

The Sacred Bed: Sex Guilt Mediates Religiosity and Satisfaction for Unmarried People

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Abstract The relationship between religion and sexual satisfaction has long been debated. Oftentimes, previous research on the relationship between these two constructs has been directly contradictory. The current study sought to provide more detail, or perhaps clarify the way that religiosity may relate to sexual satisfaction. Past studies have shown that high religiosity is connected to lower sexual activity, lower desires, and more conservative values. Thus, the current study examined sexual guilt, resulting from sensitivity to internalized religious beliefs and teachings, as a potential mediator between the two constructs. Participants completed an online questionnaire that included measures of religious identification and internalization, sexual satisfaction, and sex guilt. Results suggest that sex guilt mediates the relationship between religiosity and sexual satisfaction for unmarried individuals, but not for married individuals. We suggest calling this finding the *sacred bed phenomenon* because the difference between the models for married and unmarried samples may be due to a belief in the sacred marital bed.

Keywords Religiosity · Sexual satisfaction · Sexual guilt · Marriage

Introduction

Religion and sexual satisfaction have a long and mingled history in the social science literature (for example, see Ashdown et al. 2011). Research on the relationship between religiosity and sexual satisfaction has not shown a clear or

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direct path between the two constructs. For example, some research indicates that religiosity has a positive influence on sexual satisfaction (Murray-Swank et al. 2005), whereas other research indicates a negative relationship between religiosity and sexual satisfaction (Davidson et al. 2004). Furthermore, other research indicates that the relationship between religiosity and sexual traits is influenced by, and perhaps better measured by, taking into account the intrinsic or extrinsic nature of one's religiosity (Rowatt and Schmitt 2003). Such mixed results suggest that the link between religiosity and sexual satisfaction may not be direct, but is instead affected by various possible mediators.

Because previous research on the link between religiosity and sexual satisfaction is inconsistent, it is important to continue exploring this issue. Some of the inconsistency may be due to the widely diverse ways in which religiosity is defined. These definitions can be as varied as a mere count of the number of religious services one attends in a specific amount of time (Davidson et al. 1995) or the personal internalization of religious beliefs (Ryan et al. 1993). The current study examined this issue by utilizing a specific operational definition of religiosity (i.e., religious internalization; Ryan et al. 1993) and by exploring the variable of sexual guilt (Janda and Bazemore 2011) as one possible mediating variable between religiosity and sexual satisfaction. Additionally, because of various religious teachings and previous research findings that discuss marital status as an important aspect of a person's sexual life (McFarland et al. 2011), the current study explored whether the mediation model discussed above changes based on one's relationship (i.e., marital) status.

Sexual Satisfaction

Sexual satisfaction, or an overall positive evaluation of one's sexual life (2005), is influenced by various factors, both sexual and non-sexual. For example, education level and socioeconomic status are both positively correlated with sexual satisfaction among women (Barrientos and Paez 2006), as are frequency of sex and frequency of orgasm (Barrientos and Paez 2006; Carpenter et al. 2009). In addition, specific sexual behaviors, such as oral sex, manual genital stimulation (i.e., petting), and varying one's sexual techniques, have been linked to higher sexual satisfaction (Ashdown et al. 2011; Davidson 1984), whereas anal sex and masturbation have been linked with lower sexual satisfaction (Ashdown et al. 2011; Santilla et al. 2008).

Participants' gender also plays a role in their sexual satisfaction—for example, predictors of sexual satisfaction for men and women are different, with pleasure, expression, and experience seeking positively predicting satisfaction for women but not for men (Stephenson et al. 2011). Other research has indicated that men are generally more satisfied with their sex lives than women (Haavio-Mannila and Kontula 1997); however, a short-term longitudinal study of heterosexual newlyweds did not find such gender differences (McNulty and Fisher 2008). Further highlighting the way that gender influences sexual and relationship satisfaction, Waite and Joyner (2001) hypothesized that greater sexual exclusivity and a greater time horizon (that is, expecting the relationship to last longer) would be related to

greater emotional satisfaction with a relationship, as well as more physical (i.e., sexual) pleasure. They found that men were less sexually exclusive in their relationships than were women, but that men had greater emotional and sexual satisfaction in their relationships than women.

Understanding what influences sexual satisfaction is vital because sexual satisfaction plays an important role in people's lives beyond the bedroom. Research has demonstrated that sexual satisfaction influences general relationship satisfaction (Litzinger and Gordon 2005), and sexual dissatisfaction increases the instability of a marriage (Edwards and Booth 1994) and the likelihood that a couple will divorce (White and Booth 1991). Moreover, sexual satisfaction has even been linked to general life satisfaction, mental health, and religion (Brody and Costa 2009; Sherkat and Ellison 1999). In fact, religion plays a prominent role in relationship satisfaction as well as sexual satisfaction. For example, marriages in which both spouses are of the same faith tend to be happier and are less likely to divorce than spouses who have different faiths (Sherkat and Ellison 1999). Hence, it is critically important for researchers and practitioners to understand the correlates of sexual satisfaction, as it has implications for relationship success and general well-being.

Religion and Sex

Laumann et al. (1994) argue that sexuality is a socially organized construct, meaning that social organizations and social relationships have substantial influence on sexual attitudes and behaviors. One of these theorized and empirically supported social organizations, albeit controversial, correlate of sexual satisfaction is an individual's religiosity and religion's influence on sexuality begins in childhood and adolescence (Regnerus 2007). Haavio-Mannila and Kontula (1997) found that individuals who grew up in a nonreligious childhood home had higher levels of sexual satisfaction as young adults, perhaps because parents tend to have a strong influence on their children's sexual attitudes and beliefs; stronger even than on their influence on children's sexual knowledge (Regnerus 2007). The relationship between lower religiosity during childhood and sexual satisfaction in adulthood may be explained by the relative consistency of religiosity between childhood and adulthood (McCullough et al. 2005). Low levels of religiosity among adults have also been connected with more liberal sexual views, more sexual activity, and more sexually active friends (Thornton and Camburn 1989). Additionally, a higher rate of attendance at religious services has been linked to less engagement in sexual behaviors that include activities such as experimenting (e.g., places and positions) and oral sex (Mahoney 1980).

Conversely, another recent study (McFarland et al. 2011) that investigated both married and unmarried adults found that simple attendance at religious services was negatively related to sexual satisfaction for married individuals, but that married individuals who integrated religion into their daily lives claimed to experience more pleasure from sex than their non-married counterparts. Furthermore, married individuals who sanctified their marriages (i.e., perceived one's marriage as having divine character; Pargament and Mahoney 2005) had greater marital satisfaction, greater sexual satisfaction and greater sexual intimacy than those who did not

sanctify their marriages (Hernandez et al. 2011). Interestingly, more religious women were more likely to experience orgasm when engaging in sex with their partner than were less religious women, and, generally, being affiliated with a religious group predicted more frequent orgasms (Laumann et al. 1994).

Adding further opacity to the nature of the relationship between religiosity and sexual satisfaction, other evidence suggests that no relationship between the two constructs exists. For example, Davidson et al. (1995) found that women who attended church frequently had the same amount of sexual satisfaction as women who did not attend church. Moreover, Ashdown et al. (2011) found no significant relationship between religiosity (measured via church attendance) and sexual satisfaction. However, it is important to note that the authors mention that the lack of findings in their sample may be due to how they measured religion, stating that future researchers should use a measure that included the impact, or intrinsic nature, of one's religious teachings. Regardless, these contradictory findings indicate that the relationship between sexual satisfaction and current, adulthood religiosity may be more complex than a simple, linear connection.

This complex and often contradictory body of research suggests various conclusions and invokes some questions. First, the finding that religiosity was related to sexual satisfaction differently for married individuals than non-married individuals suggests that perhaps marital status interacts with religiosity in diverse ways to affect a person's sexual and relationship satisfaction (Laumann et al. 1994; McFarland et al. 2011). This makes logical sense as many organized religious traditions officially teach that premarital sexual behavior is inappropriate and/or unacceptable (see Rosenbaum and Weathersbee 2013, for a review). For example, the Church of Jesus Christ of Latter-Day Saints (LDS, also known as Mormons) hold in high esteem *The Family: A Proclamation to the World* (LDS 1995), a document expounding upon the denomination's beliefs about family and marriage. In the document, members of the LDS church are told, "...that God has commanded that the sacred powers of procreation are to be employed only between man and woman, lawfully wedded as husband and wife" (LDS 1995, para. 4).

Other conservative Christian churches also teach that sexual behavior should be reserved solely for marriage. For instance, Calvary Memorial church, a historical conservative Christian church in Oak Park, Illinois, claims on its website that, "[w]e believe that marriage was ordained by God at creation as the sacred union of one man and one woman. All sexual relations must therefore be reserved for that union" (Calvary Memorial, n.d., para. 10). Hence, for adherents of these and similar denominations, what is acceptable and sacred for married individuals is not acceptable and is even sinful for unmarried individuals—an idea we are calling the *sacred bed phenomenon* (an idea we return to more fully in the discussion of our findings). For this reason, it is particularly important to explore how one's marital status influences a person's sexual satisfaction.

Second, the contradictory findings discussed above suggest that the relationship between religion and sexual satisfaction is not a direct relationship, but instead there exists at least one mediator that influences that relationship. Perhaps a third variable is the tie holding these two constructs together. Such a potential mediator is something that depends on context, especially contexts relevant to religion or

marital status. One possible candidate is sex guilt (Mosher 1968). Sex guilt is defined as a negative affective component, comprised of self-imposed punishment, for either actually violating or expecting to violate 'proper' sexual conduct (Woo et al. 2010). Importantly, sexual guilt is empirically related to both sexual behaviors and various sexual attitudes—for example, guilt is a motivating factor for adolescents (and especially adolescent girls) who refrain from sex (Regnerus 2007).

In past research, participants who experienced more sex guilt reported less intimacy in premarital sexual interactions and had more conservative premarital sexual standards (Mosher and Cross 1971). Teimourpour et al. (2012) provided evidence that in conjunction with attachment styles, sex guilt is negatively related to sexual desire. Sex guilt mediated mainstream acculturation and sexual desire, suggesting that sex guilt was one mechanism by which ethnic groups differ in levels of sexual desire (Woo et al. 2010). Moreover, sex guilt was the largest discriminant between women who have sexual dysfunction and those women who do not (Nobre and Pinto-Gouveia 2006). As it pertains to the current study, sex guilt has also been directly connected to religion. Rosenbaum and Weathersbee (2013) found that in a religiously conservative national sample, 70 % of respondents reported engaging in pre-marital sex, and 80 % of those individuals deeply regretted it, a sign of prevalence of sex guilt.

Logically, the influence of religiosity on sex guilt may exist because individuals with high levels of sex guilt are more sensitive to internalized beliefs about what constitutes appropriate sexual behavior (Janda and Bazemore 2011). These internalized beliefs are possibly created and maintained by religious teachings and values (see Harris et al. 2008 for a review), such as the LDS's and Calvary Memorial's beliefs about sexuality within marriage (Calvary Memorial, n.d.; LDS 1995) and the finding that more than half of respondents agreed that their religious beliefs influenced their sexual behavior (Laumann et al. 1994). This might also explain Haavio-Mannila and Kontula's (1997) and Thornton and Camburn's (1989) findings that were discussed earlier. That is, children who are raised in low-religiosity homes also have higher levels of sexual satisfaction as young adults because they also have less sex guilt. Conversely, higher rates of religiosity may be related to higher levels of sex guilt, partially explaining the findings of Mahoney (1980) that individuals with higher church attendance engage in less sexual activity.

Third, the complex relationship between religiosity and sexual satisfaction is probably partially created by the way that religiosity is measured. In other words, the conflicted findings suggest that the way the variable of religiosity is defined and measured can lead to varying results—such as the differences found when religiosity is defined as religious attendance or religious integration (McFarland et al. 2011), or explored as belief in a specific doctrine such as the sanctification of marriage (Hernandez et al. 2011). Thus, the measurement of religiosity should be carefully considered to ensure that pertinent latent constructs are being represented accurately (Hood et al. 2009).

Many of the previous studies that have investigated the relationship between religiosity and sexual satisfaction have measured religiosity by simply asking participants how often they attend religious services (e.g., Davidson et al. 1995). Although this is one valid way to measure religiosity, it may ignore other important aspects. Faith is considered an important component of religiosity (Plante et al. 2002), but is not measured when participants simply report how often they attend

services. Furthermore, the intrinsic (i.e., religion as the end) or extrinsic (i.e., religion as a means to an end) nature of one's religious experiences is also important (Allport 1950; Rowatt and Schmitt 2003). In this same vein, religious internalization is a measure of one's intrinsic views on religion (Ryan et al. 1993). Ryan et al. (1993) highlighted the importance of two types of religious internalization (introjection and identification) as the extent to which religious beliefs and behaviors are adopted by an individual and endorsed even without external motivations. Religious internalization is independent of religious attendance, as one can attend religious services without internalizing religious beliefs (and vice versa). Therefore, including a measure of religiosity that explores this component of the variable may aid to delineate the relationship between religiosity and sexual satisfaction. As previous research has found (e.g., Ashdown et al. 2011), measuring religiosity simply as religious attendance does not always reveal a relationship between religiosity and sexual satisfaction. On the other hand, research that has measured religiosity in a way other than religious attendance (e.g., McFarland et al. 2011) has established a link between religiosity and sexual satisfaction.

Current Study

The contradictions in the literature suggest that the relationship between religiosity and sexual satisfaction may involve a mediating variable such as sex guilt. As previous research has suggested a link between both sexual satisfaction and religiosity (Mosher and Cross 1971; Teimourpour et al. 2012) and religiosity and sex guilt (Rosenbaum and Weathersbee 2013), the purpose of the current study was to investigate whether sex guilt mediates the relationship between sexual satisfaction and religiosity. Importantly, we posited that by measuring religiosity based on how much participants internalize their religious beliefs (specifically, religious introjection and identification; Ryan et al. 1993) rather than simply as a self-report measure of attendance at religious services (which may tell us little about how religion influences the sex lives of participants; Ashdown et al. 2011), we could better elucidate the way that religiosity influences sexual satisfaction. Therefore, we first hypothesized that religiosity (i.e., both religious identification and religious introjection) would be related to sexual satisfaction.

Secondly, we hypothesized that sex guilt would mediate the relationship between the two measures of religiosity and sexual satisfaction. Specifically, we posited that religiosity would be positively related to sex guilt, but both religiosity and sex guilt would be negatively related to sexual satisfaction. Third, we hypothesized that this mediated relationship might appear differently for married people than for their non-married counterparts. Although it was unclear what the specific differences might be, in general the mediation was expected to be exacerbated, or to have a greater effect, in the unmarried group than in the married group (Rosenbaum and Weathersbee 2013). However, this portion of the examination was exploratory and as the purpose was to examine potential differences that may occur in the mediated models, the variable of marital status was not analyzed as a moderator. Instead, the full sample was divided into two groups, married and unmarried, and an examination of the two models was conducted.

Methods

Participants

A total of 258 (62.1 % self-reported female) residents of the United States participated in the current study. The participants' overall mean age was 31.17 years ($SD = 10.89$ years). Regarding ethnicity, 71.4 % were White/Caucasian, 11.6 % were Black/African-American, 7.7 % were Asian, 5.1 % were Hispanic/Latino, and 3.9 % indicated some other ethnicity. Regarding religious denomination, 12.5 % were Catholic, 37.3 % were Protestant, 3.2 % were Muslim, 3.5 % were Jewish, and 4.5 % indicated some other religion. Additionally, 15.4 % reported they were agnostic or atheist, and 16.1 % reported no affiliation. The remaining participants (4.7 %) did not answer the question. However, this particular variable (i.e., denomination) was not a variable of interest in the current study, as instead we were interested in the amount of internalization of religious teachings, regardless of the specific teachings.

For the purpose of analyses, the data file was split into two groups: married and unmarried (but in a relationship; 22 participants who were unmarried and not in a relationship at the time of the data collection were removed from the dataset and all subsequent analysis). There were 100 married individuals (63.0 % female), ranging in age from 19 to 70 ($M = 36.78$ years, $SD = 11.04$ years) and they had been in their current marriage for an average of 10.29 years ($SD = 9.11$ years). Two individuals did not report the amount of time in the relationship.

There was a total of 136 unmarried participants (63.3 % female) ranging in age from 18 to 71 ($M = 28.03$ years, $SD = 8.95$ years). Of those, 111 were dating, and 25 were engaged, with the mean length of time for their current relationship being 2.57 years ($SD = 3.30$ years). As with the married participants, two individuals did not report the length of time in the relationship.

It is important to note that the difference in relationship length between those married and unmarried was significant ($t_{(234)} = 8.02$, $p < .001$), as was their difference in age, $t_{(234)} = 7.16$, $p < .001$. As this was of concern, a t test of independence was conducted to examine if there was a difference between the groups on sexual satisfaction. This preliminary analysis indicated that there was no difference in levels of sexual satisfaction between the two groups, $t_{(234)} = 1.29$, $p = .197$.

Materials

Religious Internalization

Participants responded to the Christian Religious Identity Scale (CRIS; Ryan et al. 1993). This survey has twelve items that participants respond to using a four-point Likert scale (1 = never true; 4 = always true). The items are then averaged for a final score. As the final score is averaged, missing data on any one item on the scale was ignored in the final calculations. That is, the average of the remaining

information was calculated. There was no pattern among the individual items that were skipped by participants ($n = 9$), thus it was determined that the missing data was random. The scale has two subscales that represent two types of internalization: identification and introjection. Religious identification measures how much the individual experiences personal value in regards to religious activities and beliefs and sees his or her religious behavior as based on an internal locus of control. An example of a religious identification item is “I often pray because I enjoy it”. Higher scores indicate more religious internalization (in the current sample, $\alpha = .95$). The second subscale measures religious introjection, which is how much a person internalizes religion based on guilt, self-approval and need for esteem. An example of a religious introjection item is “I attend church because one is supposed to go”. Higher scores on this scale indicate more religious introjection (in the current sample, $\alpha = .87$). See “[Appendix](#)” for a copy of this measure.

Sex Guilt

Participants completed the Revised Mosher Sex-Guilt Scale (Janda and Bazemore 2011) by using a seven-point Likert scale (1 = very strongly disagree; 7 = very strongly agree) to respond to ten items. The items are then averaged for a final score. As the final score is averaged, missing data on any one item was ignored. There was no pattern among the items that were skipped by participants ($n = 6$), thus it was determined that the missing data was random. While titled the “Sex-Guilt Scale,” it is important to note that the scale measures various attitudes about sexual behaviors and not necessarily guilt about a specific sexual experience. However, the measure has good convergent validity, correlating as expected with constructs that often correlate with sexual guilt, such as regretting the decision to have sex for the first time and waiting longer to have sex for the first time (Janda and Bazemore 2011). An example of an item from this scale is, “Sex relations before marriage should not be recommended.” Necessary items were reverse coded so that higher scores on this measure indicate more sex guilt (in the current sample, $\alpha = .83$). See “[Appendix](#)” for all items in this measure.

Sexual Satisfaction

Participants completed the Sexual Satisfaction Scale, which is a revision of a relationship satisfaction scale (Rusbult et al. 1998). Participants respond to seven items by using an eight-point Likert scale (1 = do not agree at all; 8 = agree completely). An example item from this measure is, “My sexual relationship is close to ideal.” Relevant items were reverse-coded so that higher scores on this measure indicate greater sexual satisfaction. The items are then averaged for a final score. As the final score is averaged, missing data on any one item was ignored for the final score calculation. There was no pattern among the items that were skipped by participants ($n = 5$), thus it was determined that the missing data was random. This revised scale was first used by Ashdown et al. (2011) and had acceptable psychometric properties in its revised form. In the current sample, the measure continued to show adequate reliability ($\alpha = .93$). See “[Appendix](#)” for more information on this measure.

Demographics

Finally, participants completed a basic demographics section. Items queried factors such as sex, age, relationship factors such as time and status, as well as religious items such as denomination.

Procedure

Participants were recruited via MTurk (www.mturk.com), Amazon.com's survey website, where potential participants log-on to MTurk to complete surveys for a small monetary award. When people log-on to MTurk, they see a list of surveys available for them to take that match their characteristics. The current study was listed under the headline of "Beliefs about Relationships". Only participants who were 18 years old or older and residing in the United States were able to see the current study and ultimately participate. Participants who clicked on the link for our study read a recruitment statement. The recruitment statement notified participants that some of the material would be of a mature nature, and urged participants to take the survey in a private area. If they agreed to participate, they responded to all survey items online (average time to complete the surveys was <30 min). All responses were recorded anonymously and downloaded into an independent database. Once they completed the survey, participants were debriefed and received \$0.10 as compensation.

Results

In order to investigate whether sex guilt mediated the relationship between the two types of religiosity (i.e., religious introjection and religious identification) and sexual satisfaction, and whether this relationship changed due to relationship status, the data file was first divided based on marital status: married and unmarried. It should be noted that marital status was not used as a technical moderator for two reasons. First, the examination of any differences between the two models was exploratory. Second, the sample size was too undersized to allow for a full-moderated mediation analysis, and a lack of statistical power was expected. After splitting the file, for both the married and unmarried groups, two separate mediation analyses (one for religious identification and one for religious introjection) were conducted utilizing the INDIRECT SPSS macro (Preacher and Hayes 2004) during which the sample was bootstrapped at 5000 to increase power lacking from a moderate sample size without violating assumptions of normality. Importantly, bootstrapping is considered a valid and preferred method when testing indirect or mediated effects (Hayes 2009). See Table 1 for correlation coefficients between each of the constructs.

According to our hypothesized mediation model, if sexual guilt is a mediator between the two religiosity measures (i.e., religious identification and religious introjection) and sexual satisfaction, the data should produce the following results: (1) each religiosity measure should significantly predict sexual guilt (i.e., 'a' path)

Table 1 Correlational coefficients for constructs split by married and unmarried

Variables	Religious identification	Religious introjection	Sexual guilt	Sexual satisfaction	Married M (SD)
Religious identification	–	.65**	.39**	–.19*	2.85 (1.02)
Religious introjection	.67***	–	.51**	–.19*	1.48 (.69)
Sexual guilt	.45***	.50***	–	–.42** (1-tailed)	2.85 (1.03)
Sexual satisfaction	–.20*	–.17*	–.35**	–	6.22 (1.90)
Unmarried M (SD)	2.10 (1.00)	1.53 (.73)	2.90 (1.07)	6.18 (1.89)	

Coefficients for unmarried are mentioned in bold, coefficients for married are mentioned in italics

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

and sexual satisfaction (i.e., ‘c-prime’ path) separately; (2) sexual guilt should predict sexual satisfaction (i.e., ‘b’ path); and (3) the relationship between the religiosity measures and sexual satisfaction is diminished, in the opposite direction, or even disappears when sexual guilt is controlled for in the model (i.e., ‘c’ path). In all analyses, participant sex (coded as 0 for males, and 1 for females) and age were included as control variables. It should be noted that as one unmarried participant did not report sex, thus the final sample of unmarried participants totaled 135 individuals.

Unmarried

As expected, the relationship between religious identification and sexual satisfaction including sex guilt was significant for unmarried participants, $F_{(4,130)} = 7.32$, $p < .001$, $R^2 = .18$, $Adj. R^2 = .16$. The ‘a’ path between religious identification and sexual guilt was significant ($t = 4.91$, $p < .001$), the ‘b’ path between sexual guilt and sexual satisfaction was significant ($t = -4.69$, $p < .001$), and the total effect (i.e., ‘c’ path) of religious identification on sexual satisfaction was significant ($t = -2.18$, $p = .03$, $B = -.37$, $SE = .17$). Importantly, the direct effect of religious identification onto sexual satisfaction (‘c-prime’) was not significant ($t = -.39$, $p = .70$). A bias-corrected bootstrap indicated that the indirect effect was significant ($-.30 (.09)$, (95 % CI $[-.54, -.14]$). This suggests that, even though unmarried participants had overall less sex guilt than married participants, sexual guilt is an indirect only mediator (Zhao et al. 2010) between religious identification and sexual satisfaction for unmarried individuals. See Fig. 1 for coefficients and standard error in the main mediation pathways.

Additionally, our model of the relationship between religious introjection and sexual satisfaction for unmarried participants was significant, $F_{(4,130)} = 7.31$, $p < .001$, $R^2 = .18$, $Adj. R^2 = .16$. As in the previous analysis, the ‘a’ path between religious introjection and sexual guilt was significant ($t = 6.77$, $p < .001$), the ‘b’

path between sexual guilt and sexual satisfaction was significant ($t = -4.48, p < .001$), and the total effect (i.e., ‘c’ path) of religious introjection on sexual satisfaction was significant ($B = -.51, SE = .24, t = -2.11, p = .037$). Finally, the direct effect of religious introjection onto sexual satisfaction (‘c-prime’) was not significant ($t = .34, p = .74$). A bias-corrected bootstrap indicated that the indirect effect was significant ($-.60 (.17), 95\% \text{ CI } [-.98, -.29]$). This suggests that sexual guilt is also an indirect only mediator (Zhao et al. 2010) between religious introjection and sexual satisfaction for unmarried individuals. See Fig. 1 for coefficients and standard error in the main mediation pathways.

Married

Using the same analysis but conducted with the married participants, the models change dramatically. First, the overall model was significant, $F_{(4,95)} = 3.57, p = .009, R^2 = .13, \text{ Adj. } R^2 = .09$. However, our hypothesized mediation did not occur: while the pathway between religious identification and sex guilt (i.e., the ‘a’ path) was significant ($t = 6.52, p < .001$), the ‘b’ pathway between sex guilt and sexual satisfaction was not significant ($t = 1.61, p = .11$), nor was the total effect (i.e., ‘c’ path) between religious identification and sexual satisfaction ($B = .17, SE = .22, t = .79, p = .43$), nor the ‘c-prime’ path ($t = -.06, p = .82$). Furthermore, a bias-corrected bootstrap indicated that the indirect effect was not significant as the confidence intervals crossed 0, $(.23(.14), 95\% \text{ CI } [-.04, .52])$. In simpler terms, these findings suggest that although religious identification may be related to sex guilt, religious identification does not predict sexual satisfaction for married participants, neither directly nor indirectly with sex guilt acting as a mediating variable.

On the other hand, religious introjection resulted in an overall significant model $F_{(4, 95)} = 4.66, p = .001, R^2 = .16, \text{ Adj. } R^2 = .13$. The ‘a’ pathway between religious introjection and sexual guilt was significant ($t = 4.23, p < .001$), as was the ‘b’ path between sexual guilt and sexual satisfaction ($t = 2.44, p = .017$). However, the total effect (‘c’ path) was not significant ($B = -.33, SE = .31, t = -1.06, p = .294$), and the ‘c-prime’ path of religious introjection on sexual

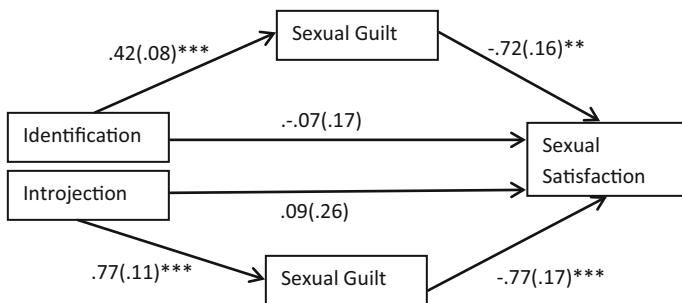


Fig. 1 Coefficients (SE) for religiosity on sexual satisfaction through sexual guilt for unmarried individuals, after controlling for age and sex. * $p < .05$; ** $p < .01$; *** $p < .001$

satisfaction as mediated by sexual guilt only approached significance (as it is presented with a two-tailed p value), $t = -1.96$, $p = .053$). A bias-corrected bootstrap indicated that the indirect effect was significant (.32(.14), 95 % CI [.14, .68]). This suggests that on the whole this is a non-mediated model. Even if we take into account that a one-tailed p value would be significant for the ‘c-prime’ pathway, the model is still a direct-only non-mediated model (Zhao et al. 2010) for married individuals. That is, the relationship between religious introjection and sexual satisfaction is not directly related to the individual’s level of sexual guilt for married individuals. See Fig. 2 for coefficients and standard errors.

Discussion

The current study adds considerably to the current literature about the controversial and even contradictory relationship between religiosity and sexual satisfaction. As was discussed above, the previous research on the relationship between religiosity and sexual satisfaction has not indicated that there is a clear or direct path between the two variables. In other words, the pre-existing research does not lead to a consensus about how religiosity influences sexual satisfaction (Ashdown et al. 2011). We hypothesized that some of this disagreement may be due to the way that religiosity was measured and the possibility of a potential mediator, namely sexual guilt. Thus, the current research explored religious internalization (rather than simply attendance at religious services) as a predictor of sexual satisfaction while examining sex guilt as a potential mediator. Additionally, we examined the data separately by marital status (i.e., married or unmarried) as it was expected to be a potential variable of change. As it was initially unclear what these two models might look like, we explored whether the mediation model would look different between these two groups. In general, our hypotheses and general exploratory expectations were supported.

Our findings indicate that internalization of religion negatively predicts sexual satisfaction, such that the more unmarried individuals internalize their religious teachings, the less sexually satisfied they are. This is true for both religious

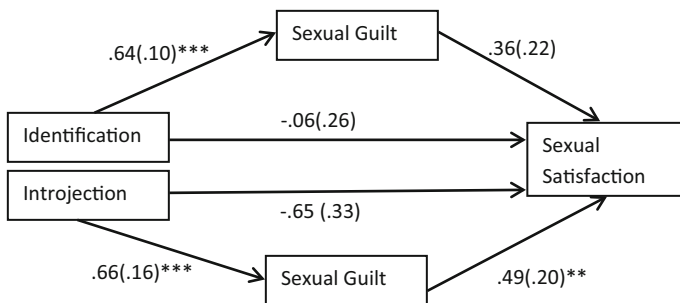


Fig. 2 Coefficients (SE) for religiosity on sexual satisfaction through sexual guilt for married individuals, controlling for age and sex. * $p < .05$; ** $p < .01$; *** $p < .001$

identification (e.g., internalizing religious precepts because of intrinsic motivations) and religious introjection (e.g., internalizing religious precepts because of extrinsic motivations). Because both models are mediated by sex guilt, this suggests that the more unmarried people internalize religious beliefs, the more guilt they may experience about their sexual behavior and the lower their sexual satisfaction. That is, whether unmarried individuals internalize religious beliefs because they feel that they are ‘supposed to’ or because they genuinely believe that is the best way to live, they feel guilt, which in turn negatively relates to their sexual satisfaction, and possibly relationship satisfaction (Laumann et al. 1994).

Interestingly, all mediation effects that were present for unmarried participants disappeared from the model when the analysis was conducted with married people. In fact, if one examines the coefficients in the married participant’s models closely, it becomes clear that both religious identification and religious introjection predict higher levels of sexual guilt. However, that appears to be where the model falls apart. One potential explanation for this may lie in the notion of a sacred marital bed, something we suggest referring to as the *sacred bed phenomenon*. In all three of the Abrahamic religions (i.e., Christianity, Judaism, and Islam), premarital sexual behaviors are taught as inappropriate or even sinful (Harris et al. 2008; Rosenbaum and Weathersbee 2013). However, once married, those same sexual behaviors are often re-labeled as appropriate and even holy. For example, the Bible (Hebrews 13:4; KJV) states that marriage should be held in honor, and the bed “undefiled”. For many Abrahamic religions, a part of internalizing religious beliefs about sexuality may also consist of internalizing the belief that just as the marriage is sacred, the marital bed is also sacred, or that what occurs between a husband and wife in the bedroom is sacred. This is an important belief because it allows one’s overall sexual satisfaction in the marital relationship to be protected from whatever sexual guilt the married individual feels, whether that guilt is from the past (e.g., relationships, behaviors) or even the present. As the vast majority of our participants reported affiliation with the Abrahamic religions, it is then not surprising that these married individuals did not connect sexual guilt with sexual satisfaction in their current marital beds. Future research should further explore this idea by examining denominational differences in these constructs. For example, are certain sects or denominations of Christianity more or less likely to hold beliefs about the *sacred bed phenomenon*? With the increase of religiosity after marriage and the birth of children (Edgell 2005), it would also be useful to explore this longitudinally to explore whether and how beliefs about the *sacred bed* change pre- and post-marriage.

It should also be noted that the pathway between sexual guilt and sexual satisfaction for married people was trending toward significance, even if the overall model was not. Perhaps this is explained by the notion that because those individuals are in a marriage, they have the overall marital satisfaction needed to aid them in overcoming any sexual guilt effects (and thus potential for lower sexual satisfaction) they may feel. Past studies have indicated that non-sexual aspects of one’s marital relationship can predict increased sexual satisfaction (Young et al. 2000) —and that religiosity itself predicts greater marital satisfaction (Sullivan 2001), especially shared religious beliefs (Sherkat and Ellison 1999). Future

research may want to look at additional potential mediators, or even suppressors, that may exist between sexual guilt and sexual satisfaction for married individuals—these might include ethnic, gender, and cultural identity, adherence to specific religious doctrines, same- versus mixed-faith unions, previous sexual experience, current sexual behaviors, or socio-sexual orientation.

The final mediation model for married individuals, with religious introjection as the predicting variable, indicated something unexpected and interesting. It appears that religious introjection predicts higher levels of sex guilt, which predicts higher levels of sexual satisfaction. This finding is complicated to explain. And to add to the complexity, the total effect was not significant although the direct effect was trending toward significance (two-tailed). This suggests that perhaps another mediator is present (Zhao et al. 2010) in the relationship between introjection and satisfaction. There may actually be an overall relationship between religious introjection and sexual satisfaction for married individuals, even in the absence of a significant total effect. This could be explained by considering that religious introjection has an effect on sexual satisfaction through simultaneous multiple indirect effects—at least one of which could be sex guilt (Hayes 2009; Mathieu and Taylor 2006). As Hayes (2009) explains, a variable can have an effect on another variable through multiple paths of impact, some of which might not be included in the currently proposed model. In other words, a relationship between religious introjection and sexual satisfaction could exist, though that relationship exists through various indirect paths rather than only the one that we chose to investigate. To give an example, a personality variable such as socio-sexual orientation, that is, the amount of comfort one has with the idea of sex while not in a committed relationship (Simpson and Gangestad 1991) may also play a role in the relationship between sexual guilt and sexual satisfaction. Put into the model at the same time, these two variables (sexual guilt and socio-sexual orientation) could combine to create a significant overall effect without either one indicating a significant direct effect. Of course, this (and other possible indirect paths) is something that future research could examine.

Moreover, this again could be related to the *sacred bed phenomenon*. Individuals high in religious introjection may resent any sexual guilt they feel (i.e., psychological reactance to the notion of religiosity they have internalized because they feel they ‘should’), and thus rely on other constructs (e.g., defense mechanisms) to mitigate those feelings of guilt—adding additional indirect paths to the religiosity-sexual satisfaction model. Future research should investigate whether this particular relationship occurs in other populations as well as explore what constitutes the other indirect pathways in the model, such as psychological reactance. Perhaps this could also explain some of the contradictory findings in past literature. Future research should also more fully explore and, if possible, determine how to measure or even predict the *sacred bed phenomenon* so that it can be used in future predictive studies of sexual satisfaction and religiosity.

As with any study, this one has some limitations. First, the sample was collected online, thus, there is very little control over the participants’ environment. This could be especially detrimental if the individual is completing the survey in the presence of his or her partner. This might explain the lack of effects in the married population, as

they may not have been able to be honest about their sexual satisfaction with the spouse in the room. On the other hand, this postulation could also apply for the unmarried population, as they were also in relationships. Relatedly, our sample size, while acceptable, is relatively small for our methods of analysis. Larger samples could be used to verify these initial findings.

One potential limitation, at least at face value, in this study could relate to the religious affiliations of the participants. The vast majority (approximately 80 %) of our participants was adherents of one of the three main Abrahamic traditions—and almost half of those participants claimed a Christian denomination. Although it would seem counterintuitive to include individuals who are not ensconced in one of these three religious branches, allowing these participants to remain in the analysis allows for more variance in the measure. That is, one could logically argue that atheists would probably have lower internalization of Christian beliefs than someone who claims Catholicism. Thus, inclusion of these participants is therefore viewed as strength rather than a limitation. However, it could be very fruitful for future studies to examine non-Abrahamic (both religious and non-religious) samples to see if the notion of the *sacred bed phenomenon* would apply.

Second, a major difference between the two populations was relationship length. The average marriage length was 10 years, while the average relationship length in the unmarried population was approximately two and a half years. Preliminary analyses indicated there were no differences in overall sexual satisfaction between the two groups. However, in the future, a longitudinal study that examines the links between religiosity and sexual satisfaction as well as possible mediators such as sex guilt as the relationship progresses could be immensely informative. Especially longitudinal research that examines the relationship prior to and following marriage could allow researchers to examine a within-groups shift in sex guilt effects on sexual satisfaction.

Finally, the Revised Mosher Sex-Guilt Scale (Janda and Bazemore 2011), as mentioned above, does not measure guilt relating from specific sexual behaviors (e.g., oral sex) or a specific sexual event (e.g., losing one's virginity). That is, the measure is not as precise as could be ideal. In fact, the use of this particular measure may have muted some of our effects. However, the measure does have strong convergent validity and correlates as expected with related constructs such as abstaining from pre-marital sex (Janda and Bazemore 2011), and measures one's attitudes toward behaviors that are connected with experienced sexual guilt (e.g., trying to forget sexual dreams). Future studies could incorporate the use of a scale that measures guilt related to specific sexual behaviors or events. Such a measure might further elucidate the specific mechanisms at work in the relationship between sexual satisfaction and religiosity.

The current research greatly extends the literature and further elucidates how complex this relationship is. As research on this topic continues, information that provides a more complete understanding of the predictive model between religion and sexual satisfaction is needed. This will aid both researchers and clinicians in their goals toward supporting and increasing the strength and satisfaction of people's intimate relationships. Moreover, further investigations of findings that might be related to the notion of the *sacred bed phenomenon* could be useful for

clinical applications, as well as highlighting some important avenues for future religious and relationship research.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Standard All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Appendix

Christian Religious Internalization Scale (Ryan et al. 1993)

Please read the following statements and then use the 4-point scale to indicate how true each statement is when applied to you. Simply write the number that corresponds to the correct response in the line provided.

- 1 = Never true
- 2 = Seldom true
- 3 = Often true
- 4 = Always true

1. I pray because I enjoy it. _____
2. I turn to God because it is satisfying. _____
3. I turn to God because I enjoy spending time with Him. _____
4. I share my faith because God is important to me and I'd like others to know Him, too. _____
5. I pray because I find it satisfying. _____
6. I attend church because by going I learn new things. _____
7. I share my faith because I want other Christians to approve of me. _____
8. I attend church because others would disapprove if I didn't. _____
9. I turn to God because I'd feel guilty if I didn't. _____
10. I pray because God would disapprove if I didn't. _____
11. I attend church because one is supposed to go. _____
12. I actively share my faith because I'd feel bad about myself if I didn't. _____

Revised Mosher Sex-Guilt Scale (Janda and Bazemore 2011)

Please read the following statements and then use the 7-point scale to indicate how true each statement is when applied to you. Simply write the number that corresponds to the correct response in the line provided.

- 1 = Very strongly disagree
- 2 = Moderately disagree
- 3 = Slightly disagree
- 4 = Neither agree or disagree
- 5 = Slightly agree
- 6 = Moderately agree
- 7 = Very Strongly Agree

1. Masturbation helps one feel eased and relaxed. _____*
2. Sex relations before marriage are good, in my opinion. _____ *
3. Unusual sex practices don't interest me. _____
4. When I have sexual dreams I try to forget them. _____
5. "Dirty" jokes in mixed company are in bad taste. _____
6. When I have sexual desires I enjoy them like all healthy human beings.
_____*
7. Unusual sex practices are dangerous to one's health and mental conditions.

8. Sex relations before marriage help people adjust. _____*
9. Sex relations before marriage should not be recommended. _____
10. Unusual sex practices are all right if both partners agree. _____*

Note: Items with an (*) are reverse scored so that higher numbers indicate more guilt.

Sexual Satisfaction Scale (Revision of Rusbult et al. 1998; see Ashdown et al. 2011)

Please indicate the degree to which you agree with each of the following statements regarding your current relationship (circle an answer for each item).

Please indicate the degree to which you agree with each of the following statements regarding your current relationship (circle an answer for each item).

1. I feel satisfied with my sex life (please circle a number).

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

2. My sexual relationship is much better than others' sexual relationships.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

3. I wish my sexual relationship was better.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

4. My sexual relationship is close to ideal.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

5. Our sexual relationship makes me very happy.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

6. My current sexual relationship does not fully satisfy my sexual needs.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

7. Our sexual relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All				Somewhat				Completely

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