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Risky Behavior and Religiosity in Students

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Abstract

This study examined the relationship between religiosity and risky behavior in college students. A convenience sample of 31 students of at least 18 years of age from Southern Adventist University participated in this study. Participants completed a demographic questionnaire created by the researcher regarding gender, race, religious identification, and class standing in addition to the *Risky Behavior Questionnaire* (RBQ) (Weiss et al., 2018) and items from both the *Duke Religion Index* (DRI) (Koenig et al., 1997) and *The Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012). Results of the sample showed that when an individual's level of religiosity increases, their frequency in participation of risky behaviors decreases. However, these findings were not statistically significant. It was also determined that class standing, gender, and race do not significantly affect levels of religiosity and risky behavior among students. Because no findings were statistically significant, further research is needed to understand how religiosity and risky behavior are correlated and what other factors influence these variables.

Keywords: *religiosity*, *risky behaviors*, *religion*, *religiousness*, and *students*.

Risky Behavior and Religiosity in Students

During adolescence and young adulthood, individuals are more likely to engage in risky behaviors such as substance use, sexual promiscuity, and suicidal behavior. For example, two studies reported that among twelfth-grade students in 2009, 72.3% of them admitted to having used alcohol, 43.6% admitted having used cigarettes, and 42.0% admitted having used marijuana; also, 80% of U.S. college students reported having consumed alcohol and 51% reported having consumed illegal drugs (Mason & Spoth, 2011; Cole, Prassel, Keller, & Carlson, 2018). This phenomenon is important because risky behaviors can lead to detrimental consequences in physical, mental, and emotional health. Many research studies have examined the relationship between risky behaviors in students and other factors, one of them being religiosity.

The following literature review provides a background for the current study by exploring the relationship between religiosity and risky behaviors. This review is organized using the thematic principle, and, therefore, each section discusses religiosity as it is connected to one specific type of risky behavior: substance use, suicide, unsafe sexual practice, and eating disorders. The sources cited for the topic of this literature review were all peer-reviewed and gathered using EBSCOhost. The key terms used to search for the sources were *religiosity*, *risky behaviors*, *religion*, *spirituality*, *religiousness*, and *students*.

Substance Use and Religiosity

Religion can be defined as a structured system of beliefs, practices, rituals, and expressions intended to ease closeness to the sacred or transcendent; closely related, *spirituality* refers to a personal search for understanding of life's utmost questions and the significance and purpose of living (Bailey, McMinn, Peterson, & Gathercoal, 2018). Religion appears to be an

influence in every known culture and it can have a deep impact on the ways in which people think, feel, and act (DeWall et al., 2014).

Research has found that substance use among adolescent students poses a serious threat to their development. Specifically, both alcohol use and drug use can cause significant brain damage and disrupt adolescents' brain maturation process (Burris, Sauer, & Carlson, 2011; Mason & Spoth, 2011). Further, heavy substance use has been linked to unsafe sexual behavior, physical injury or altercation, addiction, reduced academic performance, health problems, illegal behavior, accidents, and even death (DeWall et al., 2014; Galbraith & Conner, 2014; Mason & Spoth, 2011). Because of the detrimental negative consequences, it has become increasingly vital to identify both risk and protective factors associated with substance use (Burris, Sauer, & Carlson, 2011). A wide range of empirical inquiry has suggested that religiousness is a protective factor against substance use (Burris et al., 2011; Cole et al., 2018; DeWall et al., 2014; Galbraith & Conner, 2014; Jankowski, Meca, Lui, & Zamboanga, 2018; Mason & Spoth, 2011; Rodriguez, Neighbors, & Foster, 2014).

Suicide and Religiosity

Suicidal behaviors and ideations can be a significant risky behavior in the lives of many students who are under much social and academic pressure. Bailey, McMinn, Peterson, and Gathercoal (2018) suggest that the possible effects of religiosity can vary based on racial group, culture, age, and psychological well-being. Further, Bailey et al. (2018) explain that religiosity and spirituality can serve as protective agents for depression, but that the relationship between religiosity and spirituality and suicide have revealed mixed findings. Religious involvement is associated with higher levels of life meaning, control, and comfort during stressful circumstances, and, therefore, could potentially be a protective factor for suicide; however, whether religion can serve as a protective factor against suicide depends on many factors

including hope for life after death, social support, and methods of religious coping (Bailey et al., 2018). *Religious coping* can be defined as using religious behaviors or beliefs to ease problem-solving in order to avoid or relieve negative emotional consequences of stressful events; religious coping can be either positive or negative (Bailey et al., 2018).

Bailey et al. (2018) conducted a study to determine the relationship between the following concepts: (a) religiosity and spirituality, (b) religious coping, (c) depression, and (d) suicide. Data for this study was collected via archived interviews from a hospital in Oregon from 2015 to 2016; of the 839 patient records that fit criteria for the variables being studied, only 36 were relevant and used to produce results (Bailey et al., 2018). The results of this study reported no significant relationships between religiosity and spirituality and suicidal intent; however, the researchers deemed these results inconclusive because of the limitations in sample size. Bailey et al. (2018) provide three possible explanations for the limitations in archival data that met criteria for the study's variables: (a) patients had little or no inner religious or spiritual experience and so did not express any such content, (b) patients did have inner religious or spiritual experience but the content they expressed was not recorded in such interviews, and (c) patients did have inner religious or spiritual experience but did not express such content because of various inhibiting factors.

Unsafe Sexual Practice and Religiosity

Unsafe sexual practice and sexual promiscuity are at higher levels during adolescence, especially in high-school and college students, because peer pressure and social identity are important to individuals during this life stage. Research has shown evidence that African-American middle to late adolescent girls in psychiatric care with higher levels of religious involvement are less likely to be involved in risky sexual behavior, more likely to begin sexual

behaviors later in life, and are less frequently sexually active and with fewer partners (Udell, Donenberg, & Emerson, 2011).

Eating Disorders and Religiosity

Eating disorders are a risky behavior that can result in many permanent detrimental consequences, and they are especially prevalent in young adolescents. Research has found mixed results in terms of the effect that religious involvement can have on eating disorders; religious experience has been found to sometimes worsen feelings of guilt and shame, which are underlying causes of eating disorders (Weinberger-Litman, Rabin, Fogel, Mensinger, & Litman, 2016).

Weinberger-Litman et al. (2016) explains that religion and spirituality can either contribute to or reduce eating disorder symptoms depending on multiple factors such as religious orientation, religious coping, and influence of societal standards. *Religious orientation* refers to the concept of fundamental religious beliefs, attitudes, and motivations as opposed to simply observing such religious factors. *External religious orientation* can be defined as representing an externally prompted way of religious involvement that focuses on social aspects of religious life and is associated with more negative physical and mental health consequences; on the other hand, *intrinsic religious orientation* can be defined as representing an internally prompted way of religious involvement and is associated with more positive physical and mental health consequences (Weinberger-Litman et al., 2016).

Weinberger-Litman et al. (2016) administered a research study to examine the relationship between religiosity in Jewish women and eating disorders. The results of this study provided further evidence that external religious orientation strongly predicted higher levels of disordered eating and body dissatisfaction while intrinsic religious orientation strongly predicted lower levels of disordered eating and body dissatisfaction; both of these results were mediated by

factors concerning influence of societal standards on the Jewish women who participated (Weinberger-Litman et al., 2016).

The research presented in this literature review was limited in that it was only collected through EBSCOhost; other databases should be considered for future research regarding this topic. Another major limitation throughout the studies concerned the generalizability of the results. Most of the participants were either college students or part of smaller institutions like a hospital or mental health facility; the limitations in generalizability also meant that clinical implications could not be made with the results from most studies. There were only a few studies that clearly examined factors of race, ethnic background, and culture as contributing factors to the relationship between religiousness and risky behaviors. Also, religious affiliation was mostly limited to Christian, Catholic, or Evangelical denominations in Western societies which also affects the generalizability of results. Small sample sizes and lack of control groups were also found to be major limitations in several sources.

Purpose of Study

The purpose of this study was to examine the relationship between religiosity and risky behavior in college students at Southern Adventist University.

Definition of Terms

The following terms are operationally defined for this study:

1. Participants' levels of religiosity were self-reported using a modified questionnaire consisting of items from both the *Duke Religion Index* (DRI) (Koenig, Parkerson, & Meador, 1997) and *The Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012). Items on this questionnaire were measured on a 5-point Likert scale indicating how often they participated in a certain religious behavior or to what extent they agreed with a statement. For example, one item asked, "How important is personal prayer for you?" Also, the demographic

questionnaire included an item asking what religion, if any, the participants identified with. For example, Christian = 1, Jewish = 2, Muslim = 3, Buddhist = 4, Hindu = 5, Unaffiliated = 6, Agnostic = 7, Atheist = 8, and Other = 9.

2. Participants' frequencies of risky behaviors were self-reported using the *Risky Behavior Questionnaire* (RBQ) (Weiss, Tull, Dixon-Gordon, & Gratz, 2018). Items were measured based on how many times the participant indicated they participate in a certain type of risky behavior, and a 5-point Likert-scale was also used to indicate whether risky behaviors were more likely to occur as a result of emotional state. Examples of these items include, "I misuse prescription drugs" and, "I eat so much food that I have to force myself to throw up."
3. Class standing was measured using a portion of the demographic questionnaire that was created by the researcher. For example, Freshman = 1, Sophomore = 2, Junior = 3, and Senior = 4.
4. Gender was measured using a portion of the demographic questionnaire that was created by the researcher. For example, Male = 1 and Female = 2.
5. Race was measured using a portion of the demographic questionnaire that was created by the researcher. For example, White = 1, Black or African American = 2, Hispanic or Latino = 3, Asian = 4, American Indian or Alaska Native = 5, Native Hawaiian or Other Pacific Islander = 6, and Other = 7.

Hypothesis

One research hypothesis guided this study:

1. There will be a significant negative relationship between levels of religiosity and frequency of risky behaviors in students.

Null hypothesis: There will be a significant negative relationship between levels of religiosity and frequency of risky behaviors in students.

Research Questions

Four research questions were addressed in this study:

1. What are students' average levels of religiosity?
2. Are there religiosity and risky behavior differences as a function of class standing?
3. Are there religiosity and risky behavior differences as a function of gender?
4. Are there religiosity and risky behavior differences as a function of race?

Method

Participants

A sample of convenience consisted of 31 participants from Southern Adventist University. Each participant was at least 18 years of age. All participants were treated in accordance with the Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association (American Psychological Association, 2010).

Materials

The questionnaires used for this research study include: the *Risky Behavior Questionnaire* (RBQ) (Weiss et al., 2018), the *Duke Religion Index* (DRI) (Koenig et al., 1997), and the *Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012). In addition to this, a demographic questionnaire was created by the researcher to measure class standing, gender, race, and religious affiliation. Each of these questionnaires were measured using a self-report method. The participants answered questions regarding their levels of religiosity, their participation in risky behaviors, and demographics in order to determine the relationships among all five variables. Besides the demographic questionnaire composed by the researcher, all other scales have been used in previous studies. As expected, a relatively low alpha coefficient ($\alpha = .52$) was detected for the *Risky Behavior Questionnaire* (RBQ) (Weiss et al., 2018) given the checklist nature of this scale. The *Duke Religion Index* (DRI) (Koenig et al., 1997) has high test-retest reliability

(intra-class correlation = 0.91), high internal consistency (Cronbach's alpha = 0.78–0.91), and high convergent validity with other measures of religiosity (r = 0.71–0.86). In addition, there are very high correlations between the *Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012) and self-reports of the salience of religious identity in other religious questionnaires.

Design and Procedure

This study used a descriptive correlational research design using a survey methodology. In order to have substantial data, 31 students that were ages 18 and older participated and completely filled out the questionnaires given. Students were recruited through the use of social media and by asking permission from professors to allow students in their undergraduate courses to participate.

In each of three classrooms, the researcher introduced themselves and asked the students if they were willing to sign-up to participate in the research study that is a requirement for the course Research and Design Statistics II. The sign-up sheet included an area for the full names of students, their emails, and their phone numbers. All students were also informed during that time that an incentive in the form of donuts would be offered if they completed the questionnaire. The researcher also answered any general questions the students had without compromising the results of the study. The researcher then followed up with thanking the students who signed up to participate. Once enough participants were recruited, an email and a text were sent to each student to remind them of the place, date, and time at which the research study would occur.

On the day and time of the research study, the participants gathered in a room at Summerour Hall. Once all of the participants arrived and took a seat, the researcher introduced themselves, thanked the participants for coming, and proceeded with handing out the informed consent forms for the students to read thoroughly and sign if they still desired to continue participating. Afterwards, the participants had the chance to ask questions, again without the

researcher compromising the possible results, and were reminded of the incentive of donuts offered to them upon completion of their questionnaire.

The students then received the demographic questionnaire. Following this, they were handed the *Risky Behavior Questionnaire* (RBQ) (Weiss et al., 2018) and items from both the *Duke Religion Index* (DRI) (Koenig et al., 1997) and *The Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012). Once the participants had completed all of the questionnaires, any questions they had were answered, and they were given their donuts and thanked for their participation. The data gathered was scored, coded, and entered into Statistical Package for Social Sciences (SPSS) (IBM Corp., 2016) to be analyzed.

Data Analysis

After the data had been collected, questionnaires were scored and coded using the appropriate answer keys and analyzed using SPSS (IBM Corp., 2016). Participants' levels of religiosity were measured using the self-reported scores on the modified questionnaire consisting of items from both the *Duke Religion Index* (DRI) (Koenig et al., 1997) and *The Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012). The scores were recorded using 5-point Likert scales, with 1 being the lowest value on the scale and 5 being the highest, which indicated how high or low religiosity levels were for each participant. Participants' participation in risky behaviors were measured using the self-reported scores on the *Risky Behavior Questionnaire* (RBQ) (Weiss et al., 2018). The scores were recorded using the amount of times that the participant indicated they participate in a certain type of risky behavior. Descriptive statistics, Pearson's *r* correlation coefficient, and a multivariate analysis of variance (MANOVA) were used to analyze the hypothesis and answer the research questions.

Results

Thirty-one participants (42% men and 58% women) completed the questionnaire containing the demographic survey, the *Risky Behavior Questionnaire* (RBQ) (Weiss et al., 2018), and the compilation of the *Duke Religion Index* (DRI) (Koenig et al., 1997) and *The Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012). This sample consisted of students who were mostly seniors (35%), juniors (26%), or sophomores (26%) in class standing. All 31 participants reported that they identified as Christian when asked about religious affiliation. Descriptive statistics can be found in Table 1.

Table 1.

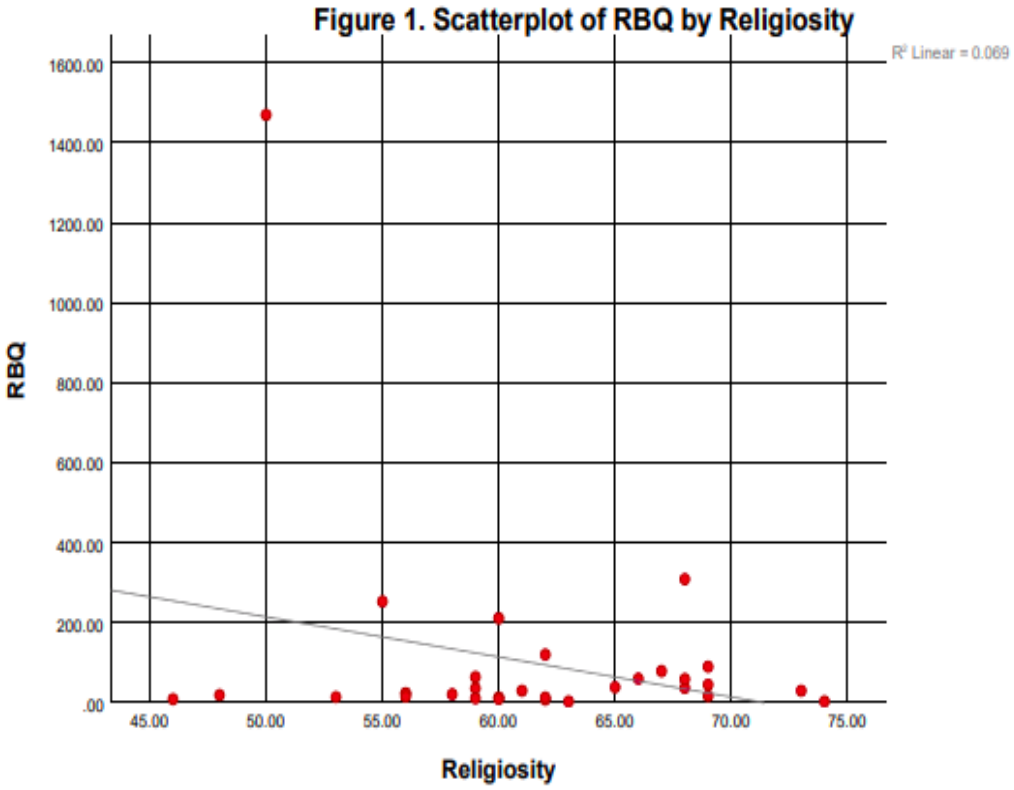
Descriptive Statistics for Religiosity and Risky Behavior

Variables	Minimum	Maximum	Mean	Std. Deviation
Religiosity	46	74	61.32	6.94
Risky Behavior Quotient	3	1470	101.13	264.52

Hypothesis

The research hypothesis stated that there would be a significant negative relationship between levels of religiosity and frequency of risky behaviors in students. Students' levels of religiosity and frequencies of participation in risky behaviors were calculated using the scores from the *Risky Behavior Questionnaire* (RBQ) (Weiss et al., 2018), and the compilation of the *Duke Religion Index* (DRI) (Koenig et al., 1997) and *The Centrality of Religiosity Scale* (CRS) (Huber & Huber, 2012). Using a Pearson's *r* correlation coefficient analysis, a weak negative relationship between level of religiosity and frequency of participating in risky behavior was found ($r_{(34)} = -.263$, $p = .153$, *ns*). This statistic shows that when an individual's level of

religiosity increases, their frequency of participation in risky behaviors decreases. Because these findings are not statistically significant, however, the results are inconclusive and further research is required to determine the relationship between these two variables. (See Table 1 and Figure 1)



Research Questions

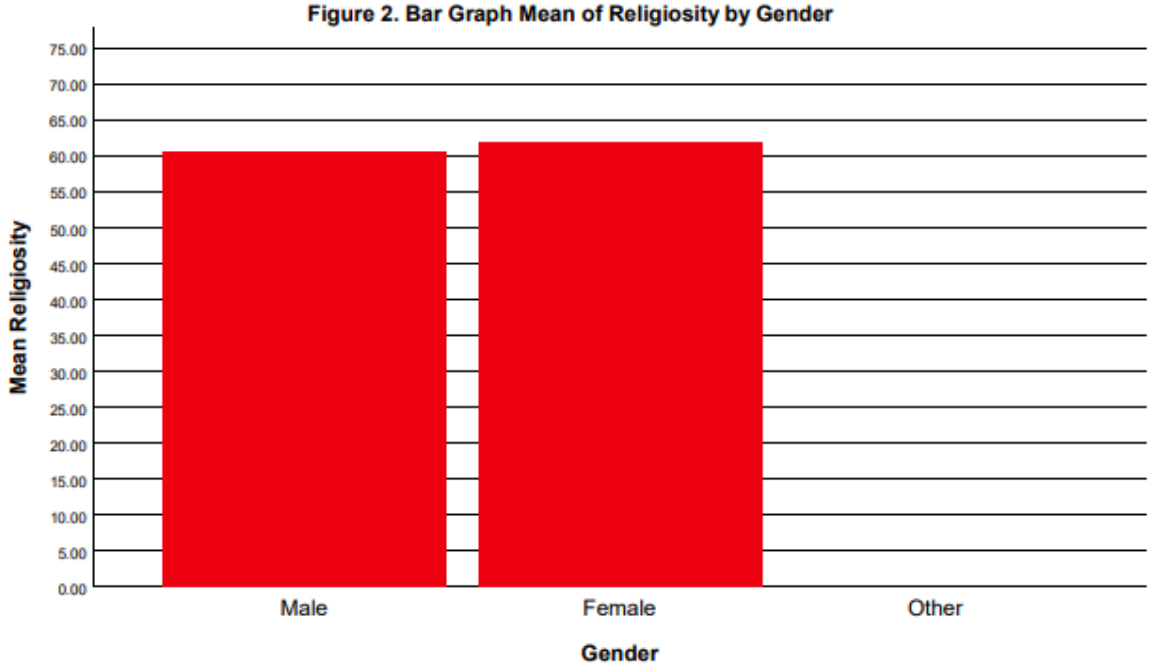
The first research question asked what students' average levels of religiosity were. Descriptive statistics show the mean score of religiosity to be 61.32 (*SD* = 6.94). The maximum possible score on the religiosity scale is a 75, and, therefore, an average of 61.32 suggests that overall levels of religiosity are high on this campus. (See Table 1)

The second research question asked whether there were religiosity and risky behavior differences as a function of class standing. Using a multivariate analysis of variance (MANOVA), there was no statistically significant difference in religiosity and risky behavior

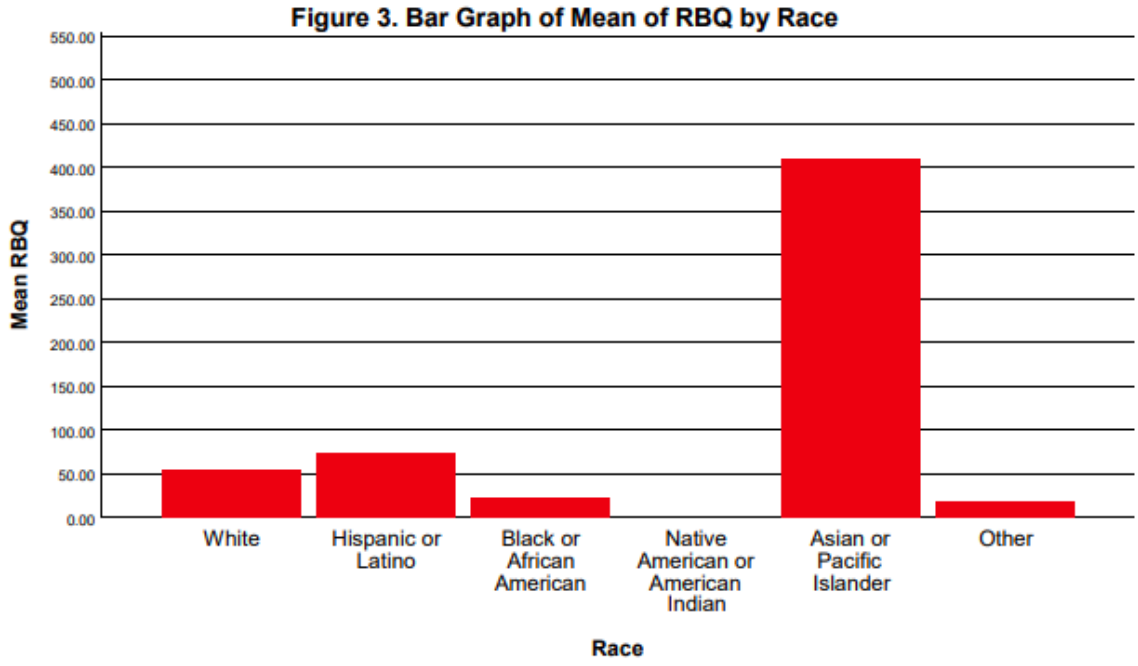
based on class standing ($F_{(6, 29)} = .691$, $p > .05$; Wilk's $\Lambda = 0.658$, *ns*). These results indicate that class standing does not significantly influence levels of religiosity or risky behavior. However, the results were inconclusive and more research is needed.

The third research question asked whether there were religiosity and risky behavior differences as a function of gender. Using a multivariate analysis of variance (MANOVA), there was no statistically significant difference in religiosity and risky behavior based on gender ($F_{(2, 29)} = 1.494$, $p > .05$; Wilk's $\Lambda = 0.242$, *ns*). These results indicate that gender does not significantly influence levels of religiosity or risky behavior. However, the results were inconclusive and further research is needed. (See Figure 2)

Figure 2. Bar Graph Mean of Religiosity by Gender



The fourth research question asked whether there were religiosity and risky behavior differences as a function of race. Using a multivariate analysis of variance (MANOVA), there was no statistically significant difference in religiosity and risky behavior based on race/ethnicity ($F_{(8, 29)} = .1.192$, $p > .05$; Wilk's $\Lambda = 0.323$, *ns*). These results indicate that race/ethnicity does not significantly influence levels of religiosity or risky behavior. However, results were inconclusive and more research is needed. (See Figure 3)



Overall, the study indicated that when individuals' levels of religiosity increased, their frequency in participation of risky behaviors decreased; however, the findings were not significant. There were also no significant differences in religiosity and risky behavior based on class standing, gender, or race.

Discussion

The purpose of this study was to examine the relationship between religiosity and risky behavior in college students at Southern Adventist University. It was hypothesized that there would be a significant negative relationship between levels of religiosity and frequency of risky behaviors in students. It was questioned whether differences in religiosity and risky behavior would exist as a function of class standing, gender, and race.

Based on the sample data from the 31 participants from Southern Adventist University, class standing, gender, and race do not generally influence the levels of religiosity and frequency of participation in risky behaviors among students. This was determined based on the lack of statistical significance found among these variables. Additionally, based on the sample data,

religiosity and risky behavior are slightly negatively correlated, meaning that as religiosity increases, risky behavior decreases among students. However, these results were not statistically significant and further research is needed in order to examine the relationship between religiosity and risky behavior. Therefore, the findings did not support the hypothesis.

Limitations and Weaknesses

Limitations of this research study include that there was neither a comprehensive nor exhaustive treatment of religiosity and risky behaviors among students at Southern Adventist University. Because self-report measures were used, there is a probability that participants did not answer honestly or to the best of their ability, especially due to the sensitivity of admitting to participation in risky behaviors. Also, because students were at an institution in which religious presence is heavy, it is possible that they felt they had higher levels of religiosity than were actually true. Additionally, the sample size was small, only consisted of participants who identified as Christian, and lacked diversity in terms of race and ethnicity.

Relation to Literature Review

Previous research indicated that religiosity often served as a deterrent for risky behaviors in adolescents. However, in a few research studies these results were not shared and other factors were contributed to the difference in risky behaviors among participants. For example, parents' religiosity, mental health, and level of internalization of values were also associated with both religiosity and risky behavior. The current research study did show a negative correlation between religiosity and risky behavior, and although statistically insignificant, these findings do show a trend towards support of previous literature that suggests that higher levels of religiosity can predict lower frequency of participation in risky behaviors.

Importance of Study

The topic of the relationship between religiosity and risky behavior is important because if the results support the hypothesis, it could offer an additional protective factor for adolescents against bad decision-making and exposure to unnecessary danger. This study could benefit people who are religious, people who have questions regarding the effects of religiosity, and researchers who are interested in conducting future studies regarding this topic.

Agenda for Future Research

Future research could include a larger sample size, multiple campuses across the country, and greater diversity among participants in terms of religious affiliation and race. Also, other possible factors affecting religiosity and risky behavior could be explored. For example, life circumstances and genetics could be related to both of these concepts. The current study could be used as a platform for future research.

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Appendix A

Religiosity and Risky Behavior Study

Informed Consent Form

My name is Chaden Noriega, and I am an undergraduate student in the Psychology Program at Southern Adventist University. I am doing this research study in order to fulfill the requirements of a course I am enrolled in, Research Design and Statistics II, under the tutelage of Dr. Tron Wilder. You are being invited to participate in a study that examines religiosity and risky behavior among college students. In the past, not enough studies have been performed examining these variables among college students and none done among Seventh-Day Adventists. Your participation will help fill a gap in our knowledge here on Southern's campus regarding religiosity and risky behavior.

If you decide to participate, you will be asked to complete a compilation of three different questionnaires called the *Duke Religion Index* (DRI), *The Centrality of Religiosity Scale* (CRS), and the *Risky Behavior Questionnaire* (RBQ) in addition to a demographic questionnaire. This should take no more than 30 minutes to complete. Although all research studies maintain some degree of risk, the potential risks involved in this study are minimal and do not exceed the risks that may be encountered in a typical classroom setting.

As an incentive to participate donuts will be offered if you choose to participate in the research study. Your participation is voluntary and you are free to withdraw from this study at any time and for any reason without prejudice.

All information concerning your personal identity will be kept confidential and your name will not be used or placed anywhere either on the questionnaire or on the final report. A copy of the results of this study and of this form will be made available to you upon request to the principal investigator, Chaden Noriega.

If you have any further concerns, please feel free to contact Chaden Noriega, Principal Investigator by email at chadenn@southern.edu.

AUTHORIZATION: I have read the above and understand the nature of this research study. I understand that by agreeing to participate in this study I have not waived any legal or human right. I understand that my identity will be kept in the strictest of confidence and that I am free to withdraw my consent at any time and for any reason. I also understand that if I have any questions or concerns, I can contact Chaden Noriega at Southern Adventist University.

Name of Participant (Please Print) _____

Signature of Participant: _____ Date: _____

Signature of Researcher: _____ Date: _____

Appendix B

Questionnaire

Thank you for taking the time to complete this survey. Please answer each question and/or statement as honestly as you can. There are no right or wrong answers. Do not write your name anywhere on this questionnaire.

Section I

Demographic Questionnaire

Please place a check mark next to the box that best describes you.

What is your gender?	○ Male ○ Female ○ Other
What is your race/ethnicity?	○ White ○ Hispanic or Latino ○ Black or African American ○ Native American or American Indian ○ Asian/ Pacific Islander ○ Other
What is your class standing?	○ Freshman ○ Sophomore ○ Junior ○ Senior
What is your religious affiliation?	○ Christian ○ Jewish ○ Muslim ○ Buddhist ○ Hindu ○ Unaffiliated ○ Agnostic ○ Atheist ○ Other

Section II

The Centrality of Religiosity Scale (CRS) & Duke Religion Index (DRI)

For each of the following questions/ statements, please place a check mark next to the option that best describes you.

How often do you think about religious issues?	○ More than once a week ○ Once a week ○ One or three times a month ○ A few times a year ○ Less often ○ Never
To what extent do you believe that God or something divine exists?	○ very much so ○ quite a bit ○ moderately ○ not very much ○ not at all
How often do you take part in religious services?	○ More than once a week ○ Once a week ○ One or three times a month ○ A few times a year ○ Less often ○ Never
How often do you pray?	○ Several times a day ○ Once a day ○ More than once a week ○ Once a week ○ One or three times a month ○ A few times a year ○ Less often ○ Never
How often do you experience situations in which you have the feeling that God or something divine intervenes in your life?	○ very often ○ often ○ occasionally ○ rarely ○ never
How interested are you in learning more about religious topics?	○ very much so ○ quite a bit ○ moderately ○ not very much ○ not at all

How important is it to take part in religious services?	○ very much so ○ quite a bit ○ moderately ○ not very much ○ not at all
How important is personal prayer for you?	○ very much so ○ quite a bit ○ moderately ○ not very much ○ not at all
How often do you experience situations in which you have the feeling that God or something divine wants to communicate or to reveal something to you?	○ very often ○ often ○ occasionally ○ rarely ○ never
How often do you keep yourself informed about religious questions through radio, television, internet, newspapers, or books?	○ very often ○ often ○ occasionally ○ rarely ○ never
How important is it for you to be connected to a religious community?	○ very much so ○ quite a bit ○ moderately ○ not very much ○ not at all
How often do you pray spontaneously when inspired by daily situations?	○ Several times a day ○ Once a day ○ More than once a week ○ Once a week ○ One or three times a month ○ A few times a year ○ Less often ○ Never
How often do you experience situations in which you have the feeling that God or something divine is present?	○ very often ○ often ○ occasionally ○ rarely ○ never
My religious beliefs are what really lie behind my whole approach to life.	○ Definitely true of me ○ Tends to be true ○ Unsure ○ Tends not to be true ○ Definitely not true

I try hard to carry my religion over into all other dealings in life.	○ Definitely true of me ○ Tends to be true ○ Unsure ○ Tends not to be true ○ Definitely not true

Section III

Risky Behavior Questionnaire (RBQ)

Listed below are a number of behaviors that some people engage in. Please indicate the number of times you engaged in each behavior IN THE PAST YEAR. If you are unsure, please make your best guess. If you do not know for sure how many times a behavior took place, try to estimate the number as close as you can. Thinking about the average number of times the behavior happened per week or per month might make it easier to estimate an accurate number, especially if that behavior happened fairly regularly. Please write an actual number (e.g., 1, 5, 15), NOT some, many, or a lot.

In the past year, how many times have you . . .

_____ consumed so much alcohol that you were drunk
_____ misused prescription drugs (taken more than the doctor recommended, used without a prescription)
_____ used street drugs (e.g., marijuana, cocaine)
_____ had unprotected sexual intercourse with someone who is not a monogamous partner
_____ bullied or intimidated others
_____ ate so much food that your stomach hurt
_____ did things that were against the law (e.g., speeding, selling drugs, shoplifting, using drugs)
_____ did or said things that made other people feel bad on purpose
_____ gone on spending sprees where you spent a lot of money on things you didn't need or couldn't afford
_____ shouted, yelled, or screamed at others
_____ physically assaulted or abused others
_____ had a one-night stand
_____ initiated physical fights
_____ eaten so much food that you had to force yourself to throw up
_____ threatened to physically harm others
_____ had sex in exchange for drugs or money
_____ paid for sex using drugs or money
_____ damaged or destroyed material objects (e.g., cell phone)
_____ driven far too fast

_____ driven while under the influence of drugs and/or alcohol
_____ shoplifted
_____ said things to intentionally hurt other people
_____ done things to physically harm yourself without meaning to kill yourself (e.g., cutting, skin picking)
_____ had sex under the influence of alcohol or drugs with someone who is not a monogamous partner
_____ gambled
_____ had sex with someone you didn't know very well
_____ eaten an unusually large amount of food
_____ got into fistfights
_____ used laxatives/diuretics or exercised far too much

Thank you for completing this questionnaire!

Appendix C

Questionnaire Scoring Key

Section I

For gender:
1 = Male
2 = Female
3 = Other

For race/ethnicity:
1 = White
2 = Hispanic or Latino
3 = Black or African American
4 = Native American or American Indian
5 = Asian/ Pacific Islander
6 = Other

For class standing:
1 = Freshman
2 = Sophomore
3 = Junior
4 = Senior

For religious affiliation:
1 = Christian
2 = Jewish
3 = Muslim
4 = Buddhist
5 = Hindu
6 = Unaffiliated
7 = Agnostic
8 = Atheist
9 = Other

Section II

Scores can range from 15-75 and follow the interval scale below:

15-29: Little to no presence of religiosity
30-44: Background presence of religiosity
45-59: Moderate presence of religiosity
60-75: Clear/ high presence of religiosity

5 = More than once a week
5 = Once a week
4 = One or three times a month

3 = A few times a year
2 = Less often
1 = Never

5 = very much so
4 = quite a bit
3 = moderately
2 = not very much
1 = not at all

5 = very often
4 = often
3 = occasionally
2 = rarely
1 = never

5 = Several times a day
5 = Once a day
4 = More than once a week
3 = Once a week
3 = One or three times a month
2 = A few times a year
2 = Less often
1 = Never

5 = Definitely true of me
4 = Tends to be true
3 = Unsure
2 = Tends not to be true
1 = Definitely not true

Section III

Responses to items on the RBQ Scale are summed so that higher scores indicate a greater tendency to engage in risky behaviors.

Appendix D

SPSS Output

Descriptives

```
[DataSet1] W:\QuestionnaireData.sav
```

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Religiosity	31	46.00	74.00	61.3226	6.94448
RBQ	31	3.00	1470.00	101.1290	264.52092
Valid N (listwise)	31				

```
CORRELATIONS
  /VARIABLES=Religiosity RBQ
  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
```

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
Religiosity	61.3226	6.94448	31
RBQ	101.1290	264.52092	31

Correlations

		Religiosity	RBQ
Religiosity	Pearson Correlation	1	-.263
	Sig. (2-tailed)		.153
	N	31	31
RBQ	Pearson Correlation	-.263	1
	Sig. (2-tailed)	.153	
	N	31	31

```
GLM Religiosity RBQ BY ClassStanding
  /METHOD=SSTYPE(3)
```

General Linear Model

Between-Subjects Factors

		Value Label	N
ClassStanding	1.00	Freshman	4
	2.00	Sophomore	8
	3.00	Junior	8
	4.00	Senior	11

Descriptive Statistics

	ClassStanding	Mean	Std. Deviation	N
Religiosity	Freshman	59.0000	4.96655	4
	Sophomore	63.5000	4.44008	8
	Junior	58.3750	8.66747	8
	Senior	62.7273	7.47116	11
	Total	61.3226	6.94448	31
RBQ	Freshman	100.0000	103.65648	4
	Sophomore	59.1250	67.41224	8
	Junior	214.5000	508.57307	8
	Senior	49.6364	88.57683	11
	Total	101.1290	264.52092	31

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.988	1072.802[b]	2.000	26.000	.000
	Wilks' Lambda	.012	1072.802[b]	2.000	26.000	.000
	Hotelling's Trace	82.523	1072.802[b]	2.000	26.000	.000
	Roy's Largest Root	82.523	1072.802[b]	2.000	26.000	.000
ClassStanding	Pillai's Trace	.144	.697	6.000	54.000	.653
	Wilks' Lambda	.858	.691[b]	6.000	52.000	.658
	Hotelling's Trace	.164	.683	6.000	50.000	.664
	Roy's Largest Root	.152	1.366[c]	3.000	27.000	.274

Multivariate Tests[a]

Effect		Partial Eta Squared	Noncent. Parameter	Observed Power[d]
Intercept	Pillai's Trace	.988	2145.603	1.000
	Wilks' Lambda	.988	2145.603	1.000
	Hotelling's Trace	.988	2145.603	1.000
	Roy's Largest Root	.988	2145.603	1.000
ClassStanding	Pillai's Trace	.072	4.181	.253
	Wilks' Lambda	.074	4.143	.249
	Hotelling's Trace	.076	4.096	.246
	Roy's Largest Root	.132	4.097	.321

a. Design: Intercept + ClassStanding

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = .05

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F
Corrected Model	Religiosity	150.717[a]	3	50.239	1.047
	RBQ	146110.063[b]	3	48703.354	.673
Intercept	Religiosity	100425.037	1	100425.037	2092.097
	RBQ	303177.231	1	303177.231	4.191
ClassStanding	Religiosity	150.717	3	50.239	1.047
	RBQ	146110.063	3	48703.354	.673
Error	Religiosity	1296.057	27	48.002	
	RBQ	1953029.420	27	72334.423	
Total	Religiosity	118021.000	31		
	RBQ	2416179.000	31		
Corrected Total	Religiosity	1446.774	30		
	RBQ	2099139.484	30		

Tests of Between-Subjects Effects

Source	Dependent Variable	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
Corrected Model	Religiosity	.388	.104	3.140	.252
	RBQ	.576	.070	2.020	.173
Intercept	Religiosity	.000	.987	2092.097	1.000
	RBQ	.050	.134	4.191	.506
ClassStanding	Religiosity	.388	.104	3.140	.252
	RBQ	.576	.070	2.020	.173
Error	Religiosity				
	RBQ				
Total	Religiosity				
	RBQ				
Corrected Total	Religiosity				
	RBQ				

a. R Squared = .104 (Adjusted R Squared = .005)

b. R Squared = .070 (Adjusted R Squared = -.034)

c. Computed using alpha = .05

```
GLM Religiosity RBQ BY Gender
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
```

```
/PRINT=DESCRIPTIVE ETASQ OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN= Gender.
```

General Linear Model

Between-Subjects Factors

		Value Label	N
Gender	1.00	Male	13
	2.00	Female	18

Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Religiosity	Male	60.4615	5.85399	13
	Female	61.9444	7.74196	18
	Total	61.3226	6.94448	31
RBQ	Male	195.8462	396.22255	13
	Female	32.7222	29.07760	18
	Total	101.1290	264.52092	31

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.989	1209.120[b]	2.000	28.000	.000
	Wilks' Lambda	.011	1209.120[b]	2.000	28.000	.000
	Hotelling's Trace	86.366	1209.120[b]	2.000	28.000	.000
	Roy's Largest Root	86.366	1209.120[b]	2.000	28.000	.000
Gender	Pillai's Trace	.096	1.494[b]	2.000	28.000	.242
	Wilks' Lambda	.904	1.494[b]	2.000	28.000	.242
	Hotelling's Trace	.107	1.494[b]	2.000	28.000	.242
	Roy's Largest Root	.107	1.494[b]	2.000	28.000	.242

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F
Corrected Model	Religiosity	150.717[a]	3	50.239	1.047
	RBQ	146110.063[b]	3	48703.354	.673
Intercept	Religiosity	100425.037	1	100425.037	2092.097
	RBQ	303177.231	1	303177.231	4.191
ClassStanding	Religiosity	150.717	3	50.239	1.047
	RBQ	146110.063	3	48703.354	.673
Error	Religiosity	1296.057	27	48.002	
	RBQ	1953029.420	27	72334.423	
Total	Religiosity	118021.000	31		
	RBQ	2416179.000	31		
Corrected Total	Religiosity	1446.774	30		
	RBQ	2099139.484	30		

Tests of Between-Subjects Effects

Source	Dependent Variable	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
Corrected Model	Religiosity	.388	.104	3.140	.252
	RBQ	.576	.070	2.020	.173
Intercept	Religiosity	.000	.987	2092.097	1.000
	RBQ	.050	.134	4.191	.506
ClassStanding	Religiosity	.388	.104	3.140	.252
	RBQ	.576	.070	2.020	.173
Error	Religiosity				
	RBQ				
Total	Religiosity				
	RBQ				
Corrected Total	Religiosity				
	RBQ				

a. R Squared = .104 (Adjusted R Squared = .005)

b. R Squared = .070 (Adjusted R Squared = -.034)

c. Computed using alpha = .05

```
GLM Religiosity RBQ BY Gender
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
```

```
/PRINT=DESCRIPTIVE ETASQ OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN= Gender.
```

General Linear Model

Between-Subjects Factors

		Value Label	N
Gender	1.00	Male	13
	2.00	Female	18

Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Religiosity	Male	60.4615	5.85399	13
	Female	61.9444	7.74196	18
	Total	61.3226	6.94448	31
RBQ	Male	195.8462	396.22255	13
	Female	32.7222	29.07760	18
	Total	101.1290	264.52092	31

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.989	1209.120[b]	2.000	28.000	.000
	Wilks' Lambda	.011	1209.120[b]	2.000	28.000	.000
	Hotelling's Trace	86.366	1209.120[b]	2.000	28.000	.000
	Roy's Largest Root	86.366	1209.120[b]	2.000	28.000	.000
Gender	Pillai's Trace	.096	1.494[b]	2.000	28.000	.242
	Wilks' Lambda	.904	1.494[b]	2.000	28.000	.242
	Hotelling's Trace	.107	1.494[b]	2.000	28.000	.242
	Roy's Largest Root	.107	1.494[b]	2.000	28.000	.242

Multivariate Tests[a]

Effect		Partial Eta Squared	Noncent. Parameter	Observed Power[c]
Intercept	Pillai's Trace	.989	2418.240	1.000
	Wilks' Lambda	.989	2418.240	1.000
	Hotelling's Trace	.989	2418.240	1.000
	Roy's Largest Root	.989	2418.240	1.000
Gender	Pillai's Trace	.096	2.987	.291
	Wilks' Lambda	.096	2.987	.291
	Hotelling's Trace	.096	2.987	.291
	Roy's Largest Root	.096	2.987	.291

a. Design: Intercept + Gender

b. Exact statistic

c. Computed using alpha = .05

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F
Corrected Model	Religiosity	16.599[a]	1	16.599	.337
	RBQ	200858.180[b]	1	200858.180	3.069
Intercept	Religiosity	113099.180	1	113099.180	2293.339
	RBQ	394354.180	1	394354.180	6.025
Gender	Religiosity	16.599	1	16.599	.337
	RBQ	200858.180	1	200858.180	3.069
Error	Religiosity	1430.175	29	49.316	
	RBQ	1898281.303	29	65457.976	
Total	Religiosity	118021.000	31		
	RBQ	2416179.000	31		
Corrected Total	Religiosity	1446.774	30		
	RBQ	2099139.484	30		

Tests of Between-Subjects Effects

Source	Dependent Variable	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
Corrected Model	Religiosity	.566	.011	.337	.087
	RBQ	.090	.096	3.069	.395
Intercept	Religiosity	.000	.988	2293.339	1.000
	RBQ	.020	.172	6.025	.660
Gender	Religiosity	.566	.011	.337	.087
	RBQ	.090	.096	3.069	.395
Error	Religiosity				
	RBQ				
Total	Religiosity				
	RBQ				
Corrected Total	Religiosity				
	RBQ				

a. R Squared = .011 (Adjusted R Squared = -.023)

b. R Squared = .096 (Adjusted R Squared = .065)

c. Computed using alpha = .05

```
GLM Religiosity RBQ BY Race
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT=DESCRIPTIVE ETASQ OPOWER
  /CRITERIA=ALPHA(.05)
  /DESIGN= Race.
```

General Linear Model

Between-Subjects Factors

		Value Label	N
Race	1.00	White	7
	2.00	Hispanic or Latino	13
	3.00	Black or African American	5
	5.00	Asian or Pacific Islander	4
	6.00	Other	2

Descriptive Statistics

	Race	Mean	Std. Deviation	N
Religiosity	White	59.1429	6.84175	7
	Hispanic or Latino	63.4615	6.21310	13
	Black or African American	61.0000	8.45577	5
	Asian or Pacific Islander	60.2500	9.81071	4
	Other	58.0000	2.82843	2
	Total	61.3226	6.94448	31
RBQ	White	55.0000	74.64136	7
	Hispanic or Latino	73.5385	96.07256	13
	Black or African American	22.8000	10.49762	5
	Asian or Pacific Islander	411.0000	707.36412	4
	Other	18.0000	7.07107	2
	Total	101.1290	264.52092	31

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.985	831.984[b]	2.000	25.000	.000
	Wilks' Lambda	.015	831.984[b]	2.000	25.000	.000
	Hotelling's Trace	66.559	831.984[b]	2.000	25.000	.000
	Roy's Largest Root	66.559	831.984[b]	2.000	25.000	.000
Race	Pillai's Trace	.314	1.210	8.000	52.000	.312
	Wilks' Lambda	.705	1.192[b]	8.000	50.000	.323
	Hotelling's Trace	.391	1.173	8.000	48.000	.335
	Roy's Largest Root	.301	1.957[c]	4.000	26.000	.131

Multivariate Tests[a]

Effect		Partial Eta Squared	Noncent. Parameter	Observed Power[d]
Intercept	Pillai's Trace	.985	1663.967	1.000
	Wilks' Lambda	.985	1663.967	1.000
	Hotelling's Trace	.985	1663.967	1.000
	Roy's Largest Root	.985	1663.967	1.000
Race	Pillai's Trace	.157	9.676	.499
	Wilks' Lambda	.160	9.537	.490
	Hotelling's Trace	.163	9.380	.479
	Roy's Largest Root	.231	7.829	.509

a. Design: Intercept + Race

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = .05

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F
Corrected Model	Religiosity	119.936[a]	4	29.984	.588
	RBQ	453369.453[b]	4	113342.363	1.791
Intercept	Religiosity	77891.620	1	77891.620	1526.322
	RBQ	287911.117	1	287911.117	4.548
Race	Religiosity	119.936	4	29.984	.588
	RBQ	453369.453	4	113342.363	1.791
Error	Religiosity	1326.838	26	51.032	
	RBQ	1645770.031	26	63298.847	
Total	Religiosity	118021.000	31		
	RBQ	2416179.000	31		
Corrected Total	Religiosity	1446.774	30		
	RBQ	2099139.484	30		

Tests of Between-Subjects Effects

Source	Dependent Variable	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
Corrected Model	Religiosity	.675	.083	2.350	.170
	RBQ	.161	.216	7.162	.470
Intercept	Religiosity	.000	.983	1526.322	1.000
	RBQ	.043	.149	4.548	.537
Race	Religiosity	.675	.083	2.350	.170
	RBQ	.161	.216	7.162	.470
Error	Religiosity				
	RBQ				
Total	Religiosity				
	RBQ				
Corrected Total	Religiosity				
	RBQ				

a. R Squared = .083 (Adjusted R Squared = -.058)

b. R Squared = .216 (Adjusted R Squared = .095)

c. Computed using alpha = .05