

THE ASSOCIATIONS AMONG RELIGIOSITY, PARENTING, AND SEXUAL BEHAVIOR
IN AFRICAN AMERICAN YOUTH FROM SINGLE-MOTHER FAMILIES: A
MODERATED MEDIATION MODEL

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ABSTRACT

Shiahna M. Dye: The Associations among Religiosity, Parenting, and Sexual Behavior in African American Youth from Single-Mother Families: A Moderated Mediation Model
(Under the direction of Deborah Jones)

African American youth, particularly those from single mother homes, are at an increased risk for the negative health consequences associated with risky sexual behavior (CDC, 2010; Zimmer-Gembeck & Helfand, 2008); however, despite elevated risk, many African American adolescents from single mother homes display positive outcomes (e.g., fewer psychosocial difficulties, fewer problem behaviors; Brody & Flor, 1998; Kim and Brody, 2005). Using an ecological resiliency perspective (Murry, Bynum, Brody, Willert, & Stephens, 2000) and a sample of 193 African American single mother families, the current study examined protective factors (e.g., maternal religiosity, adolescent religiosity, & parenting behaviors) associated with decreased adolescent engagement in risky sexual behaviors. Findings indicated that maternal religiosity was not directly associated with adolescent risky sexual behavior. However, maternal religiosity was indirectly related to adolescent risky sexual behavior through adolescent religiosity. This indirect effect was moderated by maternal monitoring and control for adolescent recent risky sexual behavior. Lastly, maternal religiosity was not indirectly related to adolescent risky sexual behavior through parenting. The moderating effects of adolescent gender and age were explored for all analyses. Findings of this study help clarify the mechanisms that link religiosity and parenting to adolescent risky sexual behavior, particularly

among African American adolescents from single-mother households. Implications of this study include identifying strategies for religion and parent -based interventions that can be tailored based on adolescent gender and age and utilized to protect at-risk African American adolescents from engaging in risky sexual behaviors.

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CHAPTER 1: LITERATURE REVIEW

Overview of the Study

Understanding adolescent sexual activity is important because of its associated risk with negative consequences such as sexually transmitted diseases (STDs), human immunodeficiency virus (HIV), and pregnancy that could negatively impact adolescent health (Center for Disease Control, 2008). Adolescents who engage in risky sexual behaviors (e.g., early sexual initiation, high number of sexual partners, and inconsistent condom use) have an increased risk for such negative sexual health outcomes. African-American adolescents are disproportionately at risk for negative sexual health outcomes due to their increased participation in risky sexual behaviors (Zimmer-Gembeck & Helfand, 2008). Therefore, both in general and particularly for African-American adolescents it has become increasingly important to identify factors that may promote safer sexual behaviors in order to decrease the likelihood that these negative health outcomes will occur. Particularly for adolescents, safer sexual behaviors include delayed sexual initiation, a reduction in the number of sexual partners and consistent condom use.

Past research has investigated numerous factors related to adolescent sexual behavior outcomes including family (e.g., parenting behaviors) and cultural (e.g., religiosity) factors (see Zimmer-Gembeck & Helfand, 2008 for a review). Although the links between these contributing factors on adolescent sexual behavior have been well established, less attention has been devoted to the interrelationship of these variables and their multivariate role in shaping adolescent sexual behavior in general and among African-American adolescents in particular. For example, research suggests that parental religiosity both directly and indirectly (through its

association with adolescent religiosity) shapes adolescent sexual behavior, particularly among Caucasian adolescents. However, much less is known about how parenting behaviors moderate this mediated relationship and how these variables operate in African-American adolescents. Understanding the interplay of these variables in this type of model advances the literature by explaining not only what parents do that influences their children's behavior, but also highlighting the salience of *how* they do it. This study seeks to extend the literature by exploring the possible avenues (e.g., maternal religiosity, parenting behaviors) whereby mothers shape their adolescents' sexual behavior. Specifically, this study seeks to examine how mothers can shape the likelihood that their adolescent will engage in risky sexual behavior by transmitting their religious values to their adolescent and engaging in positive parenting practices such as monitoring their adolescent and developing a warm and supportive parent-child relationship.

Examining the role of parenting in this manner is particularly relevant for African-American adolescents from single-mother families because they tend to be at an increased risk for a variety of problem behaviors, including risky sexual behavior (Mulatu, Leonard, Godette, & Fulmore, 2008; Coley, Votruba-Drzal, & Schindler, 2009; Smith, Buzi, & Weinman, 2002). As a result, it is critical to identify how single mothers can shape their adolescents' behaviors because parenting resources are likely to be more limited in this type of family structure (McLoyd, 1990; Murry, Bynum, Brody, Willert, & Stephens, 2001). Therefore, this study aims to examine a theoretically-driven model of the mediated link between maternal religiosity and adolescent sexual behavior, as well as the moderating role of parenting and adolescent gender among African-American adolescents from single-mother households.

Ecological Risk/Protection Framework

Resilience refers to the process that allows an individual to avoid the negative trajectories associated with risk exposure and demonstrate adaptive functioning (Fergus & Zimmerman, 2005; Luther, Cicchetti, & Becker, 2000). Resilience can develop as a result of personal qualities of the individual, aspects of their families, or characteristics of their wider social environments (Masten & Garmezy, 1985; Werner & Smith, 1982, 1992). Resilience manifests either when at-risk individuals demonstrate better-than-expected outcomes or they maintain positive adaptation despite the occurrence of stressful experiences (Masten, 1994; Masten, Best, & Garmezy, 1990). Based on the resilience literature, Murry, Bynum, Brody, Willert, and Stephens (2000) proposed a culturally relevant model of risk and resilience. They suggested that African-American adolescent development, particularly for those raised in single-parent families, may be best examined within a risk/protection framework that integrates components of ecological theory and resiliency perspectives. Their model clarifies the links between risk and protective processes at the individual, family, and community levels and can be used to explain the circumstances and individual characteristics that foster positive outcomes despite the risks encountered by African-American adolescents from single-parent families.

One risk factor that has consistently been associated with risky sexual behavior, particularly for African-American adolescents, is being raised in a single-parent household (Broman, 2007; Murry, 1994; Zimmer-Gembeck & Helfand, 2008). Statistics demonstrate that approximately half (51%) of African-American children are being raised in a single-mother household (US Census, 2008). The disadvantages associated with single-mother families (i.e., poverty, limited resources, and low educational attainment) are linked with more compromised parenting behaviors (McLoyd, 1990) and, in turn, increased psychosocial adjustment problems

for youth (see Murry et al., 2001 for a review). However, despite these risks, there are African-American adolescents raised in single family homes who are able to avoid the associated negative outcomes.

Strengths found within the adolescent's environment enable some to overcome the negative effects of risk exposure. Murry et al. (2000) labeled these strengths protective factors and defined them as, "the specific behaviors and circumstances that decrease the likelihood of negative outcomes; they include individual and family resources, skills, and abilities (p. 137)." Protective factors may exert direct effects on adolescent outcomes or they may act as moderators, altering but not eliminating the relations between risks and outcomes. Protective factors that have been identified specifically with African-American adolescent development include religiosity and positive parenting. Brody, Stoneman, and Flor (1996) found that among African-American two-parent families, parental religiosity promoted supportive family relationships. Subsequently, it has been posited that these positive family relationships, encouraged by religiosity, decrease the likelihood that youth will engage in deviant behavior, and increase the likelihood that adolescents will engage in socially sanctioned activities (Hirschi, 1969). It follows then that religiosity should also serve as a protective factor among African-American adolescents from single-family homes. Some single mothers report that their religion helps foster family unity (McAdoo, 1995) and therefore is considered to provide protection against adolescent engagement in risky behaviors.

Additionally, several studies of single parent families have demonstrated that positive parenting practices are associated with positive youth development (Jones, Forehand, Brody, & Armistead, 2002; Jones, Zalot, Foster, Sterrett, & Chester, 2007; Kim & Brody, 2005), which includes reduced vulnerability for risky behavior (Mason, Cauce, Gonzales, & Hiraga, 1996).

Thus, the family context is a critical area of focus in understanding resiliency among African American adolescents from single mother homes. This study seeks to replicate prior findings by identifying protective factors or combination thereof (i.e., parenting and/or religiosity) among African American adolescents from single mother households. This study extends prior work by examining theoretically-driven models that assess whether these factors are protective against adolescent engagement in risky sexual behaviors.

Sexual Behavior among Adolescents

The most recent survey of adolescent sexual behavior indicated that 46% of youth (grades 9-12) in the United States are sexually active (CDC, 2010). Among sexually active youth, roughly 6% initiated sexual intercourse before the age of 13, 13.8% had sexual intercourse with four or more partners, and 39% of currently sexually active youth had not used a condom during their last sexual intercourse (CDC, 2010). These rates are even higher among African-American adolescents compared to their Latino and White counterparts. For example, 65.2% of African-American adolescents are sexually active compared with 49.1% and 42% of Latino and White adolescents, respectively. It is important to note that these rates are considerably higher among African-American males compared to males and females of other races (Zimmer-Gembeck & Helfand, 2008). Similarly, in their review of the literature, Zimmer-Gembeck and Helfand (2008) found that being an African-American male adolescent was associated with being nearly three times more likely to have had sexual intercourse when compared to Caucasian adolescents. Although African-American adolescents report higher levels of sexual activity than their peers, they report similar levels of condom use. More specifically, 62.4% of African-American adolescents reported using a condom during their last

sexual intercourse compared to 63.3% of Caucasian adolescents and 54.9% of Latino adolescents.

Sexual behaviors such as early sexual initiation, sex with multiple partners, and unprotected intercourse put adolescents at risk for a range of negative consequences such as sexually transmitted diseases (STDs) including the human immunodeficiency virus (HIV) and unplanned pregnancy (CDC, 2008). Estimates suggest that although young people aged 15-24 years old represent only 25% of the sexually experienced population, they make up nearly half of all new documented STD cases (CDC, 2010). Recent statistics reveal that some of the highest STD rates are among young people aged 15-19 and African-Americans are overrepresented among the infected in this age group. In 2009, girls in this age range had the highest rates of chlamydia and gonorrhea compared to any other age or boys (CDC, 2010). Gonorrhea rates were highest among African-Americans in this age range with African-American girls' and boys' rates being 16.7 and 38.3 times higher than their Caucasian peers (CDC, 2010). Regarding teen pregnancy, statistics from 2009 indicate that approximately 410,000 births occurred among teens aged 15--19 years. The birth rates for African-American girls (59.0 per 1,000 females) were more than twice those of Caucasian girls (25.6 per 1,000 females) (CDC, 2011).

Besides the more obvious physical consequences of adolescent sexual behavior, studies also indicate that adolescents with the earliest and most persistent pattern of sexual activity tend to have more behavioral and emotional problems (Caminis, Henrich, Ruchkin, Schwab-Stone, & Martin, 2007; Kosunen, Kaltiala-Heino, Rimpelä, & Laippala, 2003; Price & Hyde, 2009; Tubman, Windle, and Windle, 1996). Thus, this data demonstrates the salience of researchers exploring the factors that contribute to African-American adolescents' engagement in sexual activity that would inform strategies for prevention and intervention.

Adolescent Religiosity and Sexual Behavior

One such factor that has been shown to shape adolescents' engagement in sexual activity is adolescent religiosity. Numerous studies have demonstrated that higher levels of religiosity (measured in a variety of ways across studies) are associated with a decreased likelihood of having engaged in sexual intercourse (Burdette & Hill, 2009; Francis, 2007; Holder, Durant, Harris, Daniel, Obeidallah, & Goodman, 2000; Jones, Darroch, & Singh, 2005; Manlove, Logan, Moore, & Ikramullah, 2008; Nonnemaker, McNeely, & Blum, 2003; Rostosky, Wilcox, Wright, & Randall, 2004; Zaleski & Schiaffino, 2001). Longitudinal studies ranging from one year to seven year follow-ups have even demonstrated that more religious adolescents are less likely to initiate sexual intercourse until adulthood (Hardy & Rafaelli, 2003), and if they do initiate during adolescence, they are more likely to delay its debut until a later age (Bearman & Bruckner, 2001; Crockett, Bingham, Chopak & Vicary, 1996; Jessor & Jessor, 1975; Jessor, Costa, Jessor & Donovan, 1983). To further substantiate this link, in a review of 50 studies, Whitehead, Wilcox, Randall, and Wright (2001) investigated the association between adolescent religiosity and sexual activity. They found that religiosity was consistently linked with delayed sexual initiation. Despite these studies examining religiosity using a variety of measures (e.g., frequency of church attendance, religious importance, participation in youth religious activities, frequency of prayer, etc.) or a composite thereof, the message nonetheless remains consistent, the more religious an adolescent is, the less likely he or she is to engage in sexual activity and/or the more likely he or she is to delay sexual behavior to a later age.

In addition to examining adolescent religiosity's association with sexual initiation, researchers have also looked at its relation to other risky sexual behaviors including lack of contraception use and number of sexual partners. Studies investigating adolescent religiosity and

contraception use have found mixed results. Results tended to vary depending on how religiosity was measured and whether contraception use was examined currently or at the time of first intercourse. For example, neither frequency of church attendance (Jones, Darroch, & Singh, 2005) nor public (e.g., attendance at religious services or activities) or private religiosity (e.g., importance of religion and frequency of prayer; Nonnemaker, McNeely, & Blum, 2003) was associated with current contraception use. Conversely, intrinsic (e.g., genuine, devout faith) and extrinsic (e.g., belief is motivated by external factors) religiosity (Zaleski & Schiaffino, 2001) and personal conservatism (i.e., belief that scriptures are the word of God without mistakes and considering oneself a born-again Christian; Miller & Gur, 2002) were found to be associated with decreased condom use; however, Miller and Gur (2002) found personal devotion (i.e., frequency of prayer and importance of religion) and frequent religious attendance to be associated with an increased likelihood of contraception use during sex. Regarding contraception use at first sexual intercourse, higher levels of religiosity measured as frequency of church attendance (Jones, Darroch, & Singh, 2005) and public (but not private) religiosity (Nonnemaker, McNeely, & Blum, 2003) were associated with an increased likelihood of using contraception at sexual initiation.

Far fewer studies have examined the link between adolescent religiosity and number of sexual partners but nonetheless have found higher levels of religiosity (e.g., frequency of church attendance and personal devotion, respectively) to be associated with fewer numbers of sexual partners among adolescents (Davidson, Moore, & Ullstrup, 2004; Miller & Gur, 2002). In summary, religiosity appears to have a clearer association with sexual initiation, contraception use during sexual initiation, and number of sexual partners such that it has been found to be protective against these types of risky sexual behaviors. However, its link to current

contraception use remains uncertain and as some studies suggest, religiosity may even be a risk factor for current unsafe sexual behaviors.

Regarding the association between religiosity and sexual behavior among African-American adolescents, there is a relative lack of inclusion of ethnic minorities within the samples. Many of these studies include predominantly middle-class Caucasian adolescents who tend to be at less risk for the negative consequences associated with adolescent sexual behavior (Jessor & Jessor, 1975; Whitbeck, Yoder, Hoyt, & Conger, 1999; Zaleski & Schiaffino, 2001). Even for those studies that do include a representative number of African-American adolescents, results are not always examined across racial groups in order to determine differential effects of the variables of interest (Miller & Gur, 2002; Nonnemaker, McNeely, & Blum, 2003).

This remains the case in spite of work that suggests that minority adolescents are more religious than Caucasian adolescents (Rostosky et al., 2004; Smith, Denton, Faris, & Regnerus, 2002), yet are at a higher risk of early initiation of sexual intercourse and its associated consequences (CDC, 2008). Bearman and Bruckner (2001) found that although higher religiosity (i.e., frequency of prayer, church attendance, and importance of religion) decreased the risk of sexual initiation for Caucasian, Asian, and Latino adolescents, it did not do so for African-American adolescents. Similarly, in a national sample of African-American adolescents, Broman (2007) did not find religiosity (i.e., frequency of church attendance) to have an impact on adolescent sexual behavior (i.e., initiation of sexual intercourse and number of sexual partners). One notable exception, however, was a study conducted by Landor, Simons, Simons, Brody and Gibbons (2011) who found religion (i.e., church attendance and religious commitment) to be a protective factor against sexual behavior (i.e., initiation of sexual intercourse, number of sexual partners, and condom use) among African-American adolescents.

Therefore, there is a strong need in the literature to clarify religion's association with the sexual behavior of African-American adolescents as it appears to function differently.

One strategy that may assist in bringing more clarity to the relations between these variables within this particular population is reconsidering how adolescent religiosity is conceptualized and measured. Rostosky et al. (2004) noted how single-item measures of religiosity, particularly religious attendance, may be problematic when used as an indicator of adolescent religiosity because this variable may not be under the control of the adolescent and therefore could be a proxy for parental control. Whereas religious attendance is more likely to be determined by external forces (i.e., parents), internally motivated measures of religious commitment and involvement, which are still influenced by parents but less controlled by them, may better capture the mechanisms which motivate adolescents to act in ways that are consistent with their religious values (Pearce & Axinn, 1998).

Employing multidimensional measures of religiosity that also assess religious commitment and involvement as well as examining the role of parental religiosity may help to provide more clarity about adolescent religiosity's association with sexual behavior. Because the association between religiosity and adolescent sexual behavior remains unclear among African-American adolescents, this study seeks to bring further clarity to the association among these variables within this particular population by utilizing a multidimensional measure of religiosity and by examining the role of parental religiosity. As Landor et al. (2011) demonstrated, utilizing this type of methodological strategy may allow for the observation of the suggested protective effects of religion on adolescent sexual behavior within a sample of African-American adolescents.

The Mediating Role of Adolescent Religiosity

Overwhelmingly, research supports the notion that parental religiosity impacts adolescent religiosity. Myers (1996) found parents' religiosity to have the strongest influence on their children's religiosity. Research suggests that as parents modeled more religious behavior, their adolescents exhibited more religious behavior (e.g., attending church, reading the Bible, praying) and considered religion more important (Flor & Knapp, 2001). As such, parental church attendance has been found to be an important predictor of adolescent church attendance (Francis & Brown, 1991; Francis & Gibson, 1993; Regnerus, Smith & Smith, 2004). Similarly, Bader & Desmond (2006) found that parental importance of religion was associated with how important adolescents viewed religion. Studies also support the notion that maternal religiosity is particularly influential on adolescent religiosity (Bao, Whitbeck, Hoyt, & Conger, 1999; Francis & Brown, 1991; Hoge & Petrillo, 1978), especially for their daughters (Francis & Gibson, 1993).

These findings demonstrate that parental religiosity, particularly maternal religiosity, shapes adolescent religiosity, at least for Caucasian youth. Since research has also shown that adolescent religiosity is negatively related to engagement in risky sexual behavior, it is plausible to suggest that parental religiosity decreases adolescent risky sexual behavior by parents promoting their religious values and beliefs. In other words, parental religiosity shapes adolescent sexual behavior through its association with adolescent religiosity. This notion is supported by Landor et al.'s (2011) findings that indicated adolescent religiosity mediated the relation between parental religiosity and adolescent sexual behavior. In addition to this indirect association between parental religiosity and adolescent sexual behavior, studies demonstrate a direct association between higher levels of parental religiosity and decreased adolescent sexual

initiation (Manlove, Logan, Moore, & Ikramullah, 2008; Manlove, Terry-Humen, Ikramullah, & Moore, 2006).

While studies have established a direct association between parental religiosity and adolescent sexual behavior, as well as an indirect association via adolescent religiosity, mostly among Caucasian adolescents, it remains far less clear how these variables operate for African-American adolescents. Similar to the studies that examined adolescent religiosity, those examining parental religiosity's association with African-American adolescent s' sexual behaviors have yielded mixed results. Some suggest a negative association (Burdette & Hill, 2009; Landor et al., 2011), while others have found no association at all (Manlove et al., 2006). It is important to note that parental religiosity does not seem to exert the same protective effect over adolescent condom use or number of sexual partners (Manlove et al., 2008) and may even be associated with reduced condom use (Manlove et al., 2006), particularly among males (Manlove et al., 2008; see Landor et al., 2011 for an exception).

The findings from these studies indicate the need to further explore the contributing role of parental religiosity on adolescent sexual behavior, particularly among African-American adolescents. One strategy that may bring more clarity to this association is by examining the mediating role of adolescent religiosity. The aforementioned studies that investigated the association between parental religiosity and sexual behavior among African-American adolescents did not take into consideration whether parental religiosity was actually associated with adolescent religiosity. This is important as adolescents are more likely to behave in ways consistent with their parents' religiosity if they have internalized those values. Thus, to bring further understanding to how these associations operate among African-American adolescents, the current study will examine the role of maternal religiosity on adolescent sexual behavior

through its association with adolescent religiosity. While Landor et al.'s (2011) findings show promise for this suggested association, further examination of these variables is needed in order to determine if the stated associations would be maintained among adolescents from single-parent homes who have an increased likelihood of engaging in sexual intercourse. As such, it is also important to examine other possible influencing factors such as parenting practices because religious parents may also impact their adolescent's sexual behaviors through the ways in which they parent their adolescents.

The Moderating Role of Parenting Style

While research has demonstrated that parents' religious beliefs impact both adolescent religiosity and their sexual behavior, it may be just as important to understand how parenting style also contributes to this relationship. Quality of parenting may affect the likelihood that youth internalize the beliefs and values of their parents (Myers, 1996), which in turn shapes their behaviors. Understanding how parenting style operates in a broader context of religiosity may shed more light on the link between parental religiosity and adolescent sexual behavior. As such, it is posited that parental religiosity shapes adolescent sexual behavior via its association with adolescent religiosity, particularly for parents who engage in high quality parenting practices (See Figure 2).

In the broader parenting literature, parenting practices that promote more positive adolescent outcomes are typically categorized as an authoritative parenting style (Baumrind, 1968). In more recent empirical work with minority populations these parenting practices are labeled as positive parenting (Jones et al., 2002; Kim & Brody, 2005). The positive parenting literature has primarily focused on the protective effect of two domains of positive parenting, behavioral control (e.g., monitoring, discipline) and warmth/support (e.g., the relationship

quality between parents and their children). High levels in these two domains have been found to be associated with more positive youth outcomes (DeBaryshe, Patterson, & Capaldi, 1993). Particularly for African-American adolescents, studies show that firm control exercised within warm/supportive parent-child relationships predict positive outcomes and decrease the likelihood of engagement in risky behaviors (Klein & Forehand, 2000; Kotchick, Forehand, & Brody, 1997; Mason, Cauce, Gonzales, & Hiraga, 1996; McCabe, Clark, & Barnett, 1999; Taylor, 2000). Labeled as “no nonsense” parenting, Brody, Flor, and Gibson (1999) stated this type of parenting features higher levels of warmth than are typically associated with authoritarian parenting and higher levels of monitoring and control than are typically characteristic of authoritative parenting. This style of parenting is adapted by African American parents to meet the demands of the environment around them in which they are aware that disobedience can have grave consequences for their children. The impact of these two domains of parenting, warmth/support and control, will be discussed below in relation to religiosity.

Studies have already linked parental religiosity to an authoritative parenting style (i.e., higher levels of warmth/support and monitoring; Gunnoe, Hetherington, & Reiss, 1999; Snider, Clements, & Vazsonyi, 2004), but few have examined whether and/or how this parenting style impacts a parent’s ability to pass on their religious beliefs and values to their child. Hardy, White, Zhang, and Ruchty (2011) examined parenting style as a moderator of the relation between parental and child religiosity and found that aspects of parenting consistent with an authoritative parenting style facilitated the transmission of religious beliefs and practices from parent to child. Specifically, the link between parental religiosity and adolescent religiosity was stronger in families with higher warmth, structure, and autonomy support. They concluded that this particular style of parenting related to the extent in which parents were able to pass on their

religious beliefs and values to their children, regardless of the level of religiousness. Myers (1996) similarly found that an authoritative style of parenting moderated this association such that moderate levels of control in combination with high levels of support contributed to the transmission of religiosity from parent to child (i.e., higher levels of child religiosity). In sum, a child is more likely to share their parent's religious beliefs and values when their parent is supportive and provides adequate levels of structure and control, regardless of the parent's level of religiosity.

The literature suggests that parental religiosity shapes adolescent sexual behavior through its association with adolescent religiosity, and that this association is particularly robust among families in which the parent practices higher levels of support and control. It is important to note that these findings support this relationship among predominantly Caucasian samples from varying family structures. Therefore, there is a need to determine whether these same associations extend to African-American adolescents from single-parent families who are more likely to engage in risky sexual behaviors. As such, the ways in which single-mothers can protect their adolescents through their religious values and beliefs can be identified.

The Moderating Role of Adolescent Gender

Two studies have examined the moderating role of gender in the association between parental religiosity and adolescent sexual behavior. Landor et al. (2011) found that parental religiosity had an indirect effect on risky sexual behavior through adolescent religiosity for both males and females. However, parental religiosity was found to have an indirect effect on risky sexual behavior through authoritative parenting only for females. Further analyses found that this association may be likely explained by the higher levels of parental monitoring for daughters

versus sons. Similarly, Manlove et al. (2008) found this relation to be mediated by mother-adolescent relationship quality (an aspect of authoritative parenting) for daughters only.

When examining the moderating role of gender on the relation between religiosity and adolescent sexual behavior, the research would suggest a slightly different model in that the mediator in this association would be parenting as opposed to adolescent religiosity (see Figures 3 and 4). What this indicates is that parents' religiosity shapes adolescent sexual behavior differently for girls versus boys through its association with parenting style and not through adolescent's religiosity. In other words, parents' religiosity shapes adolescent girls' sexual behavior through its association with their personal religiosity but also when provided within a context of authoritative parenting. For adolescent boys, parents' religiosity shapes their sexual behavior only through its association with their personal religiosity.

The current study seeks to extend these findings to African-American adolescents from single-mother homes in particular in which certain aspects of parenting (e.g., monitoring & the development of supportive parent-adolescent relationships) may be compromised due to limited resources and other stressors related to single motherhood. Consistent with the risk/protection framework, examining these associations within this particular context would shed light on the processes that assist parents in preventing their adolescent's engagement in risky behaviors despite the challenges they encounter. These findings would have implications for interventions focused on this particular at-risk population as well as whether these interventions need to be tailored based on the gender of the adolescent.

The Moderating Role of Adolescent Age

Age is thought to moderate the mediated relationship between parental religiosity and adolescent sexual behavior through parenting. Although there are no known studies that have

examined these associations directly, support for how these relations operate follow. Potvin and Sloane (1985) suggested that religious parents who practiced high levels of control were more effective at influencing the values (which in turn shapes the behaviors) of younger versus older adolescents. Further, studies suggested that as adolescents became older parental monitoring declined (Crockett & Peterson, 1993), but that this lowered level of monitoring was not associated with higher levels of problem behaviors for older adolescents (Jang & Krohn, 1995). Accordingly, it is posited that age would moderate the mediated relationship between parental religiosity and adolescent sexual behavior through parenting (see Figure 5) such that the association would be more robust for younger adolescents than older adolescents. Younger adolescents are more dependent on their family for guidance and direction and therefore are likely to be more receptive to higher levels of control. In other words, parental religiosity is more likely to be protective against adolescent engagement in sexual activity within a context of higher levels of parental monitoring and control for younger adolescents only. Thus, the current study will directly examine these relations and extend the literature by taking into account the contributing role of family structure and assessing sexual behavior as an outcome.

Proposed Study and Hypotheses

The current study aims to expand the understanding of the associations among religion, parenting, and adolescent sexual behavior within a more culturally relevant framework that shed light on the processes that help to protect at risk African-American adolescents from single-mother families from engaging in risky sexual behaviors. It seeks to replicate the findings that demonstrate a direct association between adolescent religion and sexual behavior while attempting to clarify this relation among African-American adolescents. Additionally, this study will examine the intervening roles of adolescent religiosity and parenting behaviors as well as

whether parenting and adolescent gender and age moderate the proposed indirect effects. The current literature will be extended by investigating these variables among a sample of African-American adolescents from single-mother homes who tend to have higher levels of religiosity, be at higher risk for engaging in risky sexual behaviors, and who are raised by parents who may have more limited resources which makes a strong case for further examination and clarification of the associations among these variables within this particular sample. Limitations in prior research will also be addressed by utilizing comprehensive, multidimensional measures of religiosity, parenting, and sexual behavior.

Based on previous theoretical and empirical work, the current study proposes six hypotheses. First, it is predicted that maternal religiosity will be negatively associated with sexual behavior. Higher levels of maternal religiosity are expected to be related to a decreased likelihood of sexual initiation, increased condom use, and fewer sexual partners. Although research on religion and sexual behavior among African-American adolescents have yielded mixed results (Bearman and Bruckner, 2001; Broman, 2007; Miller & Gur, 2002; Nonnemaker, McNeely, & Blum, 2003), more recent studies (see Landor et al., 2011) that have specifically isolated the mechanisms whereby parental religiosity protects against adolescent risky sexual behavior, have provided support for an association in this proposed direction. In turn, it is predicted that richer conceptualization of adolescent religiosity will yield protective associations in this sample of African American youth from single mother homes as well. In addition, it is predicted that adolescent religiosity will intervene in the relation between maternal religiosity and adolescent sexual behavior. High levels of parental religiosity have been shown to be associated with high levels of adolescent religiosity (Bader & Desmond, 2006; Flor & Knapp, 2001; Francis & Brown, 1991; Francis & Gibson, 1993; Myers, 1996; Regnerus, Smith & Smith,

2004). Building upon the aforementioned hypothesis, it is predicted that one mechanism by which maternal religiosity will be associated with lower levels of sexual behavior is via its more proximal association with adolescent religiosity (See Figure 1 for indirect effects model).

Third, research has shown that a child is more likely to share their parent's religious beliefs and values when their parent is supportive and provides structure and control (Hardy, White, Zhang, and Ruchty, 2011; Myers, 1996). Accordingly, it is hypothesized that the link between parental religiosity and the proposed intervening variable, adolescent religiosity will be most robust for youth whose parents demonstrate higher levels of both warmth/support and monitoring/control (See Figure 2 for conditional indirect effect model).

Fourth, it is predicted that parenting style will indirectly effect the relation between parental religiosity and adolescent sexual behavior. Studies have shown that religious parents are likely to utilize an authoritative parenting style (Gunnore, Hetherington, & Reiss, 1999; Snider, Clements, & Vazsonyi, 2004). An authoritative parenting style, in turn, is associated with decreased likelihood of engaging in risky sexual behaviors (Li, Stanton, & Feigelman, 2000; Longmore, Manning, & Giordano, 2001; Whitbeck et al., 1999). Based on this research, it is predicted that another mechanism by which maternal religiosity will be associated with lower levels of sexual behavior is via its more proximal association with parenting style (Landor et al., 2011) (See Figure 3 for mediation model). Research also indicates that parents' religiosity shapes adolescent sexual behavior differently for girls versus boys through its association with parenting style (Landor et al., 2011; Manlove et al., 2008). Therefore, it is expected that the indirect effect of maternal religiosity on adolescent sexual behavior through parenting will be conditional on adolescent gender such that this relation will be more robust for girls as compared to boys (See Figure 4 for conditional indirect effect model).

Lastly, consistent with Hypothesis 5, it is predicted that the link between parenting style, the proposed intervening variable in this model, and adolescent sexual behavior will be conditional on adolescent age such that this relation will be stronger for younger adolescents versus older adolescents (See Figure 5 for conditional indirect effect model). Although this model has not been directly examined in the literature, the relations among these variables in prior literature lend support to the proposed direction of their associations.

CHAPTER 2: METHOD

Overview

The current analyses were conducted using a subset of data from the African American Families and Children Together (AAFACT) Project, which aims to examine risk and protective processes among youth from single mother homes. African American single mother-headed families with an 11- to 16-year-old adolescent were recruited from counties across central North Carolina. Recruitment was conducted through community agencies (e.g., health departments, YMCAs, churches), public events (e.g., health fairs), local advertisements (e.g., university-wide informational emails, bus displays, brochures), and word-of-mouth (e.g., participants telling other families about the project).

Participants

The 193 African American mother-child dyads who participated in the AAFACT investigation are the focus of the current study. Adolescents were 13 years old on average ($SD = 1.59$; range = 11-16 years), with slightly more than half of the sample being females (55%). On average, mothers were 38 years old ($SD = 6.67$; range = 26-64 years), and most (86%) had completed at least some college or vocational education. The majority (82.4%) of mothers were employed, and annual household incomes averaged \$29,734 ($SD = \$17,456$). Of note, this sample represents a more socioeconomically diverse sample of AA single mother families than is typical in prior research.

Procedure

Assessments were conducted either at a conveniently-located community site or in the family's place of residence, depending on the needs of each family. Child care was provided on an as-needed basis. During each interview, informed consent was obtained from the mother for her and the adolescent's participation, and the adolescent gave assent for participation. In order to maximize confidentiality and reduce the potential for biased responses, data from each family member was collected separately on laptop computers using Audio Computer-Assisted Self-Interviewing (ACASI) software, and participants' answers were linked to an assigned number rather than to any form of identity. The mother and adolescent self-report questionnaires assessed a variety of psychosocial variables, including the independent, dependent, and moderator variables for the current study. The interviews took approximately 60 to 90 minutes for mother-child dyads to complete, and they were compensated \$25 for their participation.

Measures

Demographic Information. Mothers and children completed a demographic measure, which provided information about themselves (e.g., age, education), and their families (e.g., physical address, family income).

Maternal Warmth. Self-reports from both adolescents and mothers on the short form of the Interaction Behavior Questionnaire (IBQ; Prinz, Foster, Kent, & O'Leary, 1979) were used to assess warmth in the mother-child relationship. For the current study, only adolescents' reports were utilized in analyses. This form consists of the 20 items that have the highest phi coefficients and the highest item-to-total correlations with the 75 items in the original IBQ. The short form correlates .96 with the longer version. Sample items, which may be endorsed as *True* or *False*, include, "You enjoy spending time with your mother," and "You think your mother and

you get along very well” (see Appendix A for complete list of items). Ten items were reverse coded so that higher scores indicated greater warmth and support in the mother-child relationship. Scores ranged from 0 to 20. Prinz and colleagues (1979) and Robin and Weiss (1980) have reported adequate internal consistency and discriminant validity. Data from the current study yielded an alpha of .90 for adolescents.

Maternal Monitoring. Maternal monitoring of the adolescent was assessed by self-reports by the mothers and by reports from the adolescent using Stattin and Kerr’s (2000) measure. Only adolescents’ reports were used. This 9-item measure assesses the mother’s knowledge of the adolescent’s whereabouts, activities, and relationships (Dishion & McMahon, 1998). The items are rated on a 5-point scale: 0 (Not at All), 1 (Rarely), 2 (Some of the time), 3 (Most of the time), and 4 (Always). Sample items ask how much mothers know about “Who this child has as friends during his or her free time,” “When this child has an exam or assignment due at school,” and “What this child does during his or her free time” (See Appendix B for a complete list of items). These measures have demonstrated acceptable reliability data in prior research as well as good test-retest correlations (Kerr & Stattin, 2000; Stattin & Kerr, 2000). One item was reverse coded so that higher scores indicated more maternal monitoring. Scores ranged from 4 to 36. For the current sample, the coefficient alpha is .85 for the adolescent-report version.

Maternal Control. Maternal control was measured using the Parental Knowledge Scale (PKS; Stattin & Kerr, 2000). Five items are rated on a 5-point scale: 0 (Not at All), 1 (Rarely), 2 (Some of the time), 3 (Most of the time), and 4 (Always). Sample items included, “Do you need to have permission from your mother to stay out late on a weekday evening?” and “Does your mother require that you tell her where you are at night, whom you are with, and what you do

together?” (See Appendix C for complete list of items) Scores ranged from 0 to 20 with higher scores indicating higher levels of maternal control. Data from the current study yielded an alpha of .82 for adolescents.

Religiosity. Level of religion for both adolescent and mother was measured using an 11-item scale, which has demonstrated reliability and validity in past research (Ball, Armistead & Austin, 2003). The second and third items, which were not a focus of the current study and were therefore not included, asked participants to self-report their religious affiliation. The remaining 9 items, which were the focus of the current study, assessed both the degree of religious beliefs (i.e., How important do you think it is for people to attend religious services?) and frequency of religious behaviors (i.e., How often do you pray?) using a Likert-type scale (See Appendix D for complete list of items).

These 9 items were factor analyzed using principal component analysis (PCA) with Varimax (orthogonal) rotation. Prior to performing PCA the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .83, exceeding the recommended value of .6 (Kaiser, 1970, 1974) and the Bartlett’s Test of Sphericity (Bartlett, 1954) reached statistical significance, supporting the factorability of the correlation matrix. Principal component analysis revealed the presence of one component with an eigenvalue exceeding 1, explaining 47.22% of the variance. An inspection of the screeplot revealed a clear break after the first component. Using Catell’s (1966) scree test, it was decided to retain one component for further investigation. During this analysis, a total of two items were eliminated because they did not contribute to the factor structure or failed to meet a minimum criteria of having a primary factor loading of .3 or above (See Table 1). These items included, “How

religious is your family?” and “Do you believe in God?” The remaining 7 items were retained and summed, with higher scores reflecting greater religiosity. Internal consistency for this scale in past research has yielded an alpha of 0.71 (Ball, Armistead & Austin, 2003). Data from the current study yielded an alpha of .80 for mothers and .79 for adolescents.

Adolescent Sexual Behavior. Sexual behavior among adolescents in the present study was measured using items drawn from the Youth Risk Behavior Surveillance System Questionnaire, a health survey first implemented by the CDC in 1989 to monitor priority health-risk behaviors among youth and young adults (Kann, 2001; Kolbe, Kann, & Collins, 1993). The 18 questions administered to the youth in our sample primarily address risk behaviors in three categories: cigarette smoking (Questions 1-6), alcohol use (Questions 7-11), and sexual activity (Questions 12-18). The survey included questions that indicate their participation in sexual behavior by choosing from 1) a number of times they’ve participated in their lifetime and within the past 30 days (*1 = 1 or 2 times to 6 = 100 times or more*), 2) number of sexual partners (*1 = 1 partner, 6 = 6 or more partners*), and 3) frequency of condom use (*1 = rarely, about 25% of the time, 4 = always*). Adolescents also reported on initial age of involvement (i.e., “How old were you when you had sexual intercourse, including vaginal, anal, or oral, for the first time?”). See Appendix E for a complete list of items.

A risky sexual behavior scale was created, utilizing prior work as an example (Yi, Poudel, Yasuoka, Palmer, Yi, & Jimba, 2010), based on the following four items: (1) whether the participant had engaged in sexual intercourse and age of initiation, (2) number of times they had engaged in intercourse, (3) number of sexual partners, and (4) frequency of condom use. Recent (within the past 30 days) and lifetime sexual risk were both assessed. Regarding age at first experience of sexual intercourse, the responses were coded as follows: 0 if the participants never

had sex, 1 if the age reported was 15 or older, 2 if the age reported was between 13-14, and 3 if the age was 12 or younger. For number of times participants engaged in sexual intercourse, the responses were recoded 0 if the participants never had sex, 1 if they had sex 1 or 2 times, 2 if they had sex 3-9 times, and 3 if they had sex 10 or more times. Responses for number of sex partners were recoded 0 if the participants never had sex, 1 if the number reported was 1, 2 if the number reported was 2, and 3 if the number reported was 3 or more. Responses for frequency of condom use were recoded 0 if the participants never had sex, 1 if they reported that they always used a condom, 2 if they reported they used a condom most of the time (about 75% of the time), and 3 if they reported they used a condom either sometimes, rarely, or never (less than 50% of the time). The total score of these four measures was then calculated, with higher scores indicating higher levels of risky sexual behavior. The Youth Risk Behavior Survey has been widely used and the items used in our study have demonstrated acceptable reliability in previous research (Brener, Kann, McManus, Kinchen, Sundberg, & Ross, 2002). Data from the current study yielded an alpha of .95 for adolescents. Approximately 30% of the sample reported engaging in sexual activity.

CHAPTER 3: RESULTS

Preliminary Analyses

Bivariate analyses were conducted to examine the association between demographic and risky sexual behavior variables. T-tests were conducted to examine possible gender differences (See Table 2). No significant gender differences were found in regard to lifetime ($t(134) = 1.78, n.s.$) or recent ($t(139) = 1.54, n.s.$) risky sexual behavior. Nevertheless, given the vast support for gender differences in the literature that indicated adolescent boys engage in more risky sexual behaviors than girls (Zimmer-Gembeck & Helfand, 2008), gender was included as a control variable in all subsequent analyses. Correlations between household income, maternal education, adolescents' age, and the risky sexual behavior outcome variables were also examined as previous studies have demonstrated that these variables are associated (Vesely, Wyatt, Oman, Apsy, Kegler, Rodine, Marshall, & McLeroy, 2004; Zimmer-Gembeck & Helfand, 2008). As demonstrated in Table 3, no significant associations were found with regard to household income or maternal education with either lifetime or recent risky sexual behavior. However, age was positively associated with lifetime risky sexual behaviors ($r = .47, p < .01$) and recent risky sexual behaviors ($r = .31, p < .01$). Therefore age was also included as a covariate in subsequent hypothesis testing.

Means, standard deviations, and percentages for major study variables are presented in Tables 4 and 5. Findings indicated that approximately 80% of the adolescents in this study reported themselves to be either religious or very religious. Seventy percent of adolescents reported that they had never had sex. When examined by adolescent gender, approximately 68%

of boys and 72% of girls had not yet initiated sex. Of those who had engaged in sexual intercourse, close to half (47%) had reportedly had sex 1 or 2 times in their lifetime, 49% had one sexual partner in their lifetime, and 63% reported always using a condom. A higher percentage of boys as compared to girls tended to engage in more risky sexual behaviors.

Initially, the analyses were performed separately for each risky sexual behavior (i.e., age of initiation, number of partners, and frequency of condom use) because while research has demonstrated that religiosity reduces the likelihood of sexual initiation, early sexual debut and number of sexual partners, it was less clear about its impact on condom use. However, the results indicated that the pattern of associations between the variables was the same (i.e., religiosity was negatively associated with each individual index, except for condom use which was positively associated with religiosity) for each of these outcomes indicating that religiosity was associated with less risky sexual behaviors. As a result, the aggregate measure of risky sexual behavior was utilized in the subsequent analyses.

Hypothesis 1 posited that maternal religiosity would be negatively associated with risky sexual behavior. Mother's religiosity was not correlated with adolescent lifetime risky sexual behavior ($r = .00, n.s.$) or recent risky sexual behavior ($r = .03, n.s.$) (Table 3). However, results did indicate that adolescent religiosity was negatively correlated with their lifetime risky sexual behavior ($r = -.37, p < .01$) and recent risky sexual behavior ($r = -.27, p < .01$).

Mediation Analyses

Simple indirect effects were tested using the guidelines set forth by Preacher, Rucker, and Hayes (2007), which include bias-corrected bootstrap confidence intervals to test the proposed indirect effects (i.e., intervening roles of adolescent religiosity and parenting), as well as to examine conditional indirect effects (i.e., whether the intervening role of adolescent religiosity

varied by parenting behaviors and whether the intervening role of parenting behaviors varied by adolescent gender and age). As detailed elsewhere, the requirements for indirect effects no longer require a main or direct effect of the independent variable on the dependent variable (see Hayes, 2009 for a review). Indirect effects are considered significant if the 95% confidence intervals for the indirect effect do not include 0 (Preacher & Hayes, 2004; Preacher et al., 2007). This method has been specifically designed to increase the power to detect significant effects in small, non-normally distributed samples (Mackinnon et al., 2004; Preacher & Hayes, 2004). For these analyses, both adolescent gender and age were included as covariates.

Hypothesis 2 posited that adolescent religiosity would indirectly effect the association between maternal religiosity and adolescent risky sexual behavior. By using the SPSS Macro provided by Preacher and Hayes (2004), the value of the indirect effect of adolescent religiosity was -.46 (Boot SE = .15) and was estimated to lie between -.81 and -.22 with 95% confidence, based on 5000 resamples (see Table 6). Because 0 was not in the 95% confidence interval, the findings suggested that the indirect effect through adolescent religiosity was significantly different from zero, supporting the presence of an indirect effect of adolescent religiosity in the association between maternal religiosity and adolescent lifetime risky sexual behavior. It is important to note that maternal religiosity was not found to be directly associated with adolescent lifetime risky sexual behavior (direct effect = .29, *n.s.*). As recommended by Preacher and Kelley (2011), the magnitude of the indirect effect relative to the maximum possible indirect effect (an effect size measure recommended for mediational analyses because it fulfills the desiderata for good effect size estimates given that it is standardized and bounded), k^2 , was calculated to be .15 with bootstrap 95% CI [.07, .23]. Utilizing Cohen's (1988) guidelines for interpreting effect sizes the mediation effect value of .15 lies within the medium range.

This procedure was repeated for adolescent recent risky sexual behavior. The value of the indirect effect of adolescent religiosity was $-.17$ (Boot SE = $.07$) and was estimated to lie between $-.35$ and $-.05$, based on 5000 resamples (see Table 6). This finding indicated the presence of an indirect effect of adolescent religiosity in the association between maternal religiosity and adolescent recent risky sexual behavior. Maternal religiosity was not found to be directly associated with adolescent lifetime risky sexual behavior (direct effect = $.17$, *n.s.*). The proportion of the maximum observed indirect effect that was observed was $k^2 = .10$ with bootstrap 95% CI $[.04, .19]$, which lies within the medium range.

Exploratory analyses

Although not proposed, it was decided to examine whether the indirect effect of maternal religiosity on adolescent lifetime and recent risky sexual behavior through adolescent religiosity, differed for boys versus girls and for younger versus older adolescents. This indirect effect may be moderated by adolescent age and gender because these two factors moderate both the effect of parental religiosity on adolescent religiosity as well as the effect of adolescent religiosity on adolescent risky sexual behavior (see Figures 6 and 7). A conditional indirect effects model was utilized with the SPSS Macro provided by Preacher and Hayes (2004). For age, the conditional indirect effects were examined at three levels of the moderator variable: the mean age (13.4), one standard deviation above the mean age (15.0), and one standard deviation below the mean age (11.8). The analysis testing gender as a moderator included adolescent age as a covariate, and the analysis examining adolescent age as a moderator included adolescent gender as a covariate.

The interaction between gender and maternal religiosity ($b = -.01$, *n.s.*) as well as the interaction between gender and adolescent religiosity ($b = .57$, *n.s.*) were not significant for

adolescent lifetime risky sexual behavior, indicating that the indirect effect of maternal religiosity on adolescent lifetime risky sexual behavior through adolescent religiosity is not moderated by adolescent gender (Table 7). Although not significant, there was a trend that this indirect effect was larger for boys (indirect effect = $-.59$) as compared to girls (indirect effect = $-.34$). This procedure was repeated for adolescent recent risky sexual behavior (see Table 7). Similarly, the interaction between gender and maternal religiosity ($b = .02, n.s.$) as well as the interaction between gender and adolescent religiosity ($b = .01, n.s.$) were not significant indicating that maternal religiosity's indirect effect on adolescent recent risky sexual behavior through adolescent religion is not moderated by adolescent gender.

When examining the moderating role of adolescent age, the interaction between adolescent age and maternal religiosity ($b = .09, n.s.$) was not significant for adolescent lifetime risky sexual behavior (Table 8). However, the interaction between adolescent age and adolescent religiosity was significant ($b = -.32, p < .05$). These findings indicate that the indirect effect of maternal religiosity on adolescent lifetime sexual behavior through adolescent religiosity is moderated by adolescent age at the path between adolescent religion and risky lifetime sexual behavior. The value of the indirect effect is significantly larger for adolescents 1 SD above the mean age ($-.18$) than for adolescents 1 SD below the mean age ($-.89$), demonstrating that the indirect effect of maternal religiosity on adolescent lifetime risky sexual behavior through adolescent religiosity is more robust for older adolescents.

This procedure was repeated for adolescent recent risky sexual behavior (see Table 8). The interaction between adolescent age and maternal religiosity ($b = .10, p < .05$) as well as the interaction between age and adolescent religiosity ($b = -.18, p < .05$) were significant for adolescent recent risky sexual behavior, indicating that the indirect effect of maternal religiosity

on adolescent recent risky sexual behavior through adolescent religiosity is moderated by adolescent age at both paths. Again, the value of the indirect effect is significantly larger for adolescents 1 SD above the mean age (-.39) than for adolescents 1 SD below the mean age (-.04), indicating that the indirect effect of maternal religiosity on adolescent recent risky sexual behavior through adolescent religiosity is more robust for older adolescents.

In sum, although there was no significant direct path between maternal religiosity and adolescent risky sexual behavior, there was a significant indirect path through adolescent religiosity which was more robust for lifetime adolescent risky sexual behavior (indirect effect = -.46) as compared to recent adolescent risky sexual behavior (indirect effect = -.17). In other words, higher levels of maternal religiosity were associated with higher levels of adolescent religiosity, which in turn decreased the likelihood of lifetime and recent adolescent risky sexual behavior. This pattern of results did not significantly differ for adolescent boys and girls. However, this indirect effect was moderated by adolescent age such that the indirect effect of maternal religiosity on adolescent lifetime and recent risky sexual behavior through adolescent religiosity was more robust for older versus younger adolescents.

Hypothesis 4 posited that parenting (e.g., maternal warmth, monitoring, and control) would intervene in the association between maternal religiosity and adolescent risky sexual behavior. For maternal warmth, the value of the indirect effect of maternal warmth was -.08 (Boot SE = .07) and was estimated to lie between -.29 and .00 with 95% confidence, based on 5000 resamples (see Table 6). Because 0 was included in the 95% confidence interval, the findings suggested that the indirect effect through maternal warmth was not significantly different from zero, and indicated no presence of an indirect effect of maternal warmth in the relation between maternal religiosity and adolescent lifetime risky sexual behavior. This

procedure was repeated for recent adolescent risky sexual behavior. The value of the indirect effect of maternal warmth was $-.02$ (Boot SE = $.02$) and was estimated to lie between $-.09$ and $.01$, based on 5000 resamples (see Table 6). This finding indicated no presence of an indirect effect of maternal warmth in the relation between maternal religiosity and adolescent recent risky sexual behavior.

Regarding maternal monitoring, the value of the indirect effect was $-.08$ (Boot SE = $.08$) and was estimated to lie between $-.27$ and $.05$ with 95% confidence, based on 5000 resamples for adolescent lifetime risky sexual behavior, and the value of its indirect effect on recent risky sexual behavior was $-.05$ (Boot SE = $.05$) and was estimated to lie between $-.15$ and $.03$. For maternal control, the value of the indirect effect was $-.03$ (Boot SE = $.04$) and was estimated to lie between $-.17$ and $.02$ with 95% confidence, based on 5000 resamples for adolescent lifetime risky sexual behavior, and the value of its indirect effect on recent risky sexual behavior was $-.05$ (Boot SE = $.04$) and was estimated to lie between $-.17$ and $.01$. These findings indicated no presence of an indirect effect of maternal warmth, monitoring, or control in the association between maternal religiosity and adolescent lifetime or recent risky sexual behavior.

Moderated Mediation Analyses

In order to determine whether parenting moderated the indirect effect of adolescent religiosity, a conditional effects model was utilized with the SPSS Macro provided by Preacher and Hayes (2004). The conditional indirect effects were examined at the mean and plus and minus one standard deviation from the mean values of the moderators (see Tables 9-11).

Hypothesis 3 posited that the link between maternal religiosity and adolescent religiosity would be more robust for adolescents whose parents demonstrated higher levels of warmth, monitoring, and control (i.e., parenting behaviors would moderate the indirect effect of maternal religiosity

on adolescent risky sexual behavior through adolescent religiosity). The interaction between maternal religiosity and warmth ($b = .01, n.s.$) was not significant, indicating that the indirect effect of maternal religiosity on adolescent lifetime risky sexual behavior through adolescent religiosity was not moderated by maternal warmth. The interaction between maternal religiosity and monitoring was not significant ($b = .02, n.s.$) indicating that the indirect effect was not moderated by maternal monitoring. However, it is important to note that this interaction approached significance and there was a trend that as levels of monitoring increased, so did the strength of the indirect effect. Lastly, the interaction between maternal religiosity and control was not significant ($b = .03, n.s.$) and thus maternal control also did not moderate the indirect effect of maternal religiosity on adolescent lifetime risky sexual behavior through adolescent religiosity. Although not significant, there was a trend that as levels of control increased so did the strength of the indirect effect. This procedure was repeated for adolescent recent risky sexual behavior. Maternal warmth was not a significant moderator ($b = .02, n.s.$). However, monitoring ($b = .03, p < .05$) and control ($b = .04, p < .05$) were significant moderators as the indirect effect of maternal religiosity on adolescent recent risky sexual behavior through adolescent religiosity was more robust when mothers engaged in higher levels of monitoring and control .

Exploratory analyses

Although not proposed, additional conditional indirect effects were run to determine if these results were moderated by adolescent gender and age (see Figures 8 and 9 and Tables 12-17). The conditional indirect effects of maternal warmth ($b = -.04, n.s.$), monitoring ($b = -.03, n.s.$), and control ($b = .02, n.s.$) did not differ for adolescent boys' and girls' lifetime risky sexual behavior. Regarding adolescent recent risky sexual behavior, the conditional indirect effects of maternal warmth ($b = -.05, n.s.$), monitoring ($b = -.03, n.s.$), and control ($b = .02, n.s.$) did not

differ for adolescent boys' and girls' recent risky sexual behavior. Thus, the conditional indirect effects of parenting behaviors were not moderated by adolescent gender for either lifetime or recent risky sexual behavior.

Adolescent age did not moderate the conditional indirect effects of maternal warmth ($b = -.00, n.s.$) or control ($b = -.00, n.s.$) on adolescent lifetime risky sexual behavior. Adolescent age did, however, moderate the conditional indirect effects of maternal monitoring on adolescent lifetime risky sexual behavior ($b = -.02, p < .05$). At the level of maternal monitoring one standard deviation below the mean, the conditional indirect effect was only significant for older adolescents. Conversely, at the level of maternal monitoring one standard deviation above the mean, the strength of the conditional indirect effect significantly decreased as adolescent age increased. This indicated that the conditional indirect effect of maternal monitoring is stronger for older adolescents at lower levels of monitoring, but higher levels of monitoring are more robust for younger adolescents. Similar patterns were found for adolescent recent risky sexual behavior. The conditional indirect effects of maternal warmth ($b = -.00, n.s.$) and control ($b = -.00, n.s.$) did not differ by adolescent age and therefore it was not a significant moderator. The conditional indirect effects of maternal monitoring on adolescent recent risky sexual behavior was moderated by adolescent age ($b = -.02, p < .05$). The same pattern of results was the same as with lifetime risky sexual behavior indicating that the conditional indirect effect of maternal monitoring is stronger for older adolescents at lower levels of monitoring, but higher levels of monitoring are more robust for younger adolescents.

Regarding Hypotheses 5 and 6, because the indirect effect of maternal religiosity on adolescent sexual behavior through parenting was not supported, the moderated indirect effect of age and gender were not tested.

CHAPTER 4: DISCUSSION

The current study examined the roles of religiosity and parenting behaviors on risky sexual behavior in 193 African American youth from single mother families, a group at increased risk for the negative health consequences associated with risky sexual behaviors. This study contributes to the literature that examines the association between religion and sexual behavior and attempts to clarify the mechanisms and processes that link maternal religiosity to adolescent risky sexual behavior. Additionally, these associations were examined within a culturally-relevant ecological risk-resilience perspective that considered both the risk and protective processes at the individual, family, and community levels that may prevent African-American adolescents from single-mother families from engaging in risky sexual behaviors.

First, it is important to note that a comparatively smaller percentage of this sample reported having engaged in sexual intercourse than would be expected given national statistics (Broman, 2007; Landor et al., 2011). There are a number of possible explanations for this finding. First, it is likely that the slightly younger average age of the current sample (roughly 50% of the sample were 13 and under) compared to prior work, which tends to include a representative sample of youth in grades 7-12 with an average age of 15.5, resulted in a decreased likelihood of sexual debut (Broman, 2007). Second, this particular sample had relatively high levels of religious involvement for both mothers and adolescents which is consistent with previous findings from other samples of African-Americans (e.g., Landor et al., 2011; Smith et al., 2002; Smith et al., 2003). However, it is important to note that the current sample live in the “Bible belt” which has been described as, “a region of the United States known to value religion and to be more

conservative, compared with most other parts of the country (Vazsonyi & Jenkins, 2010, p. 566).” Therefore, it is possible that their more conservative religious values may be more strongly influencing these particular adolescents’ decisions not to engage in sex or not to report it when they do as compared to other samples of African-American adolescents from other parts of the country. Third, this particular sample of African-American single mothers tended to report higher levels of education and income than those represented in national statistics. For example, the US Census (Fields, 2003) reported that 19% African-American single mothers had less than a high school education compared with only 5.7% of the current sample. Additionally, this particular sample of single mothers tended to report higher average incomes than those found in national samples. Although these mothers’ incomes were skewed toward the lower end, roughly 41% of the sample did not fall into the low-income range. Zimmer-Gembeck and Helfand’s review (2008) found that in general, studies tended to support that higher levels of maternal education and socioeconomic status were associated with a delaying in sexual initiation. In sum, it is possible that these characteristics of the sample or a combination thereof may account for the lowered incidence of risky sexual behaviors reported by this particular sample as compared to other studies or national data on sexual behavior among African-American adolescents (e.g., CDC, 2010).

Further, in contrast to past findings that show that boys tend to engage in more risky sexual behaviors (Broman, 2007; Zimmer-Gembeck & Helfand, 2008), the current study did not find engagement in risky sexual behaviors to differ by gender. Although not significant, the trend was consistent with previous findings with boys engaging in more risky sexual behaviors. This lack of findings may be due to small sample size and an overall lack of power needed to find

significant differences. Additionally, overall this sample tended to engage in lower rates of sexual behaviors and gender differences may have been more difficult to detect.

Contrary to what was predicted, maternal religiosity was not associated with adolescent risky sexual behavior. Findings from previous studies have been mixed regarding this association. Manlove et al. (2008) found parental religiosity to be directly and negatively associated with adolescent sexual behavior, however, they utilized a mixed race sample that also included adolescents from both two-parent and single-parent households. Because cross-comparisons were not conducted, it remained unclear how these results may have differed for African-American adolescents and/or those from single-parent families. Further, although Manlove et al. (2006) found parental religiosity to be related to delayed sexual initiation, this association was not present for African-American youth. Thus, the current findings provide support that this pattern of findings may not be applicable to African-American adolescents, particularly those from single-mother families. Alternatively, as Burdette and Hill (2009) suggested, it is likely that while mothers' religiosity may not be directly associated with their adolescent's engagement in risky sexual behavior, this association may be indirectly influenced by more proximal indicators such as adolescents' individual religiosity.

Accordingly, the current study did find maternal religiosity to be indirectly associated with adolescent risky sexual behavior through adolescent religiosity as was predicted, and the magnitude of this effect was in the medium range. While maternal religiosity did not directly influence adolescent risky sexual behavior, it did impact adolescent religiosity, which in turn decreased the likelihood that adolescents would engage in risky sexual behavior. This indirect effect was found to be stronger for lifetime versus recent risky sexual behavior. These results suggest that mothers may be more effective at protecting their adolescents from engaging in

risky sexual behaviors prior to their initiation of sex (lifetime), but once sexual debut has occurred (recent), their influence remains significant albeit weaker.

Additionally, this indirect association remained significant for adolescent boys and girls, similar to the findings of Landor et al. (2011), meaning that mothers' religiosity is a protective factor for both their sons and daughters. However, this indirect effect was found to be moderated by adolescent age, indicating that maternal religiosity seems to be more protective against adolescent lifetime and recent risky sexual behavior for older adolescents. This finding is somewhat unexpected as levels of religiosity tend to decline with increasing adolescent age and therefore may lose its protective effect (Smith et al., 2002). A possible explanation for this finding may be that older adolescents have begun to internalize the values promoted by their religion and therefore these internalized values have a stronger preventive effect against engaging in risky sexual behaviors. Again, this warrants further examination of the additional role of parenting behaviors as Potvin and Sloane (1985) suggested that parental control may be effective for the internalization of religious practices and the maintenance of religious practice. Understanding how parenting behaviors intervene may shed more light on this finding as parenting behaviors may influence how and if parents are able to transmit their religious values and beliefs to their children.

As such, hypothesis three predicted that the indirect association of maternal religiosity on adolescent risky sexual behavior through adolescent religiosity would be moderated by parental warmth, monitoring, and control. For adolescent lifetime risky sexual behavior, none of the parenting variables moderated this indirect association. This suggests that regardless of the degree to which mothers engage in parenting behaviors, their religion still remains a protective factor against their adolescents' involvement in risky sexual behaviors. This finding can be

reassuring for single mothers whose parenting behaviors (i.e., monitoring and control) may be more compromised due to limited time and resources among other disadvantages (McLoyd, 1990). For recent risky sexual behavior, maternal monitoring and control were significant moderators indicating that the indirect impact of maternal religiosity on recent risky sexual behavior was stronger when mothers also engaged in higher levels of monitoring and control. These findings imply that once adolescents have initiated sexual activity, mothers are possibly able to reinforce the religious values they have taught their children by being more aware of what their children are doing and influencing the behaviors they allow them to do. These findings are somewhat consistent with previous literature that demonstrated warmth and control moderated the association between parental and adolescent religiosity (Hardy et al., 2011; Meyers, 1996). The current findings extend this literature by including the influence of parental monitoring within the context of religious transmission, which to the author's knowledge has not been previously studied. Monitoring appears to be an important factor in this association that may allow mothers to adjust their behaviors based on their awareness of what their children are doing and with whom they are doing it.

Exploratory analyses revealed that the moderating role of parenting was not significantly different for adolescent boys and girls for either lifetime or recent risky sexual behavior. However, adolescent age was a significant moderator such that lower levels of monitoring seem to be key in transmitting religious values to older adolescents while higher levels of monitoring are important to transmitting religious values to younger adolescents, and in turn, protecting against engagement in risky sexual behaviors. These findings lend support to the notion that in order for parents to remain influential in the values and behaviors of their children, they should

adjust their parenting behaviors based on their adolescents' age to allow for more autonomy and independence as they age (Jang & Krohn, 1995; Potvin & Sloane, 1985).

Lastly, hypothesis four posited that parenting behaviors would indirectly effect the association between maternal religiosity and adolescent sexual behavior because religious parents are more likely to engage in an authoritative parenting style which in turn is associated with a decreased likelihood of adolescents engaging in risky sexual behaviors. Contrary to what was expected and to previous findings (Landor et al., 2011; Manlove et al., 2008), the results did not support the proposed hypothesis. Unlike in past studies (Gunnore et al., 199; Hardy et al., 2011; Myers, 1996; Snider et al., 2004), the current study did not find maternal religiosity to be associated with how moms parented their youth. While studies have linked higher levels of these parenting behaviors to parental religiosity in predominantly Caucasian samples from various family structures, higher levels of these behaviors tend to also be associated with African-American parents. It is possible that for this sample these parenting behaviors may not be a function of these mothers' religiosity but rather their culture. In other words, the fact that these mothers engage in higher levels of these parenting behaviors are less likely to be due to the fact that they are also very religious (as may be the case for other races), but rather that for African-American parents adapting this style of parenting is critical in protecting their at-risk youth from the negative consequences of engaging in risky behaviors that they may face in the environment around them (Klein & Forehand, 2000; Kotchick, Forehand, & Brody, 1997; Mason, Cauce, Gonzales, & Hiraga, 1996; McCabe, Clark, & Barnett, 1999; Taylor, 2000). Additionally, the findings of this study seem to suggest that the indirect effect of maternal religiosity on adolescent risky sexual behavior does not appear to be influential through other distal factors associated with mothers and their parenting behaviors, but rather through more proximal factors of

adolescent behaviors (i.e., religiosity) that are then able to prevent them from engaging in risky sexual behaviors.

Limitations

The findings of the current study must be considered in light of the limitations. First, this study utilized a narrow sample of adolescents and their mothers. The current sample included African-American adolescents (an often understudied population) from single-mother homes who also exhibited relatively high levels of religiosity. While this particular sample of adolescents were chosen because of their increased risk for negative outcomes, the results of this study are nonetheless limited in their generalizability to African-American adolescents from two-parent homes, African-American families with lower levels of religiosity, and adolescents from other ethnic groups. Second, this study utilized cross-sectional data. Previous literature suggests that the parent-child relationship is often reciprocal (Coley et al., 2009), and therefore the temporal nature of the associations are unclear. For example, it is unknown whether mothers engaged in these parenting behaviors prior to their adolescents' engagement in sexual activity or if these parenting behaviors were adjusted as a result of their adolescents' sexual activity. Future work should utilize longitudinal or prospective designs that can better clarify these bidirectional associations in order to identify the influencing factors and the direction of causation.

Third, a small portion of youth did not report their sexual behavior and a small percentage of adolescents reported being sexually active. Given the sensitive nature of the types of questions asked, these behaviors may have been underreported. Fendrich and Vaughn (1994) suggested that underreporting may be more likely to occur among respondents for whom disclosure may have a higher social cost (e.g., youth from minority groups). Additionally,

reporting biases may result from inaccurate recall of frequency of past behaviors. Given the significant consequences associated with adolescents engaging in risky sexual behaviors, there is a need for improvements in the measurement of sexual behavior. Research in the study of sexual behaviors have identified the use of computers for data collection (vs. paper and pencil assessment or face-to-face interviewing) and shorter recall periods as effective techniques in improving the reporting of sexual behaviors (McCallum & Peterson, 2010), strategies that were utilized in the present study. Lastly, the findings of this study were based on adolescent report of all measures and possibly biased results due to shared method variance. The choice to only include adolescent reports was made given findings that suggest child reports of parental behavior may be more influential in predicting child outcomes (Gaylord, Kitzmann, & Coleman, 2003). It may be beneficial for future studies to include parent reports to allow for comparisons of findings based on different reporters or observational measures of parenting behaviors.

Strengths

Several strengths of this study also merit attention. First, the present study makes an important contribution to the study of religiosity and adolescent sexual behavior by (1) exploring multiple dimensions of religious involvement, (2) employing multiple indicators of adolescent sexual behavior, and (3) examining variations in the association between religious involvement and adolescent sexual behavior by age and gender within an understudied and often risky sample. These strengths are in line with Zimmer-Gemback and Helfand's (2008) recommendations that future investigations examine gender as a moderator in associations between adolescent sexual behavior and potential predictor variables such as parenting behaviors, particularly among African-American populations. This study is also distinctive in its examination of a more socioeconomically representative group of African-American single

mother families than is traditionally examined in the literature (see Jones, Zalot, Foster, Sterret & Chester, 2007 for a review).

Future directions

While the current study contributes significantly to the literature examining the association between religiosity and adolescent risky sexual behavior, it represents just a piece of the broader picture that also includes other relevant factors. Two factors are the religious and sexual messages and the quality of the communication of these messages that adolescents receive from their parents and other sources. Previous studies have found that the quality of parent-adolescent-communication (e.g., open, receptive, comfortable, and honest) was related to delayed initiation of sexual intercourse, less sexual experience, and adolescent identification with parental religiosity (Baumbach, Forward & Hart, 2006; Clark, Worthington, & Danser, 1988; Dutra, Miller & Forehand, 1999; Kotchick, Dorsey, Miller, & Forehand, 1999). In other words, parents who engage in open, receptive communication with their children are likely to utilize this type of communication to discuss their values, beliefs, and expectations regarding their adolescents' religiosity and sexual behavior which in turn, is likely to influence their likelihood of engaging in religious and sexual activities.

Studies have found the content, amount of information provided, and frequency of communication to be key factors as well. Although this study utilized a multi-dimensional measure of religiosity and risky sexual behavior, it can only make assumptions about the messages, as well as their content and frequency that adolescents have received from their mothers and others regarding religious beliefs and values and sexual behavior. Understanding the impact of these messages as well as the influence of the quality of the communication of

these messages on adolescent sexual behavior, and whether or not they are internalized, would provide more clarity about the protective role of religiosity.

In sum, the association between religiosity and adolescent sexual behavior is a complex process that warrants a comprehensive study of other important contributing factors that influence this relation. By utilizing a theory-driven model to examine the interrelationships among these variables, the current study is merely a starting point in providing further clarity of how these mechanisms operate for a particularly vulnerable, yet resilient subgroup of African-American adolescents.

Conclusions and Implications

The current study sought to extend the literature that examined the associations among religion, parenting, and adolescent sexual behavior within an ecological risk-resilience framework that would further clarify the processes that help protect African-American youth from engaging in risky sexual behaviors, despite their elevated risk. Maternal religiosity, through the transmission of their religiosity to their children, indirectly decreased the likelihood that adolescents would engage in risky sexual behaviors. Maternal religiosity appears to be equally protective for adolescent boys and girls, and more protective for older versus younger adolescents. The protective indirect effect of maternal religiosity did not change based on level of parenting behaviors. However, it did appear that higher levels of maternal monitoring and control had more immediate benefits in the facilitation of religious values to adolescents, which in turn, was protective against current adolescent engagement in sex. Lastly, age-adjusted levels of monitoring were important in helping mothers pass on their religious values to their children, and subsequently protecting against engagement in risky sexual behaviors.

Considering the magnitude of the effect (medium), findings from this study would suggest that religiosity would be a reasonable target of intervention for prevention programs. Specifically, future parenting interventions would benefit from understanding the integral protective role of religiosity and target ways to help mothers pass on their values and beliefs to their children. One way to do this would be to assist mothers in incorporating religious supports and activities in potentially reducing adolescent sexual activity. Prevention programs can also assist parents in the development of age-appropriate strategies through which they learn how to tailor their parenting behaviors as their adolescents grow older. While there are prevention programs (e.g., Strong African-American Families (SAAF)) that target parenting as an intervention point in the prevention of risky sexual behaviors among African-American youth, these programs do not address religiosity or its role in helping parents protect their children from engaging in risky sexual behaviors. This program has found that changes in parenting behaviors indirectly decreased adolescent engagement in risky sexual behaviors by influencing adolescent factors (Murry, Cady, Brody, Gibbons, & Gibbons, 2007). The findings of this study support the inclusion of religiosity in such programs as another parental asset that would further enhance parents' protective influence in preventing adolescent risky sexual behaviors.

APPENDIX A: INTERACTION BEHAVIOR QUESTIONNAIRE-MOTHER VERSION

Think back over the last several weeks at home. The following statements have to do with you and your mother. Please tell us if you believe that the statement is mostly **true** or mostly **false** about you and your mother. Your answers will not be shown to your mother or anyone else in your family.

- 0 True
- 1 False
- 8 Refuse to Answer

- *Q1. Your mother understands you. She knows where you are coming from.
- *Q2. When your mother and you fuss with each other, you end your fusses calmly sometimes.
- *Q3. Your mother and you almost always seem to agree or get along okay with each other.
- *Q4. You enjoy the talks your mother and you have.
- Q5. When you state your opinion, or say what you think, your mother gets upset.
- Q6. At least three times a week, your mother and you get angry or fuss at each other.
- *Q7. Your mother listens when you need someone to talk to.
- *Q8. Your mother is a good friend to you.
- Q9. Your mother says you have no consideration or respect for her.
- Q10. At least once a day your mother and you get angry or fuss at each other.
- Q11. Your mother is bossy when you talk.
- Q12. Your mother doesn't understand you or doesn't know where you are coming from.
- Q13. The talks your mother and you have are frustrating or they make you mad.
- *Q14. Your mother understands what you mean even when she doesn't agree with you or see things the same way as you do.
- Q15. Your mother seems to always be complaining about you or talking bad about you.
- *Q16. You think your mother and you get along very well.
- Q17. Your mother screams a lot.
- Q18. Your mother puts you down or says bad things about you.
- *Q19. If you run into problems, your mother helps you out.
- *Q20. You enjoy spending time with your mother.

*Items were reverse coded.

APPENDIX B: MONITORING SCALE-ADOLESCENT VERSION

*terminology adjusted for Mother-report measure, but same items are used for both reporters.

The next several items will ask you how much your mother knows about your activities.

- 0 Not at all
- 1 Rarely
- 2 Some of the time
- 3 Most of the time
- 4 Always
- 8 Refuse to Answer

How often does your mother know:

- Q1. What you do during your free time?
- Q2. Who you have as friends during your free time?
- Q3. What type of homework you have?
- Q4. What you spend your money on?
- Q5. When you have an exam or assignment due at school?
- Q6. How you do on different subjects in school?
- Q7. Where you go when out at night with friends?
- Q8. What you do and where you go after school?
- *Q9. In the past month, how often has your mother had no idea where you were at night?

*Item was reverse coded.

APPENDIX C: MATERNAL KNOWLEDGE- ADOLESCENT REPORT

*terminology adjusted for Mother-report measure, but same items are used for both reporters.

The following items will ask you how much your mother and that same co-parent know about your daily activities.

- 0 Not at all
- 1 Rarely
- 2 Some of the time
- 3 Most of the time
- 4 Always
- 8 Refuse to Answer

First, think about you and your mother. How often:

Q11. Do you need to have permission from your mother to stay out late on a weekday evening?

Q12. Do you need to ask your mother before you can decide with friends what to do on a Saturday night?

Q13. If you have been out very late one night, does your mother require that you explain what you did and whom you were with?

Q14. Does your mother require that you tell her where you are at night, whom you are with, and what you do together?

Q15. Before you go out on a Saturday night, does your mother require you to tell her where you are going?

APPENDIX D: RELIGIOSITY-ADOLESCENT REPORT

The following questions ask about religion and spirituality. For this first set of questions, please click on the number that best represents how you feel.

Q1. How religious is your family?	Not religious at all	0
		1
		2
	Very religious	3
	Refuse to Answer	8
Q4. Do you believe in God?	Definitely no	0
		1
	Definitely yes	2
	Refuse to Answer	8
Q5. How religious are you?	Not religious at all	0
		1
		2
	Very religious	3
	Refuse to Answer	8
Q6. How important do you think it is for teens to attend religious services?	Not important at all	0
		1
		2
	Very important	3
	Refuse to Answer	8
Q7. How often do you read the Bible, or other religious books, magazines, or stories?	Never	1
		2
		3
		4
	Nearly every day	5
	Refuse to Answer	8

Q8. How often do you say grace before you eat?

Never	1
	2
	3
	4
Nearly every day	5
Refuse to Answer	8

Q9. How often do you pray?

Never	1
	2
	3
	4
Nearly every day	5
Refuse to Answer	8

Q10. How often do you go to religious services?

Never	1
	2
	3
	4
Nearly every day	5
Refuse to Answer	8

Q11. How often do you ask someone to pray for you?

Never	1
	2
	3
	4
Nearly every day	5
Refuse to Answer	8

APPENDIX E: YOUTH RISK BEHAVIOR SURVEY – ADOLESCENT REPORT

The following questions are about health behavior. Your responses will be confidential and we will not share your responses with your mother, her co-parent, or any other family members. Please answer every question as honestly as you can. Mark only one answer to every question.

The next set of questions asks about sexual behavior. These questions will ask about vaginal intercourse, anal intercourse, and oral sex. Again, your responses will be confidential and we will NOT share your responses with your mother or the co-parent participating in this study with you. So, please answer every question as honestly as you can. However, we would like to remind you that you can refuse to answer any questions that you do not want to answer.

Q12. How old were you when you had sexual intercourse, including vaginal, anal, or oral, for the first time? (Choose one)

- 0 I have never had sexual intercourse (Skip to instruction before Q1)
- 1 11 years old or younger
- 2 12 years old
- 3 13 years old
- 4 14 years old
- 5 15 years old
- 6 16 years old
- 7 17 years old or older
- 8 Refuse to Answer

Q13. During your lifetime, how many times have you had sexual intercourse, (vaginal, anal, or oral)? (Choose one)

- 1 1 or 2 times
- 2 3 to 9 times
- 3 10 to 19 times
- 4 20 to 39 times
- 5 40 to 99 times
- 6 100 or more
- 8 Refuse to Answer

Q14. During your lifetime, with how many partners have you had sexual intercourse, (vaginal, anal, or oral)? (Choose one)

- 1 1 partner
- 2 2 partners
- 3 3 partners
- 4 4 partners
- 5 5 partners
- 6 6 or more partners
- 8 Refuse to Answer

Q15. Of the times you have had sexual intercourse, including vaginal, anal, or oral, during your lifetime, how often have you and your partner used a condom? (Choose one)

- 0 I have never used a condom

- 1 I rarely used a condom (about 25% of the time)
- 2 I sometimes used a condom (about half of the time)
- 3 I used a condom most of the time (about 75% time)
- 4 I always used a condom
- 8 Refuse to Answer

Q16. During the past 30 days, how many times did you have sexual intercourse, (vaginal, anal, or oral)? (Choose one)

- 0 0 times Skip to instruction before Q1
- 1 1 time
- 2 2 or 3 times
- 3 4 to 9 times
- 4 10 to 19 times
- 5 20 or more times
- 8 Refuse to Answer

Q17. During the past 30 days, with how many partners have you had sexual intercourse, (vaginal, anal, or oral)? (Choose one)

- 1 1 partner
- 2 2 partners
- 3 3 partners
- 4 4 partners
- 5 5 partners
- 6 6 or more partners
- 8 Refuse to Answer

Q18. Of the times you have had sexual intercourse, including vaginal, anal, or oral, during the past 30 days, how often have you and your partner used a condom? (Choose one)

- 0 I never used a condom
- 1 I rarely used a condom (about 25% of the time)
- 2 I sometimes used a condom (about half of the time)
- 3 I used a condom most of the time (about 75%)
- 4 I always used a condom
- 8 Refuse to Answer

TABLE 1: Factor loadings based on principle component analysis for 7 items on Religiosity Scale (N = 190)

Item	Factor Loading
How religious are you?	.664
How important do you think it is for teens to attend religious services?	.735
How often do you read the Bible, or other religious books, magazines, or stories?	.654
How often do you say grace before you eat?	.668
How often do you pray?	.765
How often do you go to religious services?	.688
How often do you ask someone to pray for you?	.626

TABLE 2: T-test of gender differences in risky sexual behavior

	Gender		<i>t</i>	<i>df</i>
	Males	Females		
Lifetime sexual behavior	2.69 (4.22)	1.68 (2.99)	1.78	134
Recent sexual behavior	.89 (2.09)	.47 (1.45)	1.54	139

TABLE 3: Bivariate correlations of possible control variables and outcome variables

Variable	1	2	3	4	5	6	7
1. Lifetime risky sexual behavior							
2. Recent risky sexual behavior	.70**						
3. Household income	.03	.05					
4. Maternal education	-.13	-.13	.42**				
5. Adolescent age	.47**	.31**	.10	-.02			
6. Adolescent religiosity	-.37**	-.27**	-.02	.15*	-.14		
7. Maternal religiosity	.00	.03	.06	.04	.10	.31**	

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

TABLE 4: Demographic characteristics of the sample at Time 1 (N = 194)

Variable	M or %	SD
<i>Child</i>		
Age (yrs.)	13.4	1.6
% Female	55.0%	
Grade		
4 th	1.0%	
5 th	6.8%	
6 th	14.7%	
7 th	18.3%	
8 th	16.2%	
9 th	22.0%	
10 th	15.7%	
11 th	4.7%	
12 th	0.5%	
<i>Mother</i>		
Age	38.0	6.7
Education		
Less than high school	0.5%	
Some high school	5.4%	
High school or GED	8.6%	
Some college or vocational school	50.8%	
College degree	20.0%	
Some graduate school	5.9%	
Graduate school degree	8.6%	
Employment status		
Full-time	70.8%	
Part-time	11.4%	
Unemployed	17.8%	
Monthly Income	\$29,734	\$17,456
Number of children in the home	2.01	

TABLE 5: Descriptive statistics for major study variables (N=194)

Variable	(%) Yes		
	Total	Males	Females
Adolescent			
<i>Religiosity Variables</i>			
How religious are you			
Not religious at all	2.7%	6.1%	0.0%
1	17.6%	14.6%	19.8%
2	37.2%	39.0%	35.8%
Very religious	42.6%	40.2%	44.3%
Importance of services			
Not important at all	1.6%	2.4%	0.9%
1	13.2%	16.9%	10.4%
2	35.4%	31.3%	38.7%
Very important	49.7%	49.4%	50.0%
Religious reading			
Never	21.1%	26.2%	17.0%
2	26.3%	22.6%	29.2%
3	36.8%	34.5%	38.7%
4	10.0%	8.3%	11.3%
Nearly every day	5.8%	8.3%	3.8%
Say grace			
Never	5.3%	7.1%	3.8%
2	9.5%	8.3%	10.4%
3	15.8%	14.3%	17.0%
4	16.3%	20.2%	13.2%
Nearly every day	53.2%	50.0%	55.7%
Pray			
Never	6.3%	8.3%	4.7%
2	14.7%	17.9%	12.3%
3	21.1%	22.6%	19.8%
4	15.8%	14.3%	17.0%
Nearly every day	42.1%	36.9%	46.2%
Church services attendance			
Never			
2	12.2%	19.3%	6.7%
3	15.4%	12.0%	18.1%
4	27.7%	22.9%	31.4%
Nearly every day	22.3%	22.9%	21.9%
Ask for prayer	22.3%	22.9%	21.9%
Never			
2	27.0%	32.5%	22.6%
3	28.0%	26.5%	29.2%
4	18.5%	13.3%	22.6%
Nearly every day	13.2%	12.0%	14.2%

Variable	(%) Yes		
	Total	Males	Females
<i>Sexual Behavior Variables</i>	13.2%	15.7%	11.3%
Age at first intercourse			
I have never had sex			
11 years old or younger	70.2%	67.5%	72.3%
12 years old	6.6%	11.3%	3.0%
13 years old	6.6%	8.8%	5.0%
14 years old	4.4%	2.5%	5.9%
15 years old	9.4%	8.8%	9.9%
16 years old	2.2%	1.3%	3.0%
Lifetime intercourse	0.6%	0.0%	1.0%
1 or 2 times			
3 to 9 times	47.3%	30.8%	62.1%
10 to 19 times	21.8%	15.4%	27.6%
20 to 39 times	10.9%	19.2%	3.4%
40 to 99 times	10.9%	19.2%	3.4%
100 or more times	7.3%	11.5%	3.4%
Lifetime number of partners	1.8%	3.8%	0.0%
1 partner			
2 partners	49.1%	32.0%	64.3%
3 partners	22.6%	12.0%	32.1%
5 partners	11.3%	20.0%	3.6%
6 or more partners	5.7%	12.0%	0.0%
Lifetime condom use	11.3%	24.0%	0.0%
I have never used a condom			
Rarely (25% of the time)	13.0%	16.0%	10.3%
Sometimes (50% of the time)	5.6%	4.0%	6.9%
Frequently (75% of the time)	3.7%	8.0%	0.0%
I always use a condom	14.8%	8.0%	20.7%
Recent intercourse	63.0%	64.0%	62.1%
0 times			
1 time	56.1%	50.0%	62.1%
2 or 3 times	17.5%	14.3%	20.7%
4 to 9 times	12.3%	17.9%	6.9%
10 to 19 times	7.0%	7.1%	6.9%
20 or more times	5.3%	10.7%	0.0%
Recent number of partners	1.8%	0.0%	3.4%
1 partner			
2 partners	76.9%	60.0%	100%
3 partners	7.7%	13.3%	0.0%
4 partners	0.0%	0.0%	00.0%
5 partners	7.7%	13.3%	0.0%
Recent condom use	7.7%	13.3%	0.0%
I have never used a condom			
Rarely (25% of the time)	4.0%	0.0%	9.1%

Variable	(%) Yes		
	Total	Males	Females
Sometimes (50% of the time)	12.0%	14.3%	9.1%
Frequently (75% of the time)	8.0%	7.1%	9.1%
I always use a condom	4.0%	0.0%	9.1%
	72.0%	78.6%	63.6%
Mother			
<i>Religiosity Variables</i>			
How religious are you			
Not religious at all			
1	3.7%		
2	4.7%		
Very religious	30.4%		
Importance of services	61.3%		
Not important at all			
1	2.1%		
2	6.3%		
Very important	22.1%		
Religious reading	69.5%		
Never			
2	6.9%		
3	11.6%		
4	23.8%		
Nearly every day	24.3%		
Say grace	33.3%		
Never			
2	3.2%		
3	4.7%		
4	6.3%		
Nearly every day	6.8%		
Pray	78.9%		
Never			
2	1.1%		
3	1.6%		
4	8.9%		
Nearly every day	11.6%		
Church services	76.8%		
Never			
2	5.3%		
3	15.8%		
4	40.0%		
Nearly every day	24.7%		
Ask for prayer	14.2%		
Never			
2	7.3%		
3	12.0%		

Variable	(%) Yes		
	Total	Males	Females
4 Nearly every day	28.3% 27.2% 25.1%		

TABLE 6: Estimates (and 95% bootstrapping confidence intervals) for indirect effects (Hypotheses 2 and 4)

	Lifetime Risky Sexual Behavior				Recent Risky Sexual Behavior			
	Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Mediator</u>								
Adolescent religiosity	-.46	.15	-.81	-.22	-.17	.07	-.35	-.05
Maternal warmth	-.00	.04	-.12	.04	-.00	.02	-.07	.03
Maternal monitoring	-.08	.08	-.28	.05	-.05	.05	-.15	.03
Maternal control	-.03	.04	-.17	.02	-.05	.04	-.14	.01

TABLE 7: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of adolescent gender (Hypothesis 2 exploratory)

	<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
	<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent Religiosity</u>								
Predictor: Maternal religiosity	.44	.29	1.54	1.23	.36	.28	1.25	.21
Moderator: Gender	.13	.88	.15	.88	.02	.88	.02	.98
Interaction: Maternal religiosity X gender	-.01	.17	-.05	.96	.02	.17	.15	.88
<u>Outcome: Lifetime risky sexual behavior</u>								
Predictor: Adolescent religiosity	-1.10	.23	-4.78	.00	-.43	.12	-3.52	.00
Moderator: Gender	-3.34	1.94	-1.72	.09	-.38	1.05	-.36	.72
	Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Value</u>								
Male	-.47	.25	-1.08	-.10	-.16	.11	-.45	-.02
Female	-.47	.16	-.83	-.21	-.17	.07	-.36	-.06

TABLE 8: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of adolescent age (Hypothesis 2 exploratory)

	<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
	<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>								
Predictor: Maternal religiosity	-.74	.68	-1.09	.28	-.93	.67	-1.38	.17
Moderator: Age	.14	.16	.86	.39	-.60	.26	-2.31	.02
Interaction: Maternal religiosity X age	.09	.05	1.73	.09	.10	.05	2.00	.05
<u>Outcome: Lifetime risky sexual behavior</u>								
Predictor: Adolescent religiosity	-1.28	.25	-5.16	.00	1.93	.97	1.98	.05
Moderator: Age	2.32	.62	3.76	.00	1.08	.34	3.19	.00
	Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Value</u>								
11.8 (-1 SD)	-.37	.19	-.83	-.05	-.11	.08	-.33	-.01
13.4 (Mean)	-.54	.16	-.93	-.29	-.19	.08	-.38	-.07
15.0 (+1 SD)	-.72	.20	-1.16	-.37	-.26	.10	-.49	-.10

TABLE 9: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal warmth (Hypothesis 3)

	<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
	<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>								
Predictor: Maternal religiosity	.18	.26	.69	.49	.11	.26	.41	.68
Moderator: Maternal warmth	-.02	.08	-.25	.80	-.03	.08	-.39	.70
Interaction: Maternal religiosity X maternal warmth	.01	.02	.82	.41	.02	.02	1.01	.32
<u>Outcome: Lifetime risky sexual behavior</u>								
Predictor: Adolescent religiosity	-1.08	.24	-4.54	.00	-.40	.13	-3.09	.00
	Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Value</u>								
11.9 (-1 SD)	-.36	.17	-.78	-.09	-.12	.07	-.31	-.02
16.4 (Mean)	-.42	.15	-.81	-.19	-.14	.07	-.33	-.04
20.9 (+1 SD)	-.48	.20	-.97	-.18	-.17	.10	-.41	-.03

TABLE 10: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal monitoring (Hypothesis 3)

	<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
	<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>								
Predictor: Maternal religiosity	-.04	.29	-.14	.89	-.34	.32	-1.06	.29
Moderator: Maternal monitoring	-.07	.06	-1.13	.26	-.09	.06	-1.50	.14
Interaction: Maternal religiosity X maternal monitoring	.02	.01	1.93	.06	.03	.01	2.33	.02
<u>Outcome: Lifetime risky sexual behavior</u>								
Predictor: Adolescent religiosity	-1.11	.24	-4.69	.00	-.43	.13	-3.42	.00
	Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Value</u>								
19.6 (-1 SD)	-.27	.20	-.72	.04	-.08	.08	-.30	.04
26.7 (Mean)	-.44	.16	-.82	-.20	-.16	.08	-.35	-.05
33.8 (+1 SD)	-.62	.21	-1.15	-.29	-.24	.11	-.52	-.08

TABLE 11: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal control (Hypothesis 3)

	<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
	<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>								
Predictor: Maternal religiosity	-.04	.29	-.14	.89	-.15	.29	-.53	.59
Moderator: Maternal control	-.11	.09	-1.13	.26	-.13	.09	-1.44	.15
Interaction: Maternal religiosity X maternal control	.03	.02	1.66	.10	.04	.02	2.00	.05
<u>Outcome: Lifetime risky sexual behavior</u>								
Predictor: Adolescent religiosity	-1.11	.24	-4.66	.00	-.43	.13	-3.38	.00
	Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Value</u>								
11.8 (-1 SD)	-.35	.14	-.68	-.12	-.11	.06	-.27	-.02
16.3 (Mean)	-.49	.18	-.94	-.23	-.18	.09	-.41	-.05
20.7 (+1 SD)	-.64	.26	-1.28	-.25	-.25	.13	-.59	-.06

TABLE 12: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal warmth at values of adolescent gender (Hypothesis 3 exploratory)

		<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
		<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>									
Predictor: Maternal religiosity		-1.05	1.43	-.74	.46	-1.50	1.40	-1.07	.29
Moderator: Maternal warmth		-.42	.43	-.98	.33	-.53	.42	-1.24	.22
Interaction: Maternal religiosity X maternal warmth X gender		-.04	.04	-.96	.34	-.05	.04	-1.24	.22
<u>Outcome: Lifetime risky sexual behavior</u>									
Predictor: Adolescent religiosity		-1.10	.24	-4.65	.00	-.41	.13	-3.21	.00
		Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Values</u>									
11.8	Male	-.20	.58	-1.58	.77	-.03	.21	-.54	.35
11.8	Female	-.37	.18	-.82	-.10	-.13	.07	-.31	-.03
16.4	Male	-.43	.27	-1.23	-.09	-.14	.11	-.49	-.02
16.4	Female	-.40	.15	-.75	-.17	-.14	.06	-.30	-.04
20.9	Male	-.67	.40	-1.57	-.05	-.26	.17	-.68	-.02
20.9	Female	-.43	.18	-.85	-.15	-.15	.08	-.35	-.04

TABLE 13: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal monitoring at values of adolescent gender (Hypothesis 3 exploratory)

		<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
		<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>									
Predictor: Maternal religiosity		-1.34	1.10	-1.22	.22	-1.62	1.08	-1.50	.13
Moderator: Maternal monitoring		-.33	.21	-1.56	.12	-.35	.21	-1.68	.09
Interaction: Maternal religiosity X maternal monitoring X gender		-.03	.02	-1.13	.26	-.03	.02	-1.23	.22
<u>Outcome: Lifetime risky sexual behavior</u>									
Predictor: Adolescent religiosity		-1.13	.24	-4.78	.00	-.45	.13	-3.55	.00
		Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Values</u>									
19.6	Male	-.16	.36	-1.01	.40	-.02	.15	-.35	.22
19.6	Female	-.39	.21	-.89	-.06	-.13	.09	-.38	-.01
26.7	Male	-.46	.26	-1.07	-.07	-.16	.11	-.45	-.00
26.7	Female	-.48	.16	-.83	-.21	-.18	.08	-.37	-.06
33.8	Male	-.76	.37	-1.68	-.18	-.30	.17	-.75	-.06
33.8	Female	-.56	.20	-1.06	-.26	-.23	.10	-.48	-.07

TABLE 14: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal control at values of adolescent gender (Hypothesis 3 exploratory)

		<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
		<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>									
Predictor: Maternal religiosity		.51	.98	.53	.60	.33	.97	.34	.73
Moderator: Maternal control		.11	.30	.37	.71	.11	.30	.35	.73
Interaction: Maternal religiosity X maternal control X gender		.02	.04	.61	.54	.02	.04	.63	.53
<u>Outcome: Lifetime risky sexual behavior</u>									
Predictor: Adolescent religiosity		-1.14	.24	-4.75	.00	-.44	.13	-3.50	.00
		Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Values</u>									
11.8	Male	-.43	.30	-1.03	.15	-.13	.13	-.45	.06
11.8	Female	-.30	.16	-.64	-.04	-.10	.06	-.24	-.01
16.3	Male	-.53	.28	-1.19	-.10	-.18	.12	-.51	-.02
16.3	Female	-.52	.21	-1.03	-.22	-.20	.10	-.44	-.06
20.7	Male	-.63	.35	-1.42	-.07	-.23	.15	-.63	-.03
20.7	Female	-.73	.35	-1.67	-.24	-.29	.16	-.74	-.07

TABLE 15: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal warmth at values of adolescent age (Hypothesis 3 exploratory)

		<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
		<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>									
Predictor: Maternal religiosity		-1.47	2.97	-.50	.62	-2.17	2.94	-.74	.46
Moderator: Maternal warmth		-.16	.91	-.18	.86	-.34	.90	-.37	.71
Interaction: Maternal religiosity X maternal warmth X age		-.00	.01	-.16	.88	-.00	.01	-.34	.73
<u>Outcome: Lifetime risky sexual behavior</u>									
Predictor: Adolescent religiosity		-1.31	.26	-5.10	.00	-.47	.13	-3.61	.00
		Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Values</u>									
Warmth	Age								
11.9	11.9	-.21	.39	-1.05	.56	-.04	.14	-.37	.22
11.9	13.4	-.40	.23	-.99	-.02	-.12	.08	-.39	-.01
11.9	15.0	-.59	.25	-1.19	-.16	-.20	.10	-.45	-.06
16.4	11.9	-.33	.22	-.84	.03	-.10	.08	-.34	.01
16.4	13.4	-.50	.17	-.90	-.23	-.17	.07	-.38	-.06
16.4	15.0	-.67	.22	-1.15	-.31	-.23	.09	-.50	-.09
20.9	11.9	-.45	.33	-1.12	.13	-.16	.163	-.50	.01
20.9	13.4	-.60	.24	-1.13	-.22	-.22	.11	-.49	-.07
20.9	15.0	-.76	.27	-1.36	-.29	-.27	.12	-.59	-.10

TABLE 16: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal monitoring at values of adolescent age (Hypothesis 3 exploratory)

		<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
		<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>									
Predictor: Maternal religiosity		-7.32	2.80	-2.61	.01	-7.77	2.72	-2.86	.00
Moderator: Maternal monitoring		-1.25	.51	-2.44	.02	-1.31	.51	-2.60	.01
Interaction: Maternal religiosity X maternal monitoring X age		-.02	.01	-2.14	.03	-.02	.01	-2.25	.03
<u>Outcome: Lifetime risky sexual behavior</u>									
Predictor: Adolescent religiosity		-1.33	.25	-5.26	.00	-.50	.13	-3.89	.00
		Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Values</u>									
<u>Monitoring</u>	<u>Age</u>								
19.6	11.9	.13	.35	-.54	.78	.09	.12	-.11	.36
19.6	13.4	-.31	.23	-.77	.08	-.09	.08	-.30	.03
19.6	15.0	-.75	.28	-1.40	-.31	-.27	.13	-.59	-.09
26.7	11.9	-.30	.22	-.81	.05	-.09	.08	-.30	.03
26.7	13.4	-.50	.17	-.89	-.22	-.17	.08	-.36	-.06
26.7	15.0	-.71	.21	-1.15	-.34	-.26	.10	-.50	-.10
33.8	11.9	-.74	.28	-1.42	-.28	-.27	.12	-.59	-.08
33.8	13.4	-.70	.22	-1.20	-.34	-.26	.10	-.51	-.10
33.8	15.0	-.66	.27	-1.29	-.22	-.25	.12	-.57	-.08

TABLE 17: Estimates (and 95% bootstrapping confidence intervals) for conditional indirect effects of maternal control at values of adolescent age (Hypothesis 3 exploratory)

		<u>Lifetime Risky Sexual Behavior</u>				<u>Recent Risky Sexual Behavior</u>			
		<i>B</i>	SE	<i>t</i>	<i>p</i>	<i>B</i>	SE	<i>t</i>	<i>p</i>
<u>Outcome: Adolescent religiosity</u>									
Predictor: Maternal religiosity		-2.60	2.93	-.89	.38	-2.92	2.77	-1.06	.29
Moderator: Maternal control		-.04	.91	-.04	.97	-.12	.88	-.14	.89
Interaction: Maternal religiosity X maternal control X age		-.00	.01	-.21	.83	-.00	.01	-.24	.81
<u>Outcome: Lifetime risky sexual behavior</u>									
Predictor: Adolescent religiosity		-1.32	.26	-5.14	.00	-.49	.13	-3.82	.00
		Indirect effect	Boot SE	LLCI	ULCI	Indirect effect	Boot SE	LLCI	ULCI
<u>Moderator Values</u>									
Monitoring	Age								
11.8	11.9	-.03	.28	-.53	.63	.03	.10	-.13	.28
11.8	13.4	-.31	.17	-.67	.01	-.09	.06	-.24	.01
11.8	15.0	-.58	.20	-1.00	-.23	-.20	.09	-.41	-.06
16.3	11.9	-.34	.21	-.83	.02	-.10	.08	-.32	.02
16.3	13.4	-.59	.20	-1.06	-.30	-.20	.09	-.43	-.07
16.3	15.0	-.84	.28	-1.46	-.41	-.31	.13	-.61	-.11
20.7	11.9	-.65	.34	-1.44	-.13	-.23	.15	-.63	-.04
20.7	13.4	-.87	.31	-1.60	-.40	-.32	.15	-.68	-.11
20.7	15.0	-1.10	.42	-2.08	-.47	-.42	.18	-.88	-.14

Figure 1: Indirect effect of maternal religiosity on adolescent sexual behavior through adolescent religiosity

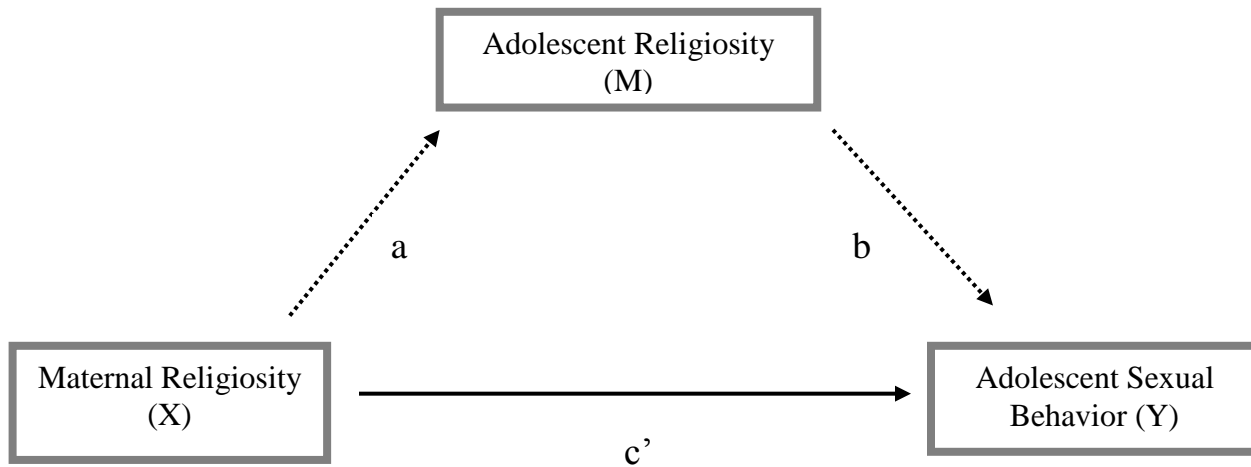


Figure 2: Conditional effect of parenting on the indirect effect of maternal religiosity on adolescent sexual behavior through adolescent religiosity

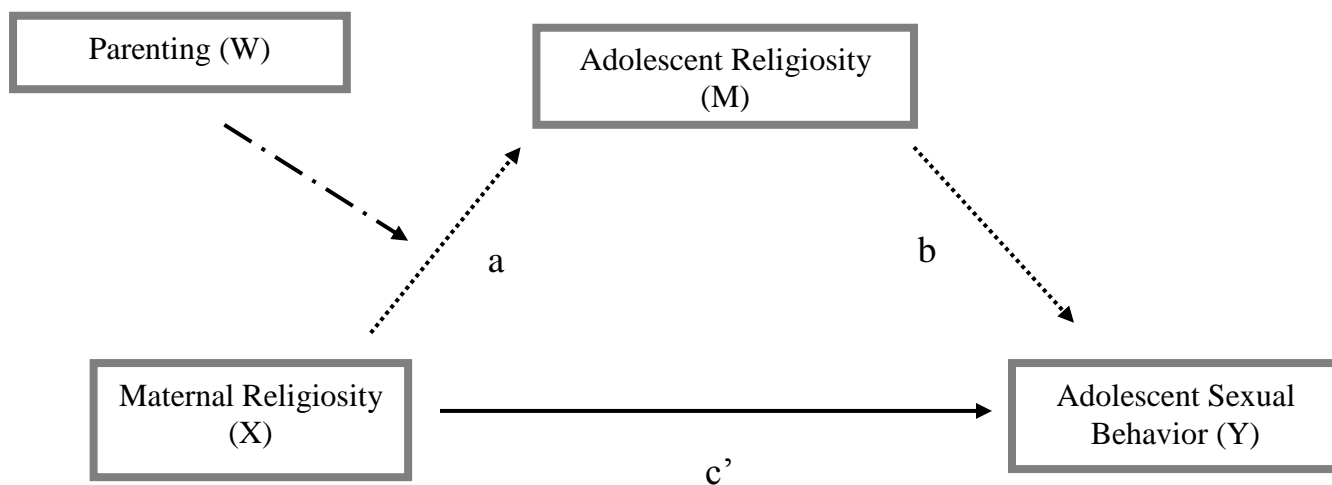


Figure 3: Indirect effect of maternal religiosity on adolescent sexual behavior through parenting

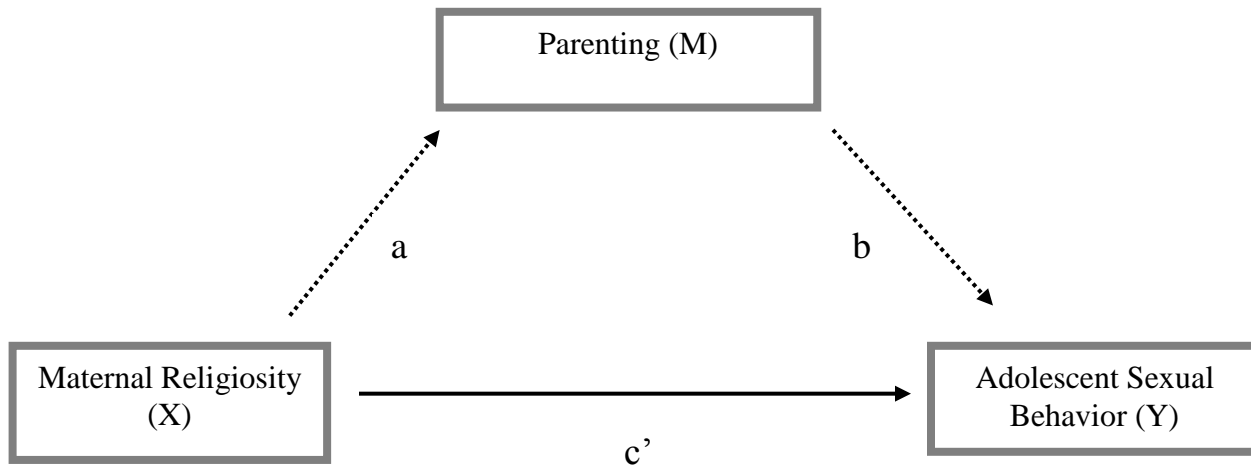


Figure 4: Conditional effect of adolescent gender on the indirect effect of maternal religiosity on adolescent sexual behavior through parenting

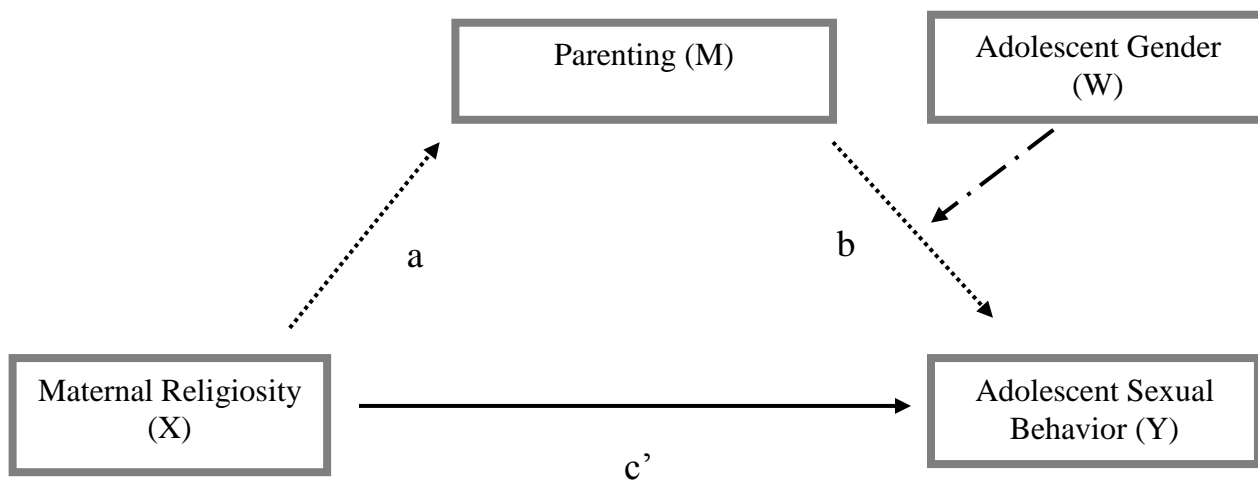


Figure 5: Conditional effect of adolescent age on the indirect effect of maternal religiosity on adolescent sexual behavior through parenting

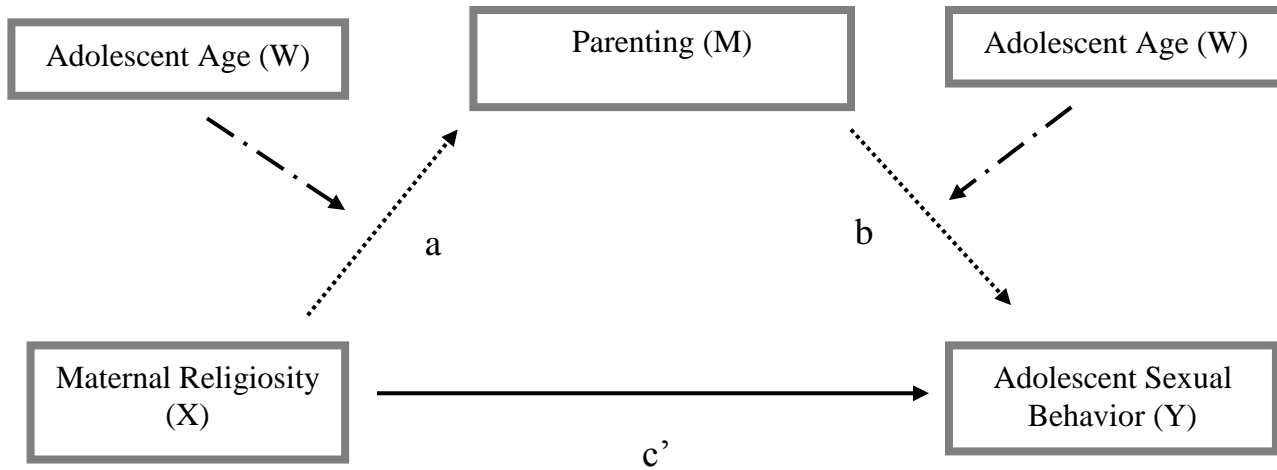


Figure 6: Conditional effect of adolescent gender on the indirect effect of maternal religiosity on adolescent sexual behavior through adolescent religiosity

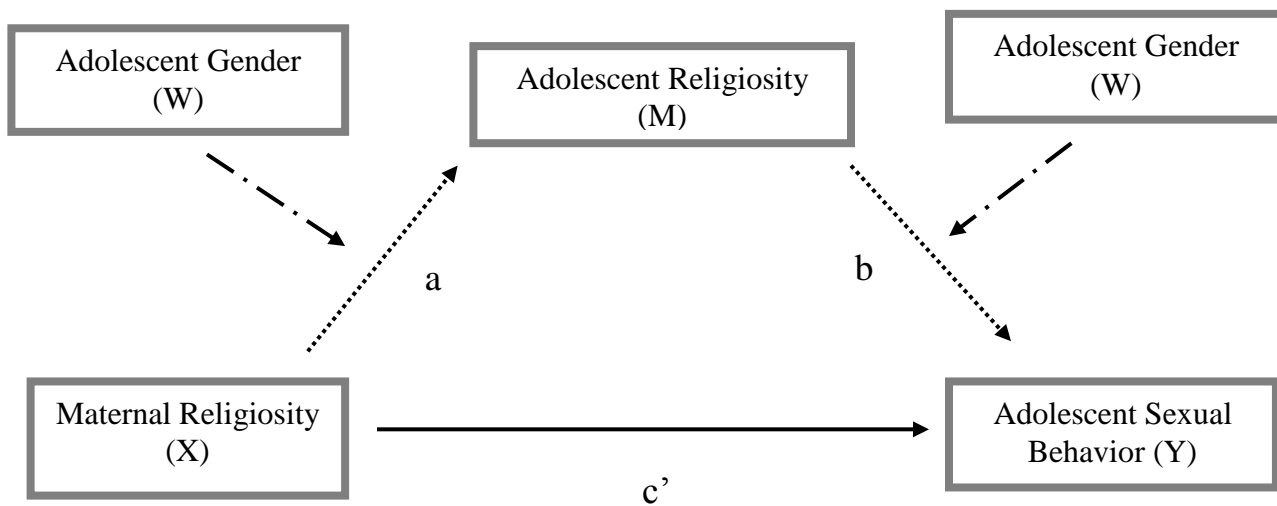


Figure 7: Conditional effect of adolescent age on the indirect effect of maternal religiosity on adolescent sexual behavior through adolescent religiosity

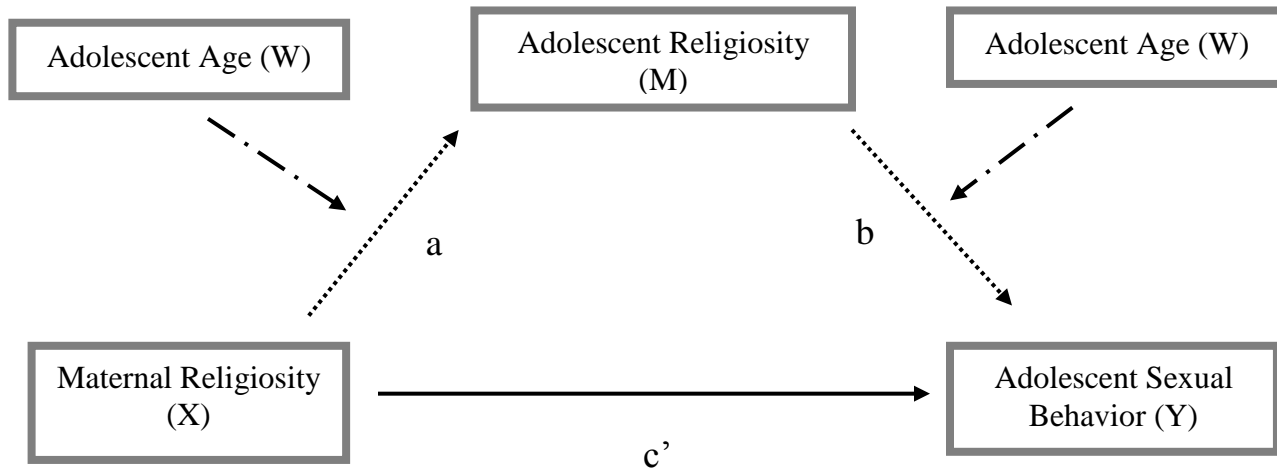


Figure 8: Conditional effect of adolescent gender on the conditional indirect effect of maternal religiosity on adolescent sexual behavior through adolescent religiosity

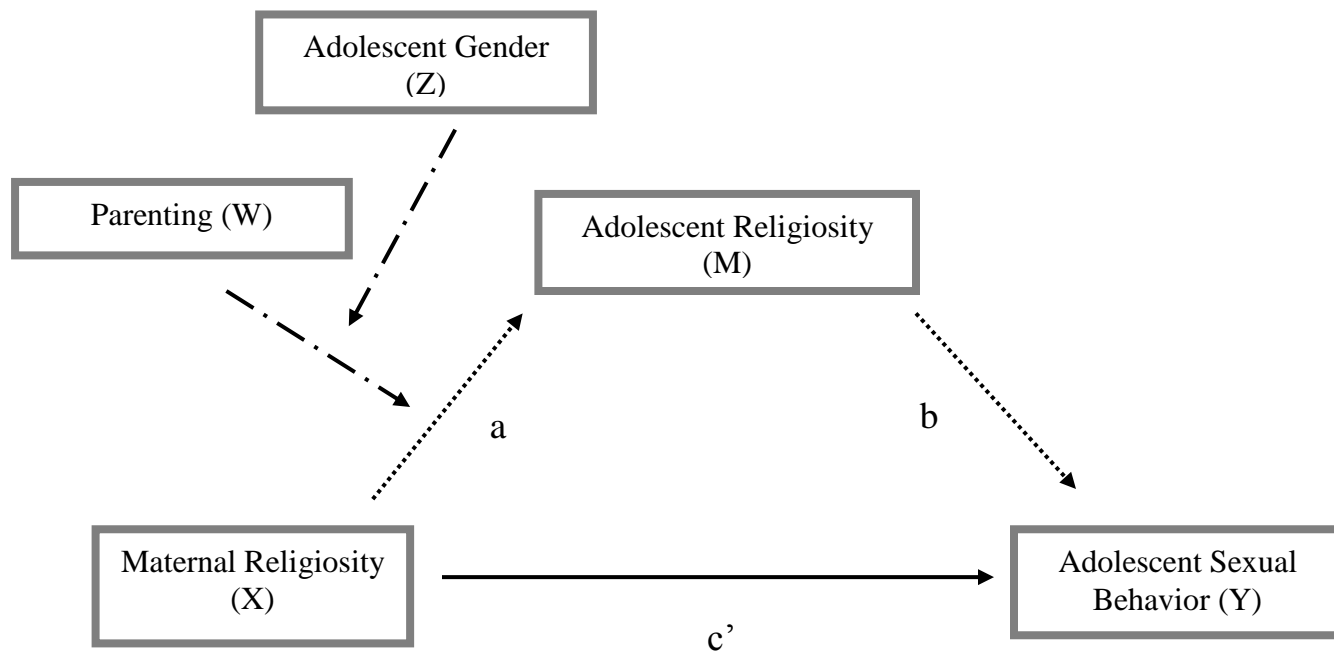
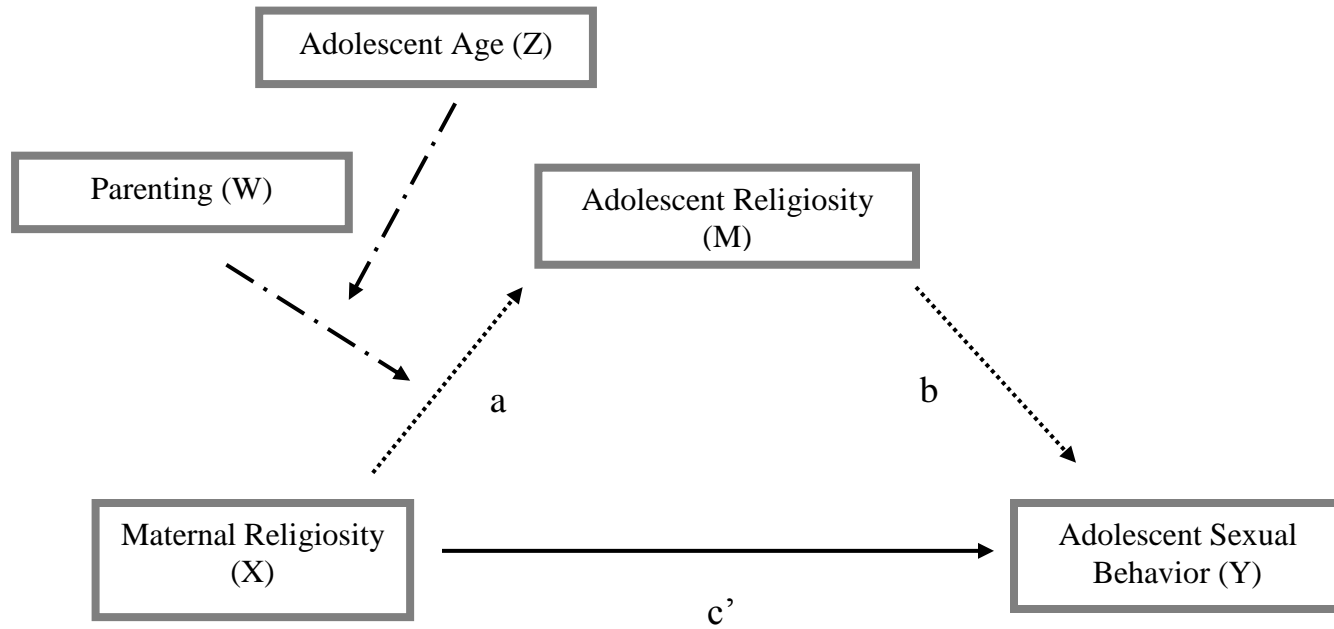


Figure 9: Conditional effect of adolescent age on the conditional indirect effect of maternal religiosity on adolescent sexual behavior through adolescent religiosity



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