

THE PROTECTIVE IMPACT OF RELIGIOSITY ON RISKY SEXUAL BEHAVIORS: THE CONFOUNDING ROLES OF SEX, AGE AND EXTRAVERSION TRAIT

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Abstract

Previous studies have demonstrated religiosity as a protective factor in risky sexual behaviors among adolescents and young adults. However, it is suggested in the present study, that the negative relationship established between religiosity and risky sexual behavior may be a spurious one considering the interconnectedness of gender, age and extraversion with these variables. In this regard, this study examined whether the negative relationship between religiosity and risky sexual behavior would exist or disappear after controlling the confound roles of sex, age and extraversion trait. Using the multi-stage sampling method, a sample of 252 undergraduates (Males = 130; Females = 122) of Federal University Oye-Ekiti, Nigeria with a mean age of 20.79 years completed three validated self-report instruments measuring religious faith, perceived social support, personality and risky sexual behaviors. Data were analyzed using hierarchical multiple regression. Results indicated that gender [$\beta = .28, p < .0001$], age [$\beta = .16, p = .005$] and extroversion [$\beta = .15, p = .013$] predicted RSB [$F(5, 244) = 14.96, p < .0001, R^2 = .24$]. After controlling for gender, age and extraversion, increase in religious faith still predicted risky sexual behaviors [$\beta = -.23, p < .0001$]. This suggests that religious faith may actually serve as an aversion to engaging in risky sexual behaviors among adolescents and young adults. Therefore, interventions for premarital sex and risky sexual behaviors should be more intensified by religious organizations in order to prevent the spread of sexually transmitted infections, out of wedlock births and abortions.

Key words: Religiosity, Risky sexual behaviour, Age, Sex

INTRODUCTION

Abstinence is regarded as the best way of preventing the spread of sexually transmitted infections (STIs), unwanted pregnancies and abortions among adolescents/unmarried (Alo & Akinde, 2010). The principal antidote for pre-marital sex, STIs and out-of-wedlock births in the primitive era was abstinence. In 1900, evidence showed that the teenage period was devoid of pre-marital sex, and if it ever occurs, an insignificant rate of 6% was recorded (Greenwood & Guner, 2008). The Yoruba culture in the earliest times maintained a significant level of control on pre-marital sex in which rarely can one find teenagers and unmarried young adults that engage in sexual intercourse before marriage (Idoko, 2015; Fadipe, cited in Alaba, 2004). As a result of drastic social change- driven by education and technological evolution of contraception in modern times- there occur a dramatic shift to about 75% of teenagers involved in premarital sex by 2002, accompanied by significant rise in multiple sexual partners (Greenwood & Guner, 2008; Alaba, 2004). This current state of affairs was replicated in a local sample of 2,500 women from South-West Nigeria, where a prevalence of 84% was obtained for pre-marital sex before the age of 20 (Alo & Akinde, 2010).

The evolution of modern contraception necessitated diminished proscription of pre-marital sex by parents and the society because contraception increases the failure

rate of becoming pregnant and contracting STIs (Fernández-Villaverde, Greenwood & Guner, 2010; Delcampo, Sporakowski & Delcampo, 2010). Since improvements in education and technology of contraception perhaps have up surged involvements in premarital sex with a significant reduction in risks associated with it (Udigwe, Adogu, Nwabueze, Adinma, Ubajaka & Onwasigwe, 2014), it is expected that teenagers and unmarried young adults would effectively utilize contraception and other safe sex practices to forestall the attendant consequences of engaging in premarital sexual relations.

However, the reverse seems to be the case. In spite of the exposure of adolescents and young adults to media messages on safe sexual behaviors and relative availability of contraception (at almost a free rate), there seems to be a continual rise in cases of unwanted pregnancies and contraction of STIs such as HIV/AIDS, gonorrhoeae and syphilis (“Ndeble,” n.d.; Jaccard, 2009; Bachanas, Morris, Lewis-Gess, Sarett-Cuasay, Sirl, Reis & Sawyer, 2002). It has been reported that a considerable number of adolescents engage in risky sexual behavior characterized by unprotected sexual intercourse, having multiple sexual partners and use of psychoactive drugs to enhance sexual performance (Shore & Shunu, 2017; Ontieno, 2016; Famutimi & Oyetunde, 2014; Robinson, 1999 cited in Ekwueme, 2012). This may have

accounted for why adolescents and young adults (15-24 years) constitute 50% of individuals diagnosed with new STIs (Kagen, 2015). To this segment of the population, it is perhaps believed that engaging in sexual risk taking allows them to experience heightened euphoria in the sexual behavior process (Romero-Estudillo, González-Jiménez, Mesa-Franco & García-García, 2014).

Past studies have demonstrated the predicting factors of risky sexual behaviors. Among these are substance use, peer influence, pornography, perceived family control (Shore & Shunu, 2017; Nwankwo & Nwoke, 2009; Bachanas et al. 2002), emotional intelligence, religiosity, self-esteem, media (Ugoji, 2012; “Jaccard,” n.d.), extraversion trait (Otieno, 2016). In the research literature, religiosity levels of young adults have also been found to be a protective factor to risky sexual behavior. Specifically, the more adolescents and young adults engaged in religious activities, there is a corresponding decrease in sexual intercourse and risks associated with it (Rostosky, Regenerus, & Wright, 2003; Miller & Gur; cited in “Jaccard,” n.d.). However, this relationship may be a spurious one (“Jaccard,” n.d.). Research has demonstrated that as adolescents get older, many reduce their participation in religious activities while at the same time becoming more involved in sex with its attendant risks, a condition which possibly may have nothing to do with drop in religiosity level

(“Jaccard,” n.d.). The established negative association between religiosity and risky sexual behavior, may partly or largely, be accounted for by the growing age of adolescents. Hence, unless age is controlled for in the relationship between religiosity and risky sexual behavior, we may not validly conclude that religiosity is a protective factor in risky sexual behavior among adolescents.

In similar manner, the influence of sex on risky sexual behavior may also account for the inverse relationship between religiosity and risky sexual behavior. Studies have demonstrated that male adolescents may be more prone to risky sexual behaviors than their female counterparts (Odimegwu & Somefun, 2017, Castillo-Arcos, Alvarez-Aguirre, Bañuelos-Barrera, Valle-Solís, Valdez-Montero, & Kantún-Marín 2017; Ogunleye, Omojola, Abikoye & Oke, 2015; Romero-Estudillo et al., 2014;). On the other hand, females have been generally found to be more involved in religious activities than males (Carapina, 2015; Schnabel, 2015; Henriques, 2014). With these, the level of the religiosity for the female sample will be inversely related with RSB (high religiosity/low RSB); while the same inverse pattern of relationship will be obtained for male sample (low religiosity/high RSB). Through this way, the negative relationship between religiosity and RSB may become spurious since the basis for the connection was probably gender. Again, there may need to

control for the influence of sex in the relationship between religiosity and RSB.

Apart from sex and age, personality characteristics may also account for the direction of relationship between religiosity and RSB. One personality trait that has consistently demonstrated a direct relationship with RSB is the extraversion trait. Several research outcomes have shown that adolescent/young adults with greater composition of extraversion tend to get more involved in risky sexual behaviors (Morales, 2017; Otieno, 2016; Durvasula & Reagan, 2015; McGhee, Ehrler & Buckhalt, 2012). However, some studies have demonstrated a relationship between extraversion trait and religiosity. In particular, it is documented that individuals low on the extraversion trait are more religious than those with high extraversion; thus making extraversion an aversion to religiosity (Sontakke, 2017; Mousavimoghadam, 2015; Hills, Francis, Argyle & Jackson, 2004). By these interconnections, the negative relationship between religiosity and RSB becomes questionable since individuals high on extraversion will be low on religiosity and thus, predisposing high RSB. Hence, it is also important to control for the influence of extraversion trait when examining the relationship between religiosity and risky sexual behavior.

From the foregoing, the objective of this study centers on examining whether or not

the protective influence of religiosity on risky sexual behavior is confounded by sex, age and extraversion trait. The outcome of this work will enhance a clearer understanding of the part played by sex, age and extraversion trait in the inverse relationship between religiosity and risky sexual behaviors. It will also help us make certain our knowledge of the protective impact of religiosity on risky sexual behavior after controlling for sex, age and extraversion trait.

METHOD

Sample and procedure

Adopting the ex-post-facto research design, two hundred and fifty two, first and second year undergraduates (130 males, 122 females) of Federal University Oye-Ekiti, Ekiti State, Nigeria were selected by means of the multi-stage sampling method to participate in the study. Ages ranged from 17-28 years; 51% of participants were below 21 years, 49% were above 20 years of age while the mean age was 21 years (SD = 2.5).

Before commencement of scale administration, study procedures were approved by the headship of Department of Psychology, Federal University of Oye-Ekiti. At the administration of research instruments, informed consent of participants was obtained and confidentiality of responses was assured. Scales were administered to students during

free periods in the classrooms and retrieval of completed research instruments was done immediately.

Measures

Risky Sexual Behavior Scale (RSBS): The RSBS consists of 8-items designed by Oliver & Sweeney (2006) to measure facets of sexual risk taking behaviours that endanger individuals to contracting STIs. Critical risk taking behaviors assessed by the RSBS include number of sexual partners, number of one-night stands, regret of casual one-time encounter, unprotected sex with casual partners, number of multiple sexual partners at a time, unfaithfulness to regular partners, frequency in the use of condoms with regular and casual partners. Sample items include “In the last twelve months, approximately how many sexual partners have you had?” “In the last twelve months, have you had unprotected sex with a casual or one time partner?” e.t.c. Items 1 and 2 of the RSBS are scored on a response format ranging from (0-15), where response of 0 = 0; 1 = 1; 2-4 = 2; 5-9 = 3; 10-14 = 4; 15 = 5. Items 3-6 are scored on a “Yes” (1) or “No” (0) format while items 7 and 8 are scored on a Likert format ranging from Never (4) to Always (0). Individual scores on each item are summed to obtain a total score for RSBS. High scores reflect increased sexual risk taking behaviors. The RSBS has been found to be a reliable measure of assessing sexual risk taking behaviors in local sample (Ogunleye et al., 2015).

The Santa Clara Strength of Religious Faith Questionnaire (SCSRFQ): The SCSRFQ is a 10-item self-report instrument developed by Plante & Boccaccini (1997 a, b) to assess level of religiosity and its potency in individual lives. The SCSRFQ measures religious faith regardless of one's religious affiliation or denomination within both clinical and non clinical populations on a 4-point Likert response format, ranging from (1) Strongly disagree to (4) Strongly agree. SCSRFQ sample items include “I pray daily,” “I look to my faith as a source of inspiration,” “My relationship with God is extremely important to me” e.t.c. The authors provided a Cronbach alpha coefficient ranging between .94 and .97 for the SCSRFQ (Plante & Boccaccini, 1997 a, b) while the present study obtained an internal consistency coefficient of .83. The scale has also been found to be a valid measure of religiosity (Plante and Boccaccini (1997a; Plante, Yancey, Sherman, Guertin, and Partdini, 1999). High scores on the scale denote high level of religious faith.

Big Five Inventory-10 (BFI-10): The BFI-10 is a ten-item scale designed to measure five different personality dimensions (Rammstedt & John, 2007). The personality dimensions measured are extraversion (*sociable vs reserve*), agreeableness (*trusting vs suspicious*), conscientiousness (*organized vs disorganized; competent vs incompetent*), neuroticism (*anxious vs calm*) and openness to experience (*prefers*

variety vs prefers routine) (Costa & McCrae, 1985). The scale was derived from the 44 test items of the Big Five Inventory (BFI) (John & Srivastava, 1999). To demonstrate how the BFI-10 represent the full scale (BFI-44), part-whole correlations of the short scales with the full scales was computed using three large samples and the overall mean correlation was .83 (Rammstedt & John, 2007).

A test- retest reliability procedure which spanned between 6-8weeks gave rise to an average .75 for the different BFI dimensions. The convergent validity correlations with the NEO-PI-R (Costa & McCrae, 1992) domain scales averaged .67 across Big Five domains (Rammstedt & John, 2007). Olawa (2016) examined the five-factor model of the BFI-10 using confirmatory factor analysis. The fit indices showed that the five factor model was an acceptable explanation of the sample data ($\chi^2_{(25)} = 57.85, p < .0001$; GFI = .98; RMSEA = .05, SRMR = .04)

The BFI-10 is scored on a 5 point likert scale format ranging from disagree strongly (1) to agree strongly. On the scale the item number of each domain of the BFI-10 is presented below: Extraversion: 1R, 6; Agreeableness: 2, 7R; Conscientiousness: 3R, 8; Neuroticism: 4R, 9 Openness: 5R, 10. (R = item is reversed-scored).

Data analysis

Frequencies and cross tabulations gave the

prevalence of risky sexual behaviors. Bivariate analysis was used to establish relationship among study variables. Hierarchical multiple regression was used to investigate the predictive ability of religiosity on risky sexual while controlling for sex, age and personality traits.

Results

Table 1 gives the frequencies for risky sexual behavior by gender and for total sample. 46% of participants reported that they have sexual partners out of which 26% had one sexual partner, 17% had up to four sexual partners while 3% had up to nine sexual partners. Among males, 32% had more than one sexual partner as compared with females where only 7% had more than one sexual partner. Only about 20% of those sexually active have had one-night stand; however, one-night stand appears to be more common among males (32%) than females (7%). Involvement in unprotected sex with casual partners seems frequent as 48% of sexually active participants have engaged in unprotected sexual intercourse, and this is quite common to both males (57%) and females (39%). Twenty six percent (26%) among the sexually active participants reported that they have had multiple sexual partners concurrently; however males (30%) engage in this twice as females (17%). Up to 38% of sexually active participants have been unfaithful (i.e. shown infidelity) to their regular sexual partners; again more common among males (48%) than females (22%). As regards the

frequency of condom use with regular sexual partners, 28% reported that they use condom always, 35% did not use condom at all while 37% were inconsistent with condom use. For casual partners, only 15% reported that they use condom always, 50% never used condom while 34% did not use condom regularly.

Table 1: Frequencies of risky sexual behaviors by gender and for total sample

risky sexual behaviors	n (%)	n (%)	N (%)
	Male n = 130 (52)	Female n = 122 (48)	Total N = 252
Number of sexual partners			
None	54 (42)	81 (66)	135 (54)
One	34 (26)	32 (26)	66 (26)
Up to four	35 (27)	8 (6)	43 (17)
Up to nine	7 (5)	1 (1)	8 (3)
Number of one-night stands			
None	89 (69)	114 (93)	203 (81)
1	17 (13)	3 (3)	20 (8)
Up to 4	20 (16)	5 (4)	25 (10)
Up to 9	4 (3)	0 (0)	4
Regretted casual one-time encounters			
No	48 (63)	30 (73)	78 (67)
Yes	28 (37)	11 (27)	39 (33)
Sexual relation with casual partner			
Protected	36 (47)	25 (61)	61 (52)
Unprotected	40 (57)	16 (39)	56 (48)
Having multiple sexual partners at the same time			
No	53 (70)	34 (83)	87 (74)
Yes	23 (30)	7 (17)	30 (26)
Fidelity regular sexual partner			
Faithful	40 (53)	32 (78)	72 (62)
Unfaithful	36 (48)	9 (22)	45 (38)
Frequency condom use with regular partner			
Never	31 (41)	10 (24)	41 (35)
Sometimes	9 (12)	4 (10)	13 (11)
Often	6 (8)	1 (2)	7 (6)
Almost always	17 (22)	6 (15)	23 (20)
Always	13 (17)	20 (49)	33 (28)
Frequency of condom use with casual partner			
Never	41 (54)	18 (44)	59 (50)
Sometimes	6 (8)	5 (12)	11 (9)
Often	6 (8)	1 (2)	7 (6)
Almost always	14 (18)	8 (20)	22 (19)
Always	9 (12)	9 (22)	18 (15)

Table 2 gives the mean, standard deviation scores and correlation coefficients among study variables. The male sex was more associated with risky sexual behavior ($r_{pb} = .33, p < .0001$). Risky sexual behaviors was significantly and positively correlated with age ($r = .24, p < .0001$) and extraversion trait ($r = .18, p = .004$), but negatively correlated with religious faith ($r = -.28, p < .0001$) and agreeableness trait ($r = -.15, p = .015$).

Table 2: Mean, standard deviation scores and correlations among study variable

Variables	M (SD)	1	2	3	4	5	6	7	8
N = 252									
1. Risky sexual behavior	4.27 (5.60)	-							
2. Sex	-	.33**	-						
3. Age	20.79 (2.48)	.24**	.24**	-					
4. Religious faith	35.30 (3.86)	-.28**	-.05	-.01	-				
5. Extraversion	4.60 (1.38)	.18**	.03	.02	-.16**	-			
6. Agreeableness	6.07 (1.22)	-.15*	.01	-.05	.01	-.16*	-		
7. Conscientiousness	5.76 (1.26)	.04	.15	.19	.19**	-.02	.11	-	
8. Neuroticism	4.88 (1.26)	.01	-.07	-.09	-.04	-.02	-.11	-.14*	-
9. Openness	5.77 (1.06)	.02	.06	-.05	-.01	-.08	.20**	.11	-.06

* $p < 0.05$ (2-tailed) ** $p < 0.001$ (2-tailed)
 Sex = Male (1), Female (0)

Religious faith and extraversion were significantly and negatively related ($r = -.16, p = .009$). However, risky sexual behaviors were not significantly related with conscientiousness ($r = .04, p = .58$),

neuroticism ($r = .01, p = .89$) and openness to experience ($r = .02, p = .71$). Contrary to expectation, age ($r = -.01, p = .83$) and sex ($r_{pb} = -.05, p = .48$) were not significantly related to religiosity.

Table 3: Hierarchical multiple regression for risky sexual behavior

	R	R ²	? R ²	F	t
Step 1	.36	.13	-	18.53***	
Sex					.28*** 4.60
Age					.17** 2.81
Step 2	.42	.18	.05	13.02***	
Sex					.28*** 4.64
Age					.16** 2.71
Extraversion					.15* 2.51
Agreeableness					-.13* -2.23
Step 3	.48	.24	.06	14.96***	
Sex					.27*** 4.68
Age					.16** 2.81
Extraversion					.11 1.87
Agreeableness					-.13* -2.30
Religious faith					-.25*** -4.35

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

to experience ($r = .02, p = .71$). Contrary to expectation, age ($r = -.01, p = .83$) and sex ($r_{pb} = -.05, p = .48$) were not significantly related to religiosity.

Table 3 presents the hierarchical multiple regression for risky sexual behavior. In the first step of hierarchical multiple regression, two predictors were entered: sex and age. This model was statistically significant $F(2, 247) = 18.53; p < .0001$ and explained 13% of variance in risky sexual behavior. Independently, sex [$\beta = .28, p < .0001$] and age [$\beta = .17, p = .005$] made a significant unique contribution to the model. After entry of extraversion and agreeableness traits at Step 2 the total variance explained by the model as a whole was 18% ($F(4, 245) = 13.02; p < .0001$). Independently, extraversion [$\beta = .15, p = .013$] agreeableness [$\beta = -.13, p = .027$] also predicted risky sexual behavior. The introduction of extraversion and agreeableness explained additional 5% of variance in risky sexual behavior, after controlling for sex and age ($R^2 \text{ Change} = .05; F(2, 245) = 6.66; p = .002$). The entry of religious faith in the final step gave a total variance of 24% ($F(5, 244) = 14.96; \beta = -.25, p < .0001$). The introduction of religious faith explained additional 6% of variance in risky sexual behavior, after controlling for sex, age, extraversion and agreeableness ($R^2 \text{ Change} = .06; F(1, 244) = 6.66; p < .0001$). In the final adjusted model, four out of five predictor variables were statistically significant, with sex recording the highest Beta value ($\beta = .27, p$

$< .0001$) followed by religious faith ($\beta = -.25, p < .0001$), age ($\beta = .16, p = .005$) and agreeableness ($\beta = -.13, p = .022$), with extraversion ($\beta = -.11, p = .062$) becoming an insignificant predictor of risky sexual behavior.

DISCUSSIONS

This study assessed whether the negative relationship between religiosity and risky sexual behaviors was a spurious one considering the interconnections of sex, age and extraversion trait. In addition, the prevalence of risky sexual behaviors in study sample for both males and females were reported. As in earlier studies (Ugoji, 2012; “Jaccard,” n.d.), an inverse relationship was found between religiosity and risky sexual behaviors. This confirms previous findings that demonstrated a strong belief in God and adherence to religious laws and precepts may serve as deterrent to engaging in premarital sexual relations and risky sexual behaviors. Apart from religiosity, this study also found that sex, age, extraversion and agreeableness traits were also predictive factors of risky sexual behaviors among adolescents and young adults. Specifically, the male sex was more associated with engaging in risk sexual behaviors. Higher prevalence was found for males than females in all the 8 dimensions of risky sexual behaviors, in which differences were more reflected in having multiple sexual partners and one-night stands. These differences may be explained by the expectation of the society

in expression of sexual urges and impulses for both males and females. While our society frown less at sexual promiscuity in males (through its formalization in polygyny), females are usually condemned, labeled and stigmatized for indiscriminate sexual behavior (Kreager & Staff, 2009). Alternatively, the difference in libido levels for the two sexes may also account for variation in risky sexual behaviors, for males have been found to possess higher libido than females (Beutel, StobelRichter, & Brahler, 2007; Peplau, 2003). However, in spite of the significant influence of sex on risky sexual behaviors, it did not suppress the relationship between religiosity and risky sexual behavior after being controlled in the regression model.

Corroborating previous studies (Rostosky, Regenerus, & Wright, 2003; “Jaccard,” n.d.), present findings suggest a positive association between age and risky sexual behaviors. This shows that adolescents tend to increase sexual behaviors as they grow older. The positive relationship between age and sexual risky behavior confirms the fact that the period of transition from adolescence to young adulthood is characterized by intense sexual impulse, fantasies and experimentation (Romer, 2010). Consequently at this period, young adults keep multiple sexual partners concurrently; fail to abstain from sexual intercourse, infrequently use condoms and other contraceptives. Like sex, age was not a confounding factor in the inverse

relationship between religiosity and risky sexual behaviors.

The positive association of the extraversion trait with risky sexual behavior was also confirmed. Similar to past studies, individuals with high composition of extraversion trait seem to involve more in sexual risk taking than introverts. This further confirms the notion that extroverts are high sensation seekers and explorers of the environment than introverts (Bennington-Castro, 2013). Thus, to “enjoy” sex better, extroverts probably seek more one night stands, keep multiple sexual partners concurrently and take greater risk by jettisoning the use of condoms and other contraceptives. Result also confirmed previous outcomes (Morales, 2017; Otieno, 2016) that demonstrated negative relationship between extraversion and religiosity. Although intuitively, being religious may enable extroverts to meet one of his/her social needs, however, religiosity also demands one to be reclusive, meditative and reflective in order to have personal times with God, thus limiting opportunity for socials. As a result, being religious may not be out rightly interesting to extroverts. Nevertheless, the control of the influence of extraversion did not suppress the negative relationship between religiosity and risky sexual behaviors. Instead, at the introduction of religiosity into the regression model, the earlier influence of extraversion on risky sexual behavior became non significant. This

suggests that religiosity may be a protective factor in the influence of extraversion trait on risky sexual behaviors.

Conclusion

This study confirmed that the protective impact of religiosity on risky sexual behavior was not confounded by sex, age and extraversion. Although, sex, age and extraversion trait significantly predicted risky sexual behavior; nonetheless, their influences were not overarching to make the negative relationship between religiosity and risky sexual behavior disappear. The implication of this finding is that, the protective influence of religiosity on risky sexual behavior may not be spurious in nature. This suggests that, living a religious life may help young adults avoid sexual risk taking and abstain from premarital sexual relations. Therefore, interventions for premarital sex and risky sexual behaviors should be more intensified by religious organizations in order to prevent the spread of sexually transmitted infections, out of wedlock births and abortions. Considering that the sample size of the present study is not robust enough to extend findings to the general population of adolescents and young adults, potential studies in this area may replicate this research in larger sample to further examine the confounding roles of sex, age and extraversion trait in the relationship between religiosity and risky sexual behaviors. Future studies can also investigate the moderate role of religiosity

in the risk impacts of sex, age and extraversion trait on risky sexual behaviors.

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