learn appropriate social behaviors is one of the most important things parents can provide for their children. One way to provide this environment is through a supportive spiritual and religious experience within the family. Strong moral development and spiritual identity can enhance personal health and well-being, and can potentially strengthen future family functioning for young adults.

Table 1. Standardized regression coefficients for young adult and family religiosity on young adult risky behaviors from the full structural equation model

	Illegal Substance Use between 20 and 23		Binge Drinking between 20 and 23		Heavy Smoking between 20 and 23		Unsafe Sex Between 20 and 23		Delinquent behaviors between 20 and 23	
	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig
<b><i>Young adult religion and mental health</i></b>										
Religious beliefs in 2004	-0.14	***	-0.17	***	0.01		-0.06	*	-0.02	
Religious attendance btwn ages 18 and 20	-0.08	***	-0.09	***	-0.08	***	-0.03		-0.03	
Mental health in 2005	-0.14	***	-0.05	**	-0.07	***	-0.05	**	-0.10	***
<b><i>Family religion</i></b>										
Family religious activities btwn ages 14 and 17	-0.02		-0.07	***	-0.03		-0.01		-0.06	*
Parent religious beliefs 1997	-0.02		-0.03		-0.02		0.00		-0.03	
Parent religious attendance 1997	0.01		-0.01		-0.06	**	0.05	*	0.02	
<b><i>Adolescent Characteristics</i></b>										
Adolescent Age	-0.04	*	-0.01		-0.04	*	-0.03		0.09	***
Adolescent Gender (Female)	-0.13	***	-0.23	***	-0.14	***	0.04	*	-0.23	***
Race/Ethnicity										
Black, non-Hispanic	0.00		-0.17	***	-0.24	***	-0.01		0.00	
Hispanic	-0.04	*	-0.06	**	-0.23	***	-0.07	***	-0.02	
White, non-Hispanic/Other	ref		ref		ref		ref		ref	
Adolescent lies or cheats	0.04	**	0.04	*	0.05	**	0.02		0.06	***
Adolescent has a disability	0.02		-0.01		0.01		0.02		0.02	
Adolescent religious preference										
Catholic	ref		ref		ref		ref		ref	
Protestant	0.00		-0.01		0.03		-0.01		0.02	
Other religion	-0.01		-0.06	***	-0.01		-0.04	*	0.00	

	Illegal Substance Use between 20 and 23		Binge Drinking between 20 and 23		Heavy Smoking between 20 and 23		Unsafe Sex Between 20 and 23		Delinquent behaviors between 20 and 23	
	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig
<b>Family Characteristics</b>										
Family Income										
Income to Poverty less than 100%	-0.01		-0.05	*	0.04		-0.07	**	0.03	
Income to Poverty 100% - 199%	-0.01		-0.05	*	0.07	***	-0.07	**	0.03	
Income to Poverty 200% - 399%	0.01		-0.05	*	0.05	*	-0.06	*	0.00	
Income to Poverty 400% plus	ref		ref		ref		ref		ref	
Missing Income information	-0.03		-0.05	*	0.04		-0.09	***	0.00	
2 bio parents married	0.01		0.02		0.02		-0.04		-0.01	
Experienced marital disruption btwn 1997 and 1999	0.02		-0.01		0.03	*	-0.03		0.04	*
Number of Siblings	-0.04	*	0.00		-0.03	*	-0.02		-0.03	
Bio Mom's age at Youth's birth										
Less than 20 old	-0.01		-0.03	*	0.00		-0.05	***	-0.01	
20-29 years old	ref		ref		ref		ref		ref	
30 - 39 years old	0.01		-0.01		-0.04	**	-0.03		0.00	
40 plus years	-0.01		-0.02		-0.02		-0.01		-0.01	
Parental employment										
Neither Parent employed	0.00		-0.02		0.02		-0.02		0.00	
One Parent employed	ref		ref		ref		ref		ref	
Both Parents employed	0.00		0.02		-0.03		0.02		0.01	
Highest Parental education										
Less than high school	-0.11	***	-0.06	**	0.10	***	-0.06	*	0.02	
High School graduate	-0.08	***	-0.03		0.10	***	-0.06	**	0.02	
Some College	-0.05	*	-0.03		0.08	***	-0.02		0.03	
College or more	ref		ref		ref		ref		ref	

	Illegal Substance Use between 20 and 23		Binge Drinking between 20 and 23		Heavy Smoking between 20 and 23		Unsafe Sex Between 20 and 23		Delinquent behaviors between 20 and 23	
	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig
<b><i>Parenting</i></b>										
Parent-Youth Relationship btwn 1997 and 1999										
High quality relationships with both parents	ref		ref		ref		ref		ref	
High quality only with Dad	0.01		-0.01		0.03		-0.02		0.01	
High quality only with Mom	-0.01		-0.01		0.04 *		-0.03		0.00	
Low quality relationship with both parents	-0.04 *		-0.04 *		0.04 *		-0.04 *		0.03	
Parental Awareness Scale	-0.08 **		-0.02		-0.05		-0.06 *		-0.05	
Family-adolescent activities btwn ages 14 and 17	-0.04		-0.05 **		-0.03		-0.08 ***		0.04	
<b><i>Peer Characteristics</i></b>										
Positive Peer behavior in 1997 index	-0.03 *		-0.04 *		-0.04 *		-0.02		-0.03 *	
Negative Peer behavior in 1997 index	0.05 **		0.02		0.06 ***		-0.01		0.07 ***	
Close to a best friend in 2002 (ages 18-22)	-0.08 **		-0.06 *		0.03		0.06 *		0.05	
<b><i>Community Characteristics</i></b>										
Lives in Urban area	0.03 *		0.00		-0.03 *		0.02		0.01	
Physical Environment Risk Index	0.02		-0.02		0.03		0.01		0.02	
	R square									
	0.13		0.20		0.15		0.07		0.10	
	RMSEA									
	0.05		0.05		0.05		0.05		0.05	

Source: National Longitudinal Survey of Youth - 1997

Note: \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$

Table 2. Standardized regression coefficients for the Poverty subgroup young adult and family religion on young adult risky behaviors

	<b>Illegal Substance Use between 20 and 23</b>		<b>Binge Drinking between 20 and 23</b>		<b>Heavy Smoking between 20 and 23</b>							
	<b>Not in Poverty</b>		<b>Not in Poverty</b>		<b>Not in Poverty</b>							
	<b>β</b>	<b>sig</b>	<b>β</b>	<b>sig</b>	<b>β</b>	<b>sig</b>						
<b><i>Young adult religion and mental health</i></b>												
Religious beliefs in 2004	-0.19	***	-0.06		-0.20	***	-0.12	*	0.01		0.01	
Religious attendance btwn ages 18 and 20	-0.07	***	-0.09	**	-0.09	***	-0.08	**	-0.08	***	-0.07	**
Mental health in 2005	-0.13	***	-0.15	***	-0.02		-0.10	***	-0.08	***	-0.06	
<b><i>Family religion</i></b>												
Family religious activities btwn ages 14 and 17	-0.01		-0.05		-0.08	**	0.07		-0.02		-0.09	*
Parent religious beliefs 1997	0.01		-0.03		-0.06	*	0.01		-0.04		0.03	
Parent religious attendance 1997	0.02		0.01		0.01		-0.05		-0.05		-0.08	**

Table 2 (cont). Standardized regression coefficients for the Poverty subgroup young adult and family religion on young adult risky behaviors

	Unsafe Sex between 20 and 23				Delinquent behaviors between 20 and 23			
	Not in Poverty		Poverty		Not in Poverty		Poverty	
	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig
<b><i>Young adult religion and mental health</i></b>								
Religious beliefs in 2004	-0.09	*	-0.01		-0.05		0.04	
Religious attendance btwn ages 18 and 20	-0.04		-0.14	*	-0.01		-0.06	
Mental health in 2005	-0.03		-0.09	*	-0.09	***	-0.13	***
<b><i>Family religion</i></b>								
Family religious activities btwn ages 14 and 17	-0.02		-0.03		-0.08	*	-0.06	
Parent religious beliefs 1997	-0.01		0.02		-0.02		-0.03	
Parent religious attendance 1997	0.04	**	-0.01		0.05	*	0.01	

Source: National Longitudinal Survey of Youth - 1997

Note: \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$

Table 3. Standardized regression coefficients for the Gender subgroup young adult and family religion on young adult risky behaviors

	<b>Illegal Substance Use between 20 and 23</b>		<b>Binge Drinking between 20 and 23</b>				<b>Heavy Smoking between 20 and 23</b>					
	<b>Male</b>		<b>Female</b>		<b>Male</b>		<b>Female</b>		<b>Male</b>		<b>Female</b>	
	<b>β</b>	<b>sig</b>	<b>β</b>	<b>sig</b>	<b>β</b>	<b>sig</b>	<b>β</b>	<b>sig</b>	<b>β</b>	<b>sig</b>	<b>β</b>	<b>sig</b>
<b><i>Young adult religion and mental health</i></b>												
Religious beliefs in 2004	-0.17	***	-0.15	***	-0.20	***	-0.17	***	0.01		0.01	
Religious attendance btwn ages 18 and 20	-0.08	***	-0.08	***	-0.10	***	-0.08	**	-0.08	**	-0.09	***
Mental health in 2005	-0.16	***	-0.11	***	-0.04		-0.06	*	-0.07	**	-0.08	**
<b><i>Family religion</i></b>												
Family religious activities btwn ages 14 and 17	0.01		-0.04		-0.10	**	0.05		-0.01		-0.07	*
Parent religious beliefs 1997	0.01		-0.03		-0.04		-0.02		-0.05		0.02	
Parent religious attendance 1997	0.02		0.01		0.01		-0.02		-0.05		-0.09	**

Table 3 (cont). Standardized regression coefficients for the Gender subgroup young adult and family religion on young adult risky behaviors

	Unsafe Sex between 20 and 23				Delinquent behaviors between 20 and 23			
	Male		Female		Male		Female	
	$\beta$	sig	$\beta$	sig	$\beta$	sig	$\beta$	sig
<b><i>Young adult religion and mental health</i></b>								
Religious beliefs in 2004	-0.10	*	-0.03		-0.03		-0.01	
Religious attendance btwn ages 18 and 20	-0.03		-0.03		-0.05		-0.01	
Mental health in 2005	-0.03		-0.08	**	-0.10	***	-0.12	***
<b><i>Family religion</i></b>								
Family religious activities btwn ages 14 and 17	-0.01		-0.03		-0.08	*	-0.05	
Parent religious beliefs 1997	-0.02		0.01		-0.04		-0.02	
Parent religious attendance 1997	0.02		0.08	*	-0.03	*	0.01	

Source: National Longitudinal Survey of Youth - 1997

Note: \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$

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