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**MULTIDIMENSIONAL RELIGIOSITY AND SENSATION-SEEKING
BEHAVIOUR**

**By
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**Thesis presented in partial fulfilment
for the Master of Art in Human Development**

**School of Graduate Studies
Laurentian University
Sudbury, Ontario**

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ABSTRACT

Religiosity has been found to be significantly and inversely correlated with risk-taking behaviour, which has a biopsychological basis. However, religiosity has not yet been examined in relation to Sensation-Seeking (*SS*) as a personality trait that also correlates (positively) with risk-taking behaviour. By administering a religiosity questionnaire adapted from the *Brief Multidimensional Measurement of Religiousness/Spirituality (BMMRS)* as well as Zuckerman's *Sensation Seeking Scale-V (SSS-V)* to university students, the present study revealed that religiosity is inversely related to *SS*. Religious ideological classifications (e.g., liberal and fundamental) were also examined with respect to *SS*. Religious liberals were more likely to have higher scores only on the Disinhibition subscale of the *SSS-V*. Thus, a *SS* personality that may expose young adults to harm is not merely a result of biopsychological factors, but it is also affected by social elements such as religiosity. The question remains whether religiosity and *SS* are governed by a common underlying third factor. The implications of the present study with respect to terrorism fundamentalism are also discussed.

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DEDICATIONS

To my parents who tirelessly explain the importance of knowledge

and

*To my nephews and nieces, Alif, Farel, Davin, Cantika, Dyva, and Refa, who will be the
hinge bingers of Islam*

TABLE OF CONTENT

ABSTRACT	iii
ACKNOWLEDGMENT	iv
DEDICATIONS	v
TABLE OF CONTENT	vi
LIST OF TABLES	viii
LIST OF APPENDICES	ix
INTRODUCTION	1
Risk-taking behaviours and Emerging adulthood	4
Sensation-Seeking behaviour	8
Multidimensional religiosity and religious ideological affiliations	12
Young adults and their worldviews.....	17
Religion and risk-taking behaviour	19
Objectives of the study and hypotheses	23
METHOD	25
Participants	25
Measures.....	31
Brief Multidimensional Measure of Religiousness/Spirituality: 1999 (BMMRS).....	31
Sensation-Seeking Scale-V (SSS-V).....	38
Procedure.....	40
RESULTS	42
Religiosity and sensation-seeking behaviour	43
SSS-V, BMMRS, Religious Ideology, and Religious Preference.....	46
Gender, SSS-V, and religiosity	47

Predicting SS from Religiosity and Religious Preference.....	48
DISCUSSION	50
Religious Preference and SSS-V	53
Religious Preference and Subscales of SSS-V	54
Subscales of SSS-V and gender.....	54
Inter-correlations between subscales of the BMMRS and the SSS-V	55
Risk-taking behaviours, SS, and religiosity	57
Limitations of the study and suggestion for future studies	58
REFERENCES	60

LIST OF TABLES

Table 1. The number of participants as function of gender	26
Table 2. The number of participants as function of enrolled program	27
Table 3. The number of participants based on religious preference.....	28
Table 4. The number of participants based on religious ideological preference.....	29
Table 5. Chi-square calculation for religious ideology as function of study programs.....	30
Table 6. Total scores of Sensation Seeking Scale-V (SSS-V) by Religious Preference	42
Table 7. Correlations between subscales of religiosity and total score of Sensation-Seeking	44
Table 8. Intercorrelations between the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS) and the Sensation Seeking Scale-V (SSS-V).....	45
Table 9. Means of subscales of the Sensation Seeking Scale-V (SSS-V) by religious preference.....	46
Table 10. T-tests of subscales of the Sensation Seeking Scale-V (SSS-V) between the two sexes	48
Table 11. Predictors of Self-Reported Sensation Seeking Behaviour	49

LIST OF APPENDICES

Appendix A: Modified version of Sensation-Seeking Scale-V (SSS-V).....	76
Appendix B: Modified version of the BMMRS	79
Appendix C: Original version of the BMMRS	84
Appendix D: Original version of Sensation-Seeking Scale-V (SSS-V)	89
Appendix E: Informed Consent	92

INTRODUCTION

Young adult risk-taking behaviour (e.g., alcohol, smoking, speeding, and unsafe sexual behaviour) is dangerous to health. In principle, risk-taking behaviour is defined as “any behaviour that has a significant degree of uncertainty about the losses associated with its outcome” (Rosenbloom, 2003, pp. 375). Risk-taking as a feature of personality has been identified as a major ingredient of accidents (Dahlen, Martin, Ragan, & Kuhlman, 2005; Turner, McClure, & Pirozzo, 2004). Sensation-Seeking (*SS*) has been found to be a significant contributor to risk-taking behaviour (Zuckerman, 1994). Risk-taking has been examined in relation to religiosity (Brown, Parks, Zimmerman & Phillips, 2001; Brown, Salsman, Brechtinb, & Carlson, 2007) but interestingly, religiosity has not been thoroughly examined in relation to *SS*. Accordingly, this paper will attempt to redress that gap.

The high prevalence of risk-taking behaviours among the young adult population has been regarded to be significantly correlated with the Sensation-Seeking Scale-V (*SSS-V*) (Zuckerman, 1994). Sensation-Seeking (*SS*) refers to “a trait defined by the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience” (Zuckerman, 1994, pp. 27). Indeed, the notion of *SS* has been demonstrated to be associated with various risk-taking behaviours such as smoking, alcohol, drug use, excessive gambling, speeding, extreme sport activities, and even vocational preference (Donohew et al., 1999; McDaniel, 2002; Roberti, 2004; Wagner & Houlihan, 1994; Whissell & Bigelow, 2003). The specifics of health risks intrinsic to sensation-seeking

for the youth population are legion. For example, in a national survey in Canada (2004), young adult men reportedly consume alcohol more than do adolescent men (Roberts, 2001). Similarly, Canadian young adults were found to have a higher level of smoking than do adolescents (*The national strategy: Moving forward: The 2006 progress report on tobacco control*).

Arnett (2000) has argued that young adulthood is a period in which there is a high need for new experiences. Young adults tend to perform some activities for the sake of exploration and having novel experiences. This particular condition of young adults may expose them to risks that adversely affect their health. Thus, risk-taking behaviour is to some extent contributed to by psychological factors that emerge as part of the complex development (neurological, endocrinal, and experiential) of young adulthood. High SS is more common in young males (Whissell & Bigelow, 2003; Zuckerman, 1994). Risk-taking also has large individual differences. Not all youth are high in SS (Zuckerman, 1994) or take large risks.

Boyer (2006) noted in his review that the development of risk-taking behaviour is also affected by social factors, such as religious values. Religion as a part of the human condition has been regarded to be a significant issue within the young population (Arnett & Jensen, 2002). Young adulthood is marked by a condition in which types of religious values are intensively examined (Arnett & Jensen, 2002). There are several studies that have investigated the relationship between religion and risk-taking behaviour in the young adult population (e.g., Chitwood, Weiss, & Leukefeld, 2008; Regnerus, 2003, for reviews). Yet, linking religion, SS and risk-taking has been largely avoided in the quest to understand the origins of risk-taking.

Consequently, this study investigated the relationship between religion and *SS* in the young adult population. Examinations of the relationship between religion and *SS* have merely utilized a conventional measurement of religiosity (i.e., frequency of going to church, Hirschi & Stark, 1969; Zuckerman & Neeb, 1980). Attendance at places of worship does not necessarily measure religious beliefs. The present study measured religiosity by including several major elements of religious beliefs (i.e., a multidimensional measure of religiosity). In doing so, the current study provided a better understanding of how different dimensions of religion are correlated with *SS*.

In addition, Zuckerman and Neeb (1980) investigated such religious ideological classifications with respect to *SS*. This study revealed a significant difference between atheist and agnostic groups and conventional believers in terms of *SS*; the former group had a higher level of *SS*, but the study did not include a comparison of religious ideological classifications (i.e., fundamental and liberal). The present study also incorporated several additional dimensions of religion (e.g., daily spiritual experiences and religion as a coping mechanism), looking at their relationship to *SS*. “Dimensions of religion” refer to the different major elements of religion that significantly reflect an individual’s religiosity. Examining each aspect of religion separately in relation to risk-taking (*SS*) can provide a better picture of its contribution to an individual’s risk-taking behaviour, specifically *SS*. Furthermore, the expected results such as sex differences may also reveal to what extent the interaction of religion and *SS* contributes to the development of risk-taking behaviour in the vulnerable young adult population.

Risk-taking behaviours and Emerging adulthood

Emerging adulthood (i.e., youth) is considered to be a new stage of the human life span (18-25-years) in which people are regarded as neither adolescent nor adult (Arnett, 2000). A large number of studies on risk-taking behaviours among youth have been conducted (Gotham, Sher, & Wood, 2003; Kuntsche, Knibbe, Gmel, & Engels, 2005). For instance, alcohol consumption has become a prevalent issue among college students in North America (Kairouz, Glikman, Demers, & Adlaf, 2002). The excessive use of alcohol has been shown to be significantly associated with adverse health consequences such as injuries, violence, unintended pregnancies, and sexually transmitted diseases (Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; Kuntsche, Rehm, & Gmel, 2004; Perkins, 2002).

Cox and Klinger (1988) proposed a model to explain different motivations that contribute to alcohol consumption: coping, social, and enhancement. First, coping motives refer to dealing with some uncomfortable issues within or outside oneself such as escaping from thinking about the problem, and dealing with stress and worry. Second, social motives refer to any type of motive that helps people accommodate themselves with their social environment such as avoiding social rejection and peer pressure. In fact, these social motives were shown to be associated with some moderate drinking as well as an increase in heavy drinking (Kairouz et al., 2002; Kassel, Jackson, & Unrod, 2000; Weinberger & Bartholomew, 1996). Third, enhancement motives refer to certain types of motives that aid people to feel good about themselves such as increasing mood and self-esteem. In general, the motive for people to engage in alcohol consumption is a combination of emotional and cognitive processes, with a basis of the expected change in

terms of one's emotional state, which is considered to be a valued outcome (Kuntsche et al., 2005).

To illustrate, a survey of Kairouz, Gliksman, Demers, and Adlaf (2002) was conducted among 31,945 Canadian students, 25,347 of whom were occasional drinkers and 6,598 regular drinkers, recruited from 18 universities. The findings showed that there were different motives for alcohol consumption: 24.9% said they enjoyed the taste, 21.3% drank to celebrate, 16.9% drank for sociable reasons, and 2.1% drank to escape from worries (Kairouz et al., 2002). This study also showed that enjoying the taste held the highest position as a major reason of alcohol consumption. This finding is in line with one of the significant characteristics of emerging adults: experiencing new things for the sake of having novel experiences. These data also reflect the process of trying to find a firm self-identity (Arnett, 2000), as well as an indication of *SS* (Zuckerman, 1994).

Excessive alcohol consumption, considered substance abuse, has several implications that not only affect drinkers but also has an impact on the transmission of Sexual Transmitted Diseases (*STDs*) (Fortenberry, 1995). Those who were “under the influence” were more likely to have risky sexual behaviours that might lead them to be affected by *STDs*, which are mostly transmitted from one person to another through sexual contact. Many studies have revealed that prevalent *STDs* are more common during emerging adulthood (Doyle, Glynn, & Groseclose, 2002; Weinstock, Berman, & Cates, 2004). In 2008, adolescents and young adults made up 25% of the sexually active population, yet they represented 50% of people who had newly acquired *STDs* such as gonorrhoea and syphilis (Da Ros & Schmitt, 2008). Those who were infected by such

STDs were 5 to 10 times more likely to acquire them through sexual contact (Da Ros & Schmitt, 2008).

The number of young adults who were infected by *STDs* had been increasing on a yearly basis. In 1996, *STDs* were found to have infected 15 million people more than was expected (Cates & American Social Health Association Panel, 1999). Several years later, Weinstock, Berman, and Cates (2004) carried out another study on *STDs* among American youth. These results showed that the number of infected people had significantly increased to 18.9 million, and 48% of them were between 15-24 years of age.

The prevalence of *STDs* among young adults can also be attributed to a developmental change as they enter into emerging adulthood in which they have more freedom and less surveillance (Da Ros & Schmitt, 2008). Also, the commonality of *STDs* can be attributed to culture depending on where these emerging adults live (Fortenberry, 1995). *The US Public Health Service's* report has indicated that one of the major leading health indicators was "responsible sexual behaviour" since most individuals who became infected by the Human Immunodeficiency Virus (*HIV*) were under the age of 25 years and were exposed to sexual behaviour (*US Department of Health and Human Services*).

Acquired Immune Deficiency Syndrome (*AIDS*) has become a major issue with respect to health concerns in the United States as well as other industrial countries (Doyle et al., 2002). The number of deaths caused by *AIDS* between 1988-1998 was higher among males than females (Karon, Fleming, Steketee, & De Cock, 2001). When *AIDS*, other *STDs*, and tuberculosis were combined, they held the highest position (75%) in

terms of the prevalence level in society compared to any other diseases combined (Doyle et al., 2002).

The transmission of *HIV* among emerging adults is caused in three major ways, specifically, homosexual relationships among men, sharing needles, and heterosexual relationships for women (Hall et al., 2009; Karon et al., 2001; Rosenberg & Biggar, 1998). The *Public Health Agency of Canada* (2004) has reported that *HIV* transmission was primarily attributed to homosexual relationships between men (32,500 men, 58% of total), sharing a needle (11,000 users, 20% of total), heterosexual relationships (10,000, 18% of total), and other exposures, (300, <1% of total).

A lack of knowledge of *HIV/AIDS* is not the only contributor to the widespread transmission of the disease. Societal values also contribute to the problem. For instance, some people were reluctant to use a condom because it was perceived to be a sign of lack of trust in one's partner (Patel, Yoskowitz, Kaufman, & Shortliffe, 2008). These authors have also shown that, due to socio-cultural influences, males were more prone to be influenced by their peers not to use condoms than were females. In addition, there was also a different perception between males and females with respect to the idea of monogamy; females defined it as having only one partner, while males perceived it as having one *primary* partner (Patel et al., 2008). Also, there were significant gender differences with respect to *SS*. Males have higher scores on total *SS*, thrill and adventure seeking, and boredom susceptibility than do females in Canada, Australia, and Spain (Zuckerman, 1994).

Hence, the transmission of *HIV/AIDS* that is prompted by risk-taking behaviours (e.g., having multiple partners), particularly in the United States and Canada, has taken

the lives of many young people. Although preventive actions and campaigns have been carried out by the World Health Organization (*WHO*) and other non-profit Governmental organizations (*NGO*), the prevalence of *HIV* continues to increase and such campaigns are discouraging.

Sensation-Seeking behaviour

Sensation-Seeking (*SS*) is considered to be one of the major explanations for the prevalence of risk-taking behaviours (Ravert et al., 2009). Many studies have been conducted to see how this type of personality trait contributes significantly to risk-taking behaviours. College students, who participated in a survey, reported that *SS* significantly predicted their experiences of alcohol-impaired driving (Zakletskaia, Mundt, Balousek, Wilson, & Fleming, 2009). This personality trait was also found to be a significant predictor of reckless sexual behaviour, reckless substance use, and reckless driving (Duangpatra, Bradley, & Glendon, 2009). In addition, curiosity which is regarded as part of *SS*, was correlated with and predicted significant alcohol-related problems (Lindgren, Mullins, Neighbors & Blayney, 2010).

Adolescents with a high *SS* scores, as suggested by Urbán (2010), may activate positive and negative reinforcement frequently in their mind and that explains the high rate of smoking among them. Some studies have also corroborated this position, that adolescents with a high level of *SS* were more sensitive to nicotine and more likely to have nicotine addiction (Perkins, Gerlach, Broge, Grobe, & Wilson; Pomerleau, 1995). Adolescents with a high level of *SS* are also more likely to choose peers who are smokers (Urbán, 2010). Being together with those who are smokers can lead them to be more

addicted to smoking. Apart from that, they may also be more adversely affected by peer pressure so that they are more likely to smoke cigarettes (Urbán, 2010).

Many studies (e.g., Kahler, Spillane, Metrik, Leventhal, & Monti, 2009) have been carried out to determine the relationship between *SS* and the initiation of smoking. However, few studies have been done on the topic of the relationship between *SS* and smoking cessation (Kahler et al., 2009). Kahler, Spillane, Metrik, Leventhal & Monti (2009) revealed there was a negative correlation between *SS* and abstinence from smoking. Furthermore, increased *SS* reduces the odds of abstaining from smoking while increasing the odds of consuming alcohol. Also, *SS* and smoking cessation strategies yielded a negative correlation.

SS has a significant contribution to how people perceive packages of cigarettes of different brands (Manning, Kelly, & Comello, 2009). People with a high level of *SS* preferred a cigarette brand that was paired with a description of the flavour of the cigarette to a traditional description of a cigarette. Therefore, different levels of *SS* can affect how people perceive and appraise things that are related to risky behaviours, particularly cigarettes.

The propensity toward substance use among a national youth sample was investigated by Dunlop and Romer (2010) and resulted in a significant correlation with *SS*. In addition, among young people, the propensity toward substance use (i.e., smoking, alcohol, and marijuana) was strongly correlated with vehicle crashes. Sensation-Seeking was also revealed to be a predictor of marijuana use (Xiao, 2008). In an indirect way, it has also predicted marijuana use through the mediation of one's beliefs about marijuana use, risks and protective factors, and demographic variables. Those who held less

negative beliefs about the negative effects of using marijuana and had more positive attitudes toward marijuana were more likely to use marijuana. High sensation seekers were also more likely to be less satisfied with their families, schools, and themselves and more apt to use marijuana. They were also more likely to be involved in deviant behaviours and think that their families and peers would not disapprove if they use marijuana. With respect to demographic variables, males were more likely to be sensation-seekers than were females. Also, males accepted less that marijuana has negative consequences on health and social life than did females, while those who were younger were more likely to use marijuana (Xiao, 2008).

With respect to sexual risk-taking, *SS* is the most investigated variable and all forms of sexual risky behaviours were predicted (Hoyle, Fejfar, & Miller, 2000). High sensation-seekers still appraised those behaviours as less risky even after engaging in them (Pinkerton & Abramson, 1992; Pinkerton & Abramson, 1995).

Infidelity (i.e., cheating) has become a major concern in society and has been investigated to see whether it has a relationship with *SS*. One finding was that *SS* predicted that self-reported significant cheating behaviour among university students. Not surprisingly, it was also found that cheating males are more likely to have a *SS* personality than are females who are less likely to cheat (DeAndrea, Carpenter, Shulman, & Levine, 2009).

High *SS* may have a biological substrate. Apparently, a relatively low resting heartbeat has a correlation with antisocial behaviour such as aggression and law breaking (Sijtsema et al., 2010). A study conducted to find a relationship between these two variables indicated that the relationship was mediated by *SS* personality among

adolescent boys. However, among female adolescents, there was no significant relationship between low heart beat and antisocial behaviour and no mediating variable (i.e., *SS*). The mediating variable (*SS*) was not available in the preadolescent population. Therefore, the potential role of the *SS* as a mediating variable is likely influenced by gender and age, at least as they apply during adolescence (Sijtsema et al., 2010).

Moreover, the level of *SS* was significantly different between people who are at their best either in the morning or the evening. The latter group scored higher than the former on total score of the Sensation-Seeking Scale-*V* (*SSS-V*) as well as all subscales of the *SSS-V* (Thrill and Adventure Seeking (*TAS*), Experience Seeking (*ES*), Disinhibition (*Dis*), except for Boredom Susceptibility (*BS*). With regard to gender, males had higher scores on all subscales of *SSS-V* except *ES* (Tonetti et al., 2010).

Although *SS* is part of the psychological realm, it is still influenced by social elements (Zakletskaia, Mundt, Balousek, Wilson, & Fleming, 2009). Sensation-Seeking was found to be mediated by drinking place and residence (Zakletskaia, Mundt, Balousek, Wilson, & Fleming, 2009). Furthermore, *SS* as predictor of risk-taking behaviours had a significantly lower predictive value in relation to risk-taking behaviours after adding social support as a mediating variable. Thus, the present study attempted to include religion as part of social support element that is correlated to a lower level of risk-taking behaviour.

In summary, the *SS* personality makes a significant contribution to the increasing number of risk-taking behaviours, specifically amongst young males. Since the complexity of understanding the psychological elements of human beings is always

present, the present study may shed light on the interaction between *SS* (psychological element) and religiosity as an important part of the social element.

Multidimensional religiosity and religious ideological affiliations

Religion has many multifaceted and different definitions and dimensions (Aukst-Margetic & Margetic, 2005; Hackney & Sanders, 2003). Some have argued that religiosity and spirituality are overlapping. Many social scientists have argued that religiosity refers to organized and systematic religious behaviours (e.g., private and public religious practices), including social, doctrinal, and denominational religious related activities (Fetzer Institute, 1999; Hill et al., 2000). In other words, religiosity is considered to be systematic and organized religious actions are shared with others within a group.

Spirituality refers to the concept of transcendental elements that include God, a higher power, and ethics (e.g., one's life meaning) (Fetzer Institute, 1999). Spirituality can be manifested in different ways such as by sharing compassion for others and taking care of the environment. Thus, spirituality refers to one's situational relations with transcendental aspects that are beyond the self regardless of specific religious practices or rituals.

Some people may become spiritual individuals without necessarily having followed religious practices (Fetzer Institute, 1999). Spiritualists believe that a transcendental element is beyond any religious institution and can be manifested differently in daily life (Fetzer Institute, 1999; Nasel & Haynes, 2005; Underwood & Teresi, 2002). In contrast to religious individuals who rely on faith, they emphasize one's

own direct spiritual experiences (Nasel & Haynes, 2005). Being compassionate for others, for example, should be manifested by and applied to everyone regardless of their religious beliefs. Thus, those spiritualists may not necessarily need a formal religion in order to fulfill their spiritual needs.

Similarly, those who are religious may not be connected spiritually to transcendental elements (Fetzer Institute, 1999). For instance, some people go to church or religious services yet they have different intentions that do not nurture their spirituality such as knowing more friends and getting rid of loneliness and boredom. Nevertheless, those religious practices are prosocial, which in turn nurtures one's inner spirituality (Fetzer Institute, 1999).

This present study attempted to combine aspects both religiosity and spirituality. The multidimensional approach that was applied in the present study refers to a combination of different elements of religiosity and of spirituality that can be manifested in many different ways.

Due to practical sampling considerations, the present study used a Christian population and liberal and fundamental ideologies. The term liberal refers to a condition in which people believe that humans have the ultimate freedom for whatever they want to do, thus there is always room for new interpretations of all religious values. The notion of freedom is perceived to determine a better progress to a perfect society rather than following unquestioning religious dogma (Hayward, 1962). Liberalists do not completely detach themselves from their religious teachings but rather believe that they are open to other interpretations. In other words, their religious teachings are not considered to have the ultimate authority on the conduct of their lives. Religion is subject to one's

interpretation according to their needs that might change along the way (e.g., Hayward, 1962). For example, the commandment “Thou shall not kill” does not necessarily extend to a woman’s right to chose abortion. Fundamentalists, on the other hand, are less flexible on this topic. In another instance, Spong (1998) suggested that Christians have to revise their understanding about concepts of heaven and hell into a humanitarian one. As a liberalist, he also asserted that such concepts mean that our behaviours have eternal consequences to other beings and our surroundings. Thus, liberalists perceive that religion can always be harmonized with humanitarian needs and logic.

Furthermore, Spong (1998) asked Christians to reconstruct their interpretations of basic teachings of Christianity, particularly about Jesus. He began to argue from a historical point of view. Christian teaching was formulated by the church in the second century and was only adapted to be a teaching of the Christian church in the third century (Spong, 1998). According to him, the most important thing that should be looked at in such an historical situation is experiences that shaped the formulation of Christianity until it was adopted. Those experiences that occurred at that time can be different from or may not be relevant to the current time. Therefore, finding a new interpretation in Christian teaching by considering a new development (i.e., experiences) of the current world is a way to make Christianity fit into the postmodern world.

For example, Spong (1997) suggested that Christians should neither regard Jesus as God nor Son of God, yet he does not deny the existence of God. Spong (1998) called a condition of feeling God presence to be spiritual. Since Jesus was able to have a sense of God presence, then he is considered to be a spiritual person. Therefore, according to him, Christians need to follow Jesus as an example of the spiritual person rather than a God or

Son of God. Having a sense of God presence can be manifested differently in each individual. He further suggested that being compassionate for others regardless of their background, live fully, and love unconditionally are among the manifestations of interpreting Jesus as a person who experienced God presence.

However, there is no a clear-cut definition to categorize an individual to be fundamental or liberal in terms of Christianity. This categorization merely depends on individuals and how they regard themselves and interpret Christian teachings. According to a liberal perspective, although liberal have different interpretations on basic tenets of Christianity, it does not mean that they are no longer Christians (Spong, 1997; 1998). In fact, they believe that renewing the interpretations of Christianity is a way to make Christianity more available and fit into the current postmodern situation.

Fundamentalism, on the other hand, is a literal interpretation of religious texts/values. With respect to Christian beliefs, it means a type of religious conservatism which refers to an orthodox religious movement in which adherents believe in the errorless and literal interpretation of biblical text, and Jesus as God and his second coming. They examine problems from the lens of concrete interpretation, and regard themselves in terms of generations of orthodoxy (Meilaender, 1986; Queen II, Prothero, & Shattuck, 1996). For example, the virgin birth is literally true as is the resurrection, the second coming of Christ, and the firm belief in an after-life or heaven. God is viewed as literal and the ultimate architect of all creation). From a strictly fundamentalist perspective, liberalists are not Christian.

In contrast to Christians as God believers (theistic), atheistic ideology refers to a condition in which there is an absence of belief in God in one's belief system (Smith,

1989). Dawkins (2006) contended in his popular book, *The God Delusion*, that there is no need to believe in God, which is an invented concept of human beings. Humans use an idea of God in order to explain the nature of the universe. God is considered as an “*Intelligent Design*” who created and designed the universe. However, Dawkins argued that believing in a concept of Intelligent Design (God) in understanding the universe will even create more problems because believers or creationists have to face another question “Who designed the Designer?”. He proposed that incorporating a process of natural selection is the most scientific way to explain the nature of the universe.

Dawkins (2006) further argued that having a belief in the existence of God is frequently utilized to close a gap in explaining phenomena that have not been answered yet by science. In other words, humans make use of a concept of God if they cannot find an answer to explain some phenomena. As a result, humans can make no progress in their lives because there is no drive to make new scientific advancements. Everything relies on God. Therefore, having a concept of God for atheists is not an alternative that they choose in explaining the nature of universe as well as some unexplainable phenomena.

In between theism and atheism, there is a condition in which people neither accept nor reject a religion. Rather, they “suspend” their stand about a religion. The term of this condition was coined for the first time by Thomas H. Huxley as agnostic (Smith, 1989). We included agnosticism in our study.

Young adults and their worldviews

Worldview refers to a set of beliefs and social and cultural values that guide behaviours and cognitions as well as aid humans to make sense of what they experience in life (Koltko-Rivera, 2004). Worldview (i.e., zeitgeist) has been considered as a major component in the attainment of maturity among young adults. For example, Erikson (1968) proposed in his psychosocial developmental theory that young adults struggle with a “best fit” ideology for themselves that indicates their level of independence and maturity.

Psychosocial theory suggests that the attainment of an individual’s identity and worldview are two things that support each other and are necessarily required for entering adulthood (Erikson, 1968). They can also serve as valuable clues in forming relationships with others. Erikson further noted that a worldview serves important functions among young adults. Primarily, it helps to establish one’s uniformity with other beings, including a sense of union with others who share the same religious orientation. Secondly, by having a worldview, young adults will have a better ability to put things that seem to be unorganized into perspective. For instance, being unable to predict future major life events (e.g., marriage, parenting, and career), young adults can nevertheless look at themselves through the lens of their shared worldview and achieve a sense of belonging to shared values. As with Erikson, Blos’ (1967) second individuation parallels the first in terms of separating one’ self from that of parental attachment. The second individuation refers to the onset of adult maturity.

Emerging Adulthood Theory has also proposed that being an emerging adult is marked by searching for a suitable worldview that will help them to run their lives

(Arnett, 2000). Emerging adulthood is regarded as a new stage of one's human life-span and those who are in this particular period are characterized by having an intense level of struggle with the choice of the type of worldview that might fit them. Arnett has argued that emerging adults begin to question the worldview that they have "inherited" from their families. Hence, religion as worldview is a vital element for young adults in attaining maturity. As young adults grow up, they are more likely to seek stable commitments (Pulkkinen & Kokko, 2000). Thus, a worldview that involves a certain commitment is regarded to be a significant event in young adulthood. Accordingly, those who have no ideological commitment are more likely to experience identity confusion (Erikson, 1968). Religion should be incorporated into a potential worldview as young individuals begin to understand their psychological development.

Moreover, a benevolent worldview refers to the concept that there is more goodness than bad or evil. Not surprisingly, young adults who subscribe to this concept reported having higher with well-being (Poulin & Silver, 2008). Different worldviews can have various impacts on how people regulate their behaviour (Neblett, Hammond, Seaton, & Townsend, 2010). For example, a worldview that emphasizes a materialistic outlook is more likely to lead people who subscribe to it into stress and depression (Neblett et al., 2010). The Africentric worldview (i.e., African origin) can have significant impact on African Americans' level of stress (e.g., Hatter. Neblett, Hammond, Seaton, and Townsend (2010) showed that the Africentric worldview that focuses more on the spiritual than the materialistic has a negative correlation with depressive symptoms.

Worldview can mitigate the level of stress (Neblett et al., 2010). However, different worldviews can create different levels of stress reduction; this is attributed to several mechanisms. First, people with different worldviews will appraise situations differently and this results in different responses and behaviours. Secondly, some worldviews can help people who subscribe to them to have different perspectives on stress. Those people who regard stress as a threat are more likely to experience depressive symptoms than those who regard stress as an opportunity to grow and develop (Lazarus & Folkman, 1984). Since increasing age is related to increased commitment (Pulkkinen & Kokko, 2000), having a worldview that includes a commitment such as religion becomes more important as people enter into adulthood. Therefore, religious belief as a worldview needs to be considered significantly as one begins to understand young adults who are in a process of searching for a stable worldview, particularly vulnerable young adults. By utilizing several dimensions of religiosity, with a purpose to gauge young adults' sets of beliefs, social and cultural values, the present study is expected to render a better understanding on how such sets of beliefs have an impact on their way of regulating behaviour, particularly behaviour that is driven by *SS*.

Religion and risk-taking behaviour

A debate between religion and risk-taking behaviour can be traced back to a study of "Hellfire and Delinquency" (Hirschi & Stark, 1969). On the one hand, Hirschi and Stark showed that church attendance was not correlated with risk-taking behaviours. The promotion of development of moral values, acceptance of conventional authority, and punishment of supernatural beliefs are three presumed principles related to church

attendance that were not found to mediate church attendance and risk-taking behaviours. Overall, this study indicated that there is no relationship between religiosity and risk-taking behaviours. However, this particular study utilized a conventional measure of religion, frequency of church attendance, which is inadequate to gauge an individual's level of religiosity. There were no reported reliability and validity specific to these measurements, nor were multidimensional measures used.

On the other hand, current available data reveal that religion has a significant impact on reducing risk-taking behaviours (Brown, Parks, Zimmerman, & Phillips, 2001; Brown, Salsman, Brechtinb, & Carlson, 2007). In fact, one's level of religiosity was found to be a protective factor of smoking cigarettes, substance abuse, and drug dealing (Chitwood, Weiss, & Leukefeld, 2008; Sussman, Skara, Rodriguez, & Pokhrel, 2006).

Multidimensional religiosity has become a serious issue since different aspects of religiosity have resulted in different findings regarding risk-taking behaviours. Nonnemaker, McNeely and Blum (2003) found that private (e.g., meditation, and prayer) and public (e.g., how often one goes to religious services) religious domains showed different coefficients of logistic regression in predicting different types of substance use and sexual behaviours. Public religiosity had lower negative coefficients than private with respect to cigarette use and alcohol consumption. However, a negative coefficient was higher for public religiosity than private one in predicting marijuana use. With respect to whether one has ever had sexual intercourse, public religiosity had a higher negative predictive score than did private religiosity. In addition, private religiosity has significantly predicted lower levels of suicidal ideation and suicide attempt, while there was no significant predictive value for public religiosity.

The way religiosity is measured has mostly been divided into two types: distal and proximal religiosity (Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006). Distal religiosity refers to physical religious behaviour that reflects an individual's religious belief such as going to a place of worship/services. Attending religious services in a place of worship, which is considered as distal religiosity, has been shown to have a strong inverse relationship with drug abuse (Koenig, 2009). Proximal religiosity refers to functional religious behaviour that an individual can gain from being part of religion and that is more related to the psychological realm (e.g., social support, meaning of life). Proximal religiosity has offered more promise to reduce risk-taking behaviours (Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006). In fact, it has been shown that proximal religiosity had inverse relationships with marijuana use and substance abuse (Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006; Nonnemaker, McNeely, & Blum, 2003). In addition, there are two other significant religious measurements that significantly reflect one's religiousness: public and private religious practices (Fetzer Institute, 1999). Public religious practices refer to any religious behaviour that is performed within organized religious context such as prayer in a mosque. On the other hand, private religious practices reflect how much one performs religious related behaviours outside organized religious context such as saying grace before meal and watching religious TV program.

Taking together, this present study has included distal and proximal religiosity as well as public and private religious practices in its measurement of religiosity. This integration of measurement of religiosity is expected to give better information on how religious belief is both manifested and measured in different aspects of human behaviour with respect to risk-taking behaviour.

Furthermore, Wallace et al. (2007) divided religiosity into two types with respect to deterrence of risk-taking behaviour. Individual religiosity deals with religious influences on the psychology of the individual's values, norms, and religious beliefs. A contextual level religiosity means that religion affects individuals via moral communities that function as references for individuals. Individual religiosity has been shown to be significantly associated with less binge drinking, smoking, marijuana, and tobacco use. Similarly, those who scored high in contextual level-religiosity were found to be more likely to refrain from marijuana use, tobacco use, and binge drinking. Interestingly, those who were high in both individual and contextual religiosity were less likely to engage in risk-taking behaviours than those who were high on individual religiosity but not on contextual religiousness. Thus, to what extent the religious environmental context is available will have a significant impact on reducing risk-taking behaviours.

Holt, Miller, Naimi, and Sui (2006) explained the relationship between different denominations and low levels of risk-taking behaviour. Their national study (Holt et al., 2006) conducted in the United States has provided valuable data regarding the relationship between religion and alcohol consumption: current drinking (consumed any alcohol in the past month) and binge drinking (consumed five or more alcohol drinks in an occasion in the past month). States with a high Jewish adherence tended to have high levels of current drinking, but low levels of current drinkers who engaged in binge drinking. States with a high Muslim adherence were also low in the proportion of current drinkers who reported binge drinking. It has also been shown that states with large numbers of Evangelical Christians had lower rates of current and binge drinking, while

states with large number of Catholic populations had higher rates of current and binge drinking.

Objectives of the study and hypotheses

The present study had three main objectives: first, investigating a relationship between multidimensional religiosity and *SS* among young adults. Second, the effects of religious ideological classification on *SS*. Third, gender differences were examined with respect to the level of religiosity, of *SS*, and the association between the two variables.

Risk-taking behaviours were found to be correlated positively with *SS* (Dunlop & Romer, 2010; Kahler, Spillane, Metrik, Leventhal, & Monti, 2009; Ravert et al., 2009). However, they were shown to have a negative relationship with one's level of religiosity (Brown, Parks, Zimmerman, & Phillips, 2001; Brown, Salsman, Brechtinb, & Carlson, 2007). Thus, in the present study, it was hypothesised that *SS* negatively correlates with religiosity (Hypothesis 1).

There was a significantly different level of *SS* between conventional religious groups (i.e., Protestant, Catholic, Jewish, and Other) and atheist and agnostic groups (Zuckerman & Neeb, 1980); the first group had a higher score than did the second one. The more people follow their religious conventional and textual teachings, the less vulnerable they become to *SS*. Having mentioned such findings, the present study extended its investigation of religious ideological classifications. It was expected that there is a significant difference among people with different religious ideological classifications (i.e., fundamental, liberal, and others) with respect to *SS*; specifically,

fundamentalists were expected to have lower scores on *SS* compared to liberalists and other ideologies group (Hypothesis 2).

Various studies have revealed that males are more likely than females to engage in risk-taking behaviour (Doyle, Glynn, & Groseclose, 2002; Karon, Fleming, Steketee, & De Cock, 2001). In fact, *SS* was shown to be higher among the male population than their female counterparts (Whissell & Bigelow, 2003; Zuckerman, 1994). Accordingly, in the present study, it was hypothesised that males have a higher score on *SS* than females (Hypothesis 3).

Holt et al., (2006) indicated that religious preference has a significant impact on the level of risk-taking behaviour. As well, such risk-taking behaviour is also affected by strength of adherence of one's religious preference. Therefore, in the present study, it was predicted that different religious preferences have a significant influence on *SS*. In other words, Christianity and other religions (e.g., Islam, Buddhism, and Judaism) are expected to have significant effects on the total score of *SS* (Hypothesis 4).

METHOD

Participants

Participants ($N = 148$, Males = 49, Females = 89, Not stated gender = 10) were recruited from the student population at Laurentian University based on convenience sampling. They filled out the questionnaires voluntarily. They were recruited from the undergraduate ($n = 129$) and postgraduate programs ($n = 12$). Some participants ($n = 7$) did not state their degree level. The age range for the participants was from 18 – 40 years, with an age mean of 22.63 ($SD = 4.11$). Given the demographics of the region, half of the participants (50 %) were nominally Christian. For some undergraduate students, those who completed the questionnaires were given a bonus mark; however, providing this academic credit (or not) and the value of this credit was the right of the course instructor and thus did not apply to all students. Attending the survey session took approximately 35 minutes.

The researcher asked permission from professors to make an announcement in their classes to recruit participants for the present study. In the beginning of the announcement, students were informed about the objectives of the study, procedure, time, and place. Those who were interested to participate were asked to write their name and email address on a piece of paper that was circulated and were contacted later on by the researcher.

The Laurentian University Research Ethics Board (*LUREB*) gave permission to recruit participants for this study. Participants had the right to participate or withdraw from the study at anytime. Their identities remained confidential. As well, their responses

were kept under lock and key. In addition, this study passed an expedited review, which acknowledged that it had only negligible risks.

Table 1 presents a number of participants based on gender, program enrolled in, religious preference, and religious ideological classification.

Table 1. The number of participants as function of gender

Sex	Frequency	%
Male	49	35.5
Female	89	64.5
Total*	138	100

* 10 missing cases

According to Table 1, the number of participants according to their gender was 35.5 % male ($n = 49$) and 64.5 % female ($n = 89$). There were 138 participants who stated their gender and $n = 10$ participants who did not endorse it and were omitted. In total, there were 148 participants included in the present study. The age range of participants was from 18-40 with the mean age being 22.63 ($SD = 4.11$).

Table 2. The number of participants as function of enrolled program

Program	Frequency	%
Arts	20	14.5
Human Sciences	58	42.0
Science	50	36.2
Engineering	10	7.2
Total*	138	100

* 10 missing cases

Table 2 presents the number of students who participated in the study based on the programs they enrolled in. The highest number of participants in the present study came from human-science-related programs (e.g., psychology and sociology), a total of $n = 58$ (42.0 %). This was followed by science programs (e.g., physics and biology), with 50 (36.2 %) participants. Students majoring in arts programs (e.g., music and philosophy) were in the third position, $n = 20$ (14.5%). Those enrolled in engineering programs (e.g., mining and chemical engineering) were the lowest number of participants, $n = 10$ (7.2%).

Most students who participated in the present study affiliated themselves with Christian beliefs which made up 50 % ($n = 73$ participants) of the sample (see Table 3). The second highest position was held by no religious affiliation group, 28.8 % ($n = 42$ participants), including atheists and agnostics. Following the second position, other religious groups (e.g., Islam, Buddhism, and Judaism) contributed 21.2 % ($n = 31$ participants). These participants had religious affiliations other than Christian.

Table 3. The number of participants based on religious preference

Religious preference	Frequency	%
Christian	73	50
Other religions ¹	31	21.2
No religious affiliation ²	42	28.8
Total ³	146	100

1. *It included other religions, except Christian, e.g. Islam, Buddhism, and Judaism.*

2. *Included atheists and agnostics.*

3. *2 missing cases.*

Table 4 presents the number of participants who were recruited in the present study based on the religious ideological classification. Those who reported they use their own freedom in interpreting religious teaching (i.e., liberals) were in the highest number of participants ($n = 88, 71.0\%$). This was followed by those who understood a religious text or teaching without any interpretation based on their personal freedom ($n = 27, 21.8\%$). Those who categorized themselves neither fundamental nor liberal had the lowest number of participants ($n = 9, 7.3\%$).

Table 4. The number of participants based on religious ideological preference

Religious Ideological Classification	Frequency	%
Fundamental	27	21.8
Liberal	88	71.0
Other	9	7.3
Total*	124	100

* 24 missing cases

As indicated by Table 5 below, with respect to religious ideology (i.e., Fundamental and Liberal), the distribution, while significant ($\chi^2(3, N = 108) = 8.52, p < .05$), was very weak. These data were chiefly accounted for by lower observed numbers of Fundamentals in Human Sciences, and Liberals in Sciences, followed by higher numbers of Liberals in Human Sciences and Fundamentals in the Sciences.

Table 5. Chi-square calculation for religious ideology as function of study programs

Study Program	Religious Ideology		
	Fundamental	Liberal	Total
Arts	4 (3.4)	12 (12.6)	16
Observed Percentage	17.4	14.1	14.8
Human Science	4 (9.8)	42 (36.2)	46
Observed Percentage	17.4	49.4	42.6
Science	12 (8.3)	27 (30.7)	39
Observed Percentage	52.2	31.8	36.1
Engineering	3 (1.5)	4 (5.5)	7
Observed Percentage	13.0	4.7	6.5
Total	23	85	108

Expected frequencies are shown in parentheses

p < .05

Measures

Brief Multidimensional Measure of Religiousness/Spirituality: 1999 (*BMMRS*)

The Brief Multidimensional Measure of Religiousness/Spirituality (*BMMRS*) is a brief 38-item questionnaire (See Appendix C). The present study made use of the *BMMRS*, which covers aspects of religiosity and spirituality in specific detail (Fetzer Institute, 1999). It also included religious coping dimensions that people use in dealing with adversities of life that might lead them to risk-taking behaviours such as alcohol consumption and cigarette smoking. Furthermore, the *BMMRS* disclosed that those adolescents with either an affiliation or no affiliation had different scores on *BMMRS* measures, meaning to say that the scale can differentiate specific groups' scores (Harris et al., 2008).

This scale is regarded to be more comprehensive than one of the most frequently used religiosity scales, The Spiritual-Well Being Scale (*SWBS*) (Ellison, 1983). The *SWBS* consisted of two subscales: Religiosity Well-Being (*RWB*) and Existential Well-Being (*EWB*). The *RWB* was designed to assess one's sense of connection with God or higher power. The *EWB* measured one's sense of life purpose and meaning of life. However, the *SWBS* is inadequate to assess religiosity that has several dimensions (e.g., forgiveness and religion as coping mechanism). Provided the *BMMRS* includes more aspects of religion in compared to the *SWBS*, the *BMMRS* was expected to provide a better understanding in measuring religiosity since it covers several major religious dimensions (e.g., forgiveness, religious/spiritual coping, religious support, and private religious practices), which are not assessed by the *SWBS*. Many conducted studies

showed that the *BMMRS* has good reliability and validity scores (Cotton et al., 2006; Pearce, Jones, Schwab-Stone, & Ruchkin, 2003).

The *BMMRS* consisted of 12 domains that are described as follows:

1. Daily Spiritual Experience (*DSE*) measures one's transcendental experience in daily life. This domain is intended to gauge experiences rather than cognitive constructs. It measures one's perception of transcendental involvement (e.g., God, Spirit) in daily life (e.g., "I feel God's presence").

2. Meaning domain is designed to assess a meaning that is available in one's life and is extracted from any event in life. In relation to that, religion is one of alternatives for people to gain a meaning in life (e.g., "The events in my life unfold according to a divine or greater plan").

3. Values/Beliefs measures one's cognitive dimension of belief (religion) that is related to promoting positive expectations as well as offering structure for the interpretation of human suffering (e.g., "I feel a deep sense of responsibility for reducing pain and suffering in the world").

4. Forgiveness covers three dimensions, which are forgiveness of self, forgiveness of others, and forgiven by God (e.g., "I know that God forgives me").

5. Private Religious Practices (*PRP*) items represent some religious behaviours that occur outside of organized religious context such as saying grace before meal, watching religious TV program, and reading religious literature at home (e.g., "How often do you pray privately in places other than at church or synagogue").

6. Religious/Spiritual Coping (RSC) domains have a main objective to measure how religion aids believer to cope with stressful life events. There are two patterns of religious/spiritual coping: first, positive religious/spiritual coping in understanding and dealing with stressful life event (e.g., “Look to God for support”). Second, negative religious/spiritual coping as a reflection of dealing with stressful life event (e.g., “Feel that God is punishing”).

7. Religious Support (RS) items are meant to gauge a social relationship between individuals and others who are in the same place of worship (e.g., “If you were ill, how much would the people in your congregation help you out”).

8. Religious/Spiritual History (RSH) provides brief information on individual’s religious/spiritual participation over a life course somehow. This domain, assesses participant’s religious/spiritual life-changing (e.g., “Did you ever have a religious or spiritual experience that changed your life?”).

9. Commitment domain measures how much one has a commitment to his/her religion. It is reflected on how a person uses religion in all his/her dealings in life and how much time has been spent for religious related activities (e.g., “I try hard to carry my religious beliefs over into all my other dealings in life.”).

10. Organizational Religiousness (OR) assesses an individual’s participation in formal religious institution. For instance, it assesses one’s frequency of attending religious services (e.g., “How often do you go to religious services?”).

11. Religious Preference is designed to explain participant's traditional or denominational belief (e.g., "What is your current religious preference?").

12. Overall Self-Ranking (OSR) is a measure of how individuals rate themselves in general in terms of religiosity and spirituality (e.g., "To what extent do you consider yourself a religious person?")

The *BMMRS* has shown good reliability and validity (Fetzer Institute, 1999). With respect to its subdomains (12 domains except meaning and religious preference domains), they all had high internal consistencies ($\alpha > .70$) except for negative religious coping ($\alpha = .54$) and forgiveness ($\alpha = .66$) (Fetzer Institute, 1999). In another study, overall, the *BMMRS* measures exhibited good reliabilities ($\alpha > .70$) except for forgiveness ($\alpha = .68$), commitment ($\alpha = .59$), and religious/spiritual history ($\alpha = .45$) (Harris et al., 2008).

The *BMMRS* has been examined with regard to construct validity in relation to the Beck Depression Inventory-II (*BDI-II*) (Harris et al., 2008). Forgiveness as a subscale of the *BMMRS* was found to have a negative relationship with *BDI-II*. This particular relationship has indicated that the more people forgive themselves and others, the less likely they become to experience a depression. Forgiveness as one of the elements that are being encouraged by religion has a positive effect on providing a peace of mind that inversely related to a depression (Harris et al., 2008).

The construct validity of the *BMMRS* was also shown by a negative relationship between religious support that people receive from their congregation and *BDI-II* (Harris et al., 2008). Commitment that is also regarded to be an 'importance of religion' concept

had a negative relationship with *BDI-II*. Since religion is regarded to be an important aspect, carrying it out into all other dealings with life may bring down a level of depression. The *BMMRS* has demonstrated good convergent validity in both adult and adolescent populations. However, the scale still has a small number of items for each domain (Fetzer Institute, 1999).

Responses were scored on each domain of the *BMMRS*. The *BMMRS* has different Likert-scales for each domain (e.g., Daily spiritual experiences domain has 6-likert-scale, from 1 = Many times a day to 6 = Never or almost never, whereas Values/Beliefs domain has 4-likert-scale, from 1 = strongly agree to 4 = strongly disagree) (See Appendix A or B for details). The two variables, religious preference and religious ideological classification, were treated as discrete variables, whereas the rest of the variables in the *BMMRS* was classified as continuous. A total score of multidimensional religiosity was gained by reversing the obtained scores (except item 22, 26, 27, and 32) on nine subscales of the *BMMRS* (Daily Spiritual Experiences, Values/Beliefs, Forgiveness, Private Religious Practices, Religious Spiritual Coping, Religious Support, Commitment, Organizational Religiousness, and Overall) and summed them up. 165 is a maximum score while 33 is a minimum one for the *BMMRS*. Higher scores indicate a higher level of religiosity and spirituality.

There were twelve domains that were included in the *BMMRS* and had good internal reliabilities as follows: Daily spiritual experiences ($\alpha = .91$), Values/ Beliefs ($\alpha = .64$), Forgiveness ($\alpha = .66$), Private religious practices ($\alpha = .72$), Religious and spiritual coping, which consists of two domains: positive religious and spiritual coping ($\alpha = .81$) and negative religious and spiritual coping ($\alpha = .54$), Religious support, which consists of

two domains: congregation benefits ($\alpha = .86$) and congregation problems ($\alpha = .84$), Organizational religiousness ($\alpha = .82$), Overall self-ranking ($\alpha = .77$), Religious/Spiritual history, Commitment, Religious preference, and Meaning (Fetzer Institute, 1999). All the subscales were considered independent, yet still measured the same construct: religiosity and spirituality (Masters et al., 2009). The Meaning domain was eliminated in the present study since there is still disagreement among the authors about the appropriateness of the items measuring the construct (Fetzer Institute, 1999) (See Appendix C for the original version of the *BMMRS*).

Item 32, “During the last year about how much was the average monthly contribution of your household to your congregation or to religious causes”, is intended to measure household monthly expenses for religious related activities (under commitment domain) and it has been excluded in the present study. As suggested by Harris et al. (2008), this item has not contributed much more information since half of participants (i.e., the young population) did not respond to it. This sample (the young population) did not adequately report household monthly expenses for religious related activities.

For item 33 (See Appendix C for the original version of the *BMMRS*), “ In an average week, how many hours do you spend in activities on behalf of your church or activities that you do for religious or spiritual reasons?”, the original *BMMRS* provided only a blank space to fill out. However, in this study, there were some additional options that were added to the item (1 = Less than 5 hours, 2 = 5-10 hours, 3 = More than 10 hours). This was done with the purpose of making it easier to categorize as well as

analyze their responses (See Appendix B, item 32, for the modified version of the *BMMRS*).

By considering some items that may not be applicable to people with no religious affiliation, there was one additional option (5 = Not applicable) added into the *BMMRS*, specifically for items 23, 24, 25, 26, 27, and 31 (See Appendix B for the modified version of the *BMMRS*). Such an option was not available from the original *BMMRS* (See Appendix C). This additional option (5 = Not applicable) did not affect the maximum score of the *BMMRS*. It is because all responses to this option were converted into 0 (zero) so that it did not either increase or decrease the maximum score of the scale.

The additional question of one's religious denomination (See Appendix C, item 35, for the original version of the *BMMRS*) was replaced by the question of religious ideological classification (See Appendix B, item 35, for the modified version of the *BMMRS*). It was strictly limited to (1 = Fundamental/Conservative, 2 = Liberal/Flexible, 3 = Other) and each of the terms were defined clearly in the questionnaire. Additionally, both the religious preference and the religious ideological classification variables were presented in forced-choice format: the participants could respond with only one answer at a time. The specific instruction to the participants with regard to the two variables will be as follows: "Please indicate your current religious preference and religious ideological classification. You can only give one response to the available options that are presented below". Eventually, there was one new question (see item 37, Appendix B for the modified version of the *BMMRS*) that was added to the modified *BMMRS*, "In which faith or religion were you raised?". In overall, these modifications in the *BMMRS* did not affect the maximum score of the scale.

Sensation-Seeking Scale-V (SSS-V)

This 40-item questionnaire has been shown to be related to risk-taking behaviours such as drugs, alcohol, smoking, and volunteering for unusual activities. Those who score high on *SSS-V* tend to have friends who use alcohol as well as higher level of alcohol consumption (Viken, Kline, & Rose, 2005). The scale has been tested cross-culturally including USA, Spain, and Germany (Zuckerman, 1994). *SSS-V* consists of four domains (See Appendix A) as follows:

1. In the **Thrill and Adventure Seeking scale (TAS)**, the items are meant to measure physical activities that involve risks such mountain climbing, speeding in a car (e.g., “I often wish I could be a mountain climber”).

2. **Experience Seeking (ES)** consists of items measuring a desire to gain novel experience by having a dangerous lifestyle and traveling, (e.g., “I would like to take off on a trip with no pre-planned or definite routes, or timetable”).

3. **Disinhibition (Dis)** refers to the need to indulge in risk-taking behaviour that is reflected on many different ways such as consuming alcohol and sexual relationship, (e.g., “A person should have considerable sexual experience before marriage”).

4. **Boredom Susceptibility (BS)** indicates an aversive condition due to having a repetitive situation in life (e.g., “I get very restless if I have to stay around home for any length of time”)

Gray and Wilson (2007) revealed that the *SSS-V* has high internal reliabilities: TAS ($\alpha = .91$), ES ($\alpha = .79$), DIS ($\alpha = .83$), BS ($\alpha = .72$). In terms of validity, a high score on this scale was found to be positively correlated with extreme sports (Robinson, 1985; Wagner & Houlihan, 1994), drug use (Donohew et al., 1999), and excessive gambling

(McDaniel, 2002). In addition, those with high levels of *SS* tended to have a vocational preference that is thrilling and related to adventure job (e.g., firefighters, and mountain rescue (Roberti, 2004).

For the *SSS-V*, the given responses were analyzed on each domain and summed up to obtain the total score. All questions were presented in a force-choice format: the participants can respond with only one answer at a time for each question. If the response represents the *SS*, it was scored as one point. Due to an ethical consideration by The Laurentian University Research Ethics Board (*LUREB*), there were two items (9 and 13) deleted from the *SSS-V* that were eliminated (item 9: “I have tried marijuana or would like to” and “I would never smoke marijuana”, and item 13: “I find that stimulants make me uncomfortable” and “I often like to get high (drinking liquor or smoking marijuana)”) (See Appendix D, for the original *SSS-V*). Given that condition, the maximum score was 38 instead of 40. The scale has four domains and a maximum 10 points for each of them except for Experience Seeking (*ES*) (item 9 eliminated) and Disinhibition (*Dis*) (item 13 eliminated), with maximum 9 points. A high score indicated a high level of *SS* personality. The directions of filling out the questionnaire will be as follows:

Each of the items below contains two choices A and B. Please indicate (circle) which of the choices most describes your likes or the way you feel. In some cases you may find items in which both choices describe your likes or feelings. Please choose the one which better describes your likes or feelings. In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. Do not leave any items blank. It is important you respond to all items with only one choice, A or B. We are interested only in

your likes or feelings, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers as in other kinds of tests. Be frank and give your honest appraisal of yourself.

Procedure

The participants were informed about the purpose of the study: investigating the relationship between religion and *SS*. Their participation in the study was voluntary; they could withdraw at any time during the study. Once they agreed to participate, they were given the two questionnaires (*SSS-V* and *BMMRS*) and two informed-consent forms to sign: one for them and the other one for the researcher (see Appendices A, B, and E).

Participants were informed about the time and venue to fill out the questionnaires in advance. As they arrived in a classroom that has been booked, they were given standardized information about the study including the length of time that was needed to participate in the current study. Before distributing the questionnaires, they were being asked if there was any question or particular issues that they wanted to address. As soon as a participant completed the questionnaires, he or she was approached by the researcher so that he or she could hand the questionnaires back. When all questionnaires were returned, they were all thanked and allowed to leave the classroom.

Apart from that, in order to achieve one of the key purposes of the study, participants were asked to state their religious preference and religious ideological classification. Additional information to item 35 was added, which asked about one's religious preference (See Appendix B) in the modified version of the *BMMRS* (See Appendix C for the original version of the *BMMRS*). In the original *BMMRS*, there was

only a blank space for participants to state their religious preference. The present study limited the options (1 = Catholic, 2 = Protestant, 3 = Jewish, 4 = Islam, 5 = Agnostic, 6 = Atheist, 7 = Other) so it was in line with its objectives.

With regard to analysis, coded item scores (the *BMMRS*) were reversed so that higher levels of frequency, experience, and agreement were pointed out by higher scores, data were analyzed by using the Statistical Package for the Social Sciences (*SPSS*). There were three major methods that were used: Analysis of Variance (*ANOVA*), *t-test*, and regression. *ANOVA* was utilized to determine whether there were significant differences among the religious preference group and the religious ideological classification group in terms of religiosity as well as *SS*. An independent *t-test* was used to reveal gender differences with respect to religiosity and *SS*. Regression as an optional method of analysis in this particular study was applied to investigate the predictive value between religiosity and *SS*, religious preference and *SS*, and religious ideological classification and *SS*.

The study had 2 x 3 x 2 (Gender x Religious Preference x Religious Ideological Classification) factorial design. Gender had two values (male and female), religious preference had three values (Christian, other religion, and no religious preference (e.g., atheistic, and agnostic), and religious ideological classification had two values (fundamental and liberal). For each cell of the factorial design, there were at least 10 participants. Thus, the number of participants for the present study was 148.

RESULTS

The current findings rejected the null hypothesis of no negative relationship or supported hypothesis 1, which predicted a negative relationship between religiosity and SS. There was a moderate and a significant negative relationship between the two variables ($r = -.33, p < .001$).

Contrary to what was predicted in Hypothesis 2, different religious ideological classifications have a significant impact on SS (Zuckerman & Neeb, 1980), current findings showed that there were no significant differences with regard to SS, $F(2, 121) = 1, p > .05$.

Contrary to hypothesis 3, there was no significant difference found between males ($M = 18.67, SD = 4.85$) and females ($M = 17.15, SD = 6.68$) in terms of SS, $t(136) = 1.41, p > .05$

Table 6. Total scores of Sensation Seeking Scale-V (SSS-V) by Religious Preference

Variable	Christian (<i>n</i> = 73)		Other religions (<i>n</i> = 31)		No religion (<i>n</i> = 42)		F	Sig.
	M	SD	M	SD	M	SD		
Total score of SSS-V	17.19	6.02	15.74	6.06	20.05	5.80	5.18	< .05

As noted in Table 6, the result was consistent with Hypothesis 4 (Holt et al., 2006), that Christianity and other religions were expected to have significant effects on the level of SS, $F(2, 143) = 5.18, p < .05$. *Post hoc* testing (*Tukey HSD*) showed that those who considered themselves to be Christians had lower levels of SS ($M = 17.19, SD = 6.02$) than did those with no religious affiliation (i.e., atheists or agnostics) ($M = 20.04,$

$SD = 5.80$). Similarly, those who affiliated themselves with religions ($M = 15.74$, $SD = 6.06$), other than Christian, reported that they who had lower levels of *SS* than people with no religious affiliation ($M = 20.04$, $SD = 5.80$).

The current study utilized *Tukey HSD* test because this particular post-hoc test is able to maintain alpha levels at their intended values in compared to Least Significant Difference (*LSD*), another type of post-hoc test, which does not have stable alpha values. In addition, *Tukey HSD* can also be employed to unequal sample size.

Religiosity and sensation-seeking behaviour

Table 7 showed that all subscales of religiosity were also negatively correlated to total score of *SS*. The highest negative correlation was held by *OSR* ($r = -.35$, $p < .01$) and followed by *RSC* ($r = -.34$, $p < .01$) and Commitment ($r = -.34$, $p < .01$). The more people felt that there was a God or higher spiritual involvement in their daily lives, the lower ratings on the *SSS-V*, Daily Spiritual Experiences (*DSE*) ($r = -.30$, $p < .01$). Both Values/Beliefs ($r = .28$, $p < .01$) and *PRP* ($r = .28$, $p < .01$) had the same score of relationship with total score of *SS*. Similar to the finding of Zuckerman and Neeb (1980), frequency of attending religious services (e.g., in church, synagogue, and mosque), *OR* ($r = -.20$, $p < .05$), was revealed to be significantly related to lower degree of *SS*. Eventually, the more people turned to religion to cope with their problems, *RS* ($r = -.34$, $p < .01$), and being easy to forgive themselves and others, Forgiveness ($r = -.17$, $p < .05$), the less vulnerable they became to *SS*.

Table 7. Correlations between subscales of religiosity and total score of Sensation-Seeking

Subscales of the <i>BMMRS</i>	Sensation-Seeking
Daily Spiritual Experiences	-.30**
Values/Beliefs	-.28**
Forgiveness	-.17*
Private Religious Practices	-.28**
Religious Spiritual Coping	-.34**
Religious Support	-.17**
Commitment	-.34**
Organizational Religiousness	-.20*
Overall	-.35**

* $p < .05$

** $p < .01$

Furthermore, all subscales of Sensation-Seeking Scale-V (*SSS-V*) were negatively correlated with those of religiosity (the *BMMRS*) (See table 8). With regard to *TAS*, that subscale had only a significant negative relationship with *OSR* ($r = .20, p < .05$). *ES* had significant negative correlations with all subscales of religiosity except with Forgiveness; *ES* was in negative relationships with *DSE* ($r = -.24, p < .01$), Values/Beliefs ($r = -.28, p < .01$), *PRP* ($r = -.27, p < .01$), *RSC* ($r = -.34, p < .01$), *RS* ($r = -.21, p < .01$), Commitment ($r = -.27, p < .01$), *OR* ($r = -.19, p < .05$), and *OSR* ($r = -.25, p < .01$). In terms of *Dis* subscale, it was revealed to have significant negative relationships with all subscales of religiosity: *DSE* ($r = -.41, p < .01$), Values/Beliefs ($r = -.32, p < .01$),

Forgiveness ($r = -.23, p < .01$) PRP ($r = -.41, p < .01$), RSC ($r = -.36, p < .01$), RS ($r = -.30, p < .01$), Commitment ($r = -.42, p < .01$), OR ($r = -.30, p < .01$), and OSR ($r = -.34, p < .01$). Eventually, BS was only correlated with Values/Beliefs ($r = -.17, p < .05$) and OSR ($r = -.18, p < .05$).

Table 8. Intercorrelations between the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS) and the Sensation Seeking Scale-V (SSS-V)

Subscale	Thrill and Adventure Seeking	Experience Seeking	Disinhibition	Boredom Susceptibility
Daily spiritual Experiences	-.07	-.24**	-.41**	-.11
Values/Beliefs	-.02	-.28**	-.32**	-.17*
Forgiveness	-.03	-.13	-.23**	-.07
Private Religious Practices	-.04	-.27**	-.41**	-.05
Religious Spiritual Coping	-.16	-.34**	-.36**	-.07
Religious Support	-.02	-.21**	-.30**	-.05
Commitment	-.12	-.27**	-.42**	-.13
Organizational Religiousness	-.01	-.19*	-.30**	-.08
Overall	-.20*	-.25**	-.34**	-.18*

* $p < .05$

** $p < .01$

SSS-V, BMMRS, Religious Ideology, and Religious Preference.

One-way *ANOVAs* were carried out to see whether there were significant differences among people with different religious ideological classifications with respect to the various subscales of *SS*. *ANOVAs* revealed that there was only one significant difference with respect to the *Dis* subscale, $F(2,121) = 4.09, p < .05$, with liberals scoring higher ($M = 4.28, SD = 2.37$) than fundamentals ($M = 2.89, SD = 2.04$).

Table 9. Means of subscales of the Sensation Seeking Scale-V (SSS-V) by religious preference

	Christian (<i>n</i> = 73)		Other religions (<i>n</i> = 31)		No religion (<i>n</i> = 42)		F	Sig.
	M	SD	M	SD	M	SD		
Thrill and Adventure Seeking	6.26	2.58	6.45	2.45	6.00	2.69	.29	> .05
Experience Seeking	4.47	1.85	3.65	2.03	5.40	2.19	7.15	< .01
Disinhibition	3.74	2.22	2.61	2.20	5.10	2.02	12.10	< .001
Boredom Susceptibility	2.73	2.03	3.00	2.18	3.55	1.87	2.21	> .05

As seen in Table 9, there was a significant effect of different religious preferences on the *SS* subscales, particularly on *ES*, $F(2, 143) = 7.15, p < .01$, and *Dis*, $F(2, 143) = 12.10, p < .01$. *Post-hoc* comparison using the *Tukey HSD* test showed that people with no religious affiliation ($M = 5.40, SD = 2.19$) reported having higher scores than Christians did ($M = 4.47, SD = 1.85$) with respect to *ES*. Those with no religious affiliation ($M = 5.40, SD = 2.19$) also had a higher level of *ES* in comparison to those with affiliations to other religions that are non-Christian ($M = 3.65, SD = 2.03$). However,

no significant difference was found between other religions and Christianity in terms of *ES*.

With respect to the *Dis* subscale, a significant difference was revealed between Christian participants ($M = 3.74, SD = 2.22$) and those who believe in other religions ($M = 2.61, SD = 2.20$). Those who affiliated themselves with Christian beliefs ($M = 3.74, SD = 2.22$) had lower scores than those who affiliated themselves with no religious affiliation ($M = 5.10, SD = 2.02$). As well, other religions ($M = 2.61, SD = 2.20$) reported a lower score on the *Dis* compared to those with no religious affiliation ($M = 5.10, SD = 2.02$).

Gender, *SSS-V*, and religiosity

Among the four subscales of *SS* (*TAS*, *ES*, *Dis*, and *BS*) (See table 10), males were only significantly different from females with respect to *BS*; males ($M = 3.51, SD = 1.82$) had a higher level than did females ($M = 2.79, SD = 2.06$), $t(136) = 2.06, p < .05$. Males were more likely to experience boredom than were females, particularly in doing monotonous actions. This particular result suggested that males are more prone to risk-taking behaviour than are females in order to reduce a discomfort of getting bored.

Table 10. T-tests of subscales of the Sensation Seeking Scale-V (SSS-V) between the two sexes

Subscales	Male (<i>n</i> = 49)		Female (<i>n</i> = 89)		t	Sig.
	M	SD	M	SD		
Thrill and Adventure Seeking	6.70	2.28	5.90	2.72	1.74	>.05
Experience Seeking	4.59	1.99	4.48	2.10	.30	>.05
Disinhibition	3.88	2.23	3.97	2.40	-.21	>.05
Boredom Susceptibility	3.51	1.82	2.79	2.06	2.06	<.05

Besides, a significant difference was not found between the two sexes (Males: $M = 84.63$, $SD = 35.77$, Females: $M = 81.73$, $SD = 28.90$) with respect to total score on religiosity (the *BMMRS*), $t(66.04) = .45$, $p > .05$

Predicting *SS* from Religiosity and Religious Preference

Since there was a negative correlation between religiosity and *SS*, further analyses were carried out. The regression analysis showed that a higher level of one's religiosity predicted the lower level of *SS* even if it is only by a small degree, $b = -.06$, $t(134) = -4.03$, $p < .001$. In fact, religion also explained 11 % of proportion of variability in *SS*, $R^2 = .11$, $F(1,134) = 16.27$, $p < .001$.

Moreover, the religious preference variable (i.e., Christian, Other religions, and No religious affiliation) was subjected to regression analyses in order to predict *SS*, with the Christian group as a reference category. Results showed that Christians were 2.84

times lower than those with no religious affiliation with respect to *SS*, $F(2,143) = 5.18$, $p < .01$, $R^2 = .07$. However, among religious ideological groups (Fundamental, Liberal, and Others), not one was a significant predictor of *SS*. Thus, religious affiliation in Christianity predicted low *SS*: the more they follow Christian teachings, the less likely they rate on the *SSS-V*.

Table 11. Predictors of Self-Reported Sensation Seeking Behaviour

Variable	B	95% CI
Constant	17.19*	[15.81, 18.56]
Other religions	-1.44	[-3.96, 1.07]
No religion	2.84**	[.57, 5.11]
R^2	.07	
F	5.18	

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

*** *Christian as reference category*

DISCUSSION

The main objective of the present study was to reveal the relationship between religiosity and SS. Several hypotheses were examined in the current study. The Null Hypothesis 1 was rejected by the present finding: the findings showed a negative correlation between religion and SS.

Such a relationship can be explained by two mechanisms suggested by Wallace et al. (2007) in examining relationships between religion and deterrence of risk-taking behaviour. First, it is mediated by an individual religiosity process that refers to a condition in which religion has a significant impact on one's behaviour via morals, values, and beliefs. Those who follow religion have a higher likelihood of following religious morality and values. For such people, this morality serves as a guide for any behaviour that they perform in daily life. For instance, Islam does not allow its followers to drink alcohol nor engaged in intoxication. Due to that, individuals' frame of morality and rules is also affected, particularly in drinking behaviour. As a result, individuals who follow Islam are less likely to engage in drinking behaviour as a way of getting SS. Thus, religion affects individuals' behaviours via moral values, which are in line with religious norms.

Second, the contextual religiosity process, which implies religion prevents risk-taking behaviour via moral communities, which serve as a reference for religious individuals, can reduce the expression of SS. Mingling with others who have the same beliefs and faiths encourages individuals to be more conscious of their religious teachings. In this way, they may even feel more strongly that there is a community that monitors their behaviours so they go on behaving accordingly. Apart from that, people do

not want to feel isolated and marginalized by their communities. If they do not follow the acceptable behaviours of their religious community, they may be excluded. Engaging in *SS* (e.g., binge drinking) is not in line with religious values; consequently, *SS* is not encouraged by religious communities. Since a religious community functions as a “social watchdog” over the individual’s behaviour, its people are less likely to commit acts of *SS*. Additionally, *SS* is not only regarded as an individual difference (psychological element), but also can be affected by religious belief (social element).

To the knowledge of this researcher, no previous studies were conducted to examine the relationship between multidimensional religiosity and *SS*. The present study may shed light on how religion is related to the expression of *SS*. Apart from the support found for hypothesis 1, a regression analysis in the present study indicated that a high level of individuals’ religiosity can moderately predict a lower level of *SS*. However, only 11 % of variability in *SS* was accounted by individuals’ level of religiosity.

Among nine subscales of religiosity, the highest score of relationship to *SS* was held by *OSR*. The more people perceive themselves as being spiritual and religious, the lower level of *SS* they have. For religious and spiritual people, this is to be maintained at the highest point of purity. Since maintaining a soul is considered to be an important component in religious life, then keeping the good health of the body as the home of soul also becomes a significant element. Thus, reducing and avoiding an engagement in *SS* may serve to be a way of keeping a body as the soul’s home.

Hypothesis 2 predicted that religious ideological classification (i.e., fundamental, liberal, and others) would have a significant impact on *SS*. However, the

present finding did not support hypothesis 2: there was no significant difference among individuals with different religious ideological classifications in terms of a level of *SS*.

Nevertheless, when it comes to individuals with different religious preferences, *SS* was found to be significantly different among them. This result is consistent with Hypothesis 4's prediction in which Christianity and other religions have significant impacts on *SS*. This particular finding supported the study of Holt et al., (2006), which investigated different religious beliefs in the United States significantly affected different levels of risk-taking behaviour. Specifically, that finding also showed that agnostic and atheist groups had a higher score on *SS* than did conventional religious group (i.e., Christianity, Islam, Judaism, and Buddhism). That is in line with Zuckerman and Neeb's (1980) study.

As well as reporting the non-significant impact of religious ideology on *SS*, the significant impact of religious preference on that variable has also been noted. Such a significant effect may have been influenced by the unique values characteristics of different religions. Such values can result in different behaviours by the religion's followers. These behaviours have been reflected in different scores on *SS* among people with different religions. However, those with religious affiliation, regardless of types, still had a lower score on *SS* than did those with no religious affiliation.

With regard to gender differences, the present findings did not support the prediction of Hypothesis 3 in which males would be more likely than females to experience *SS*. In fact, the current study did not agree with previous studies, which showed that males are involved more in *SS* than females (Whissell & Bigelow, 2003; Zuckerman, 1994).

Gender differences that were reflected on the total score of *SS* may have been affected by an elimination of two items on the Sensation-Seeking Scale-V (*SSS-V*) in the present study: item 9 (“I have tried marijuana or would like to” and “I would never smoke marijuana”) and item 13 (“I find that stimulants make me uncomfortable” and “I often like to get high (drinking liquor or smoking marijuana)”. Studies have reported that there was a significant difference between males and females in terms of using marijuana; males utilized more marijuana than did females (Bachman, Wallace, Omalley, Johnston, Kurth, & Neighbors, 1997; Williams, Van Dorn, Ayers, Bright, Abbott, & Hawkins, 2007). Having eliminated the above-mentioned two items, the validity of the current study may have been affected for the lack of gender differences with respect to a total score of *SS*. Small number of participants recruited for the present study may have also contributed to such lack of gender difference on the total score of *SSS-V*. In addition, lack of gender difference may have also reflected self-selection sample bias because there was only 35 % of the sample who were males. The current study has shown that academic training has a significant relationship to religious ideology. However, the data (Table 5) were too weak to pursue.

Religious Preference and *SSS-V*

Among three different categories (i.e., Christian, Other religions, and No religion), those with no religious affiliation had the highest scores on *SS*. One of the most obvious characteristics of sensation-seekers is to seek novelty (Ellis, 1987). Since following a religious dogma and activity may become monotonous, which is opposite to a need for novelty, high sensation-seekers are less likely to have a religious commitment

(Ellis, 1987; Zuckerman & Neeb, 1980). However, one should keep in mind that the present study examined the relationship between religiosity and *SS*. Therefore, making a causal inference between religious preference and *SS* is beyond the range of the present study. In addition, having found a significant effect of different types of religion on *SS*, it is possible that a relationship between religiosity and *SS* may depend on the type of religion that a person follows.

Religious Preference and Subscales of *SSS-V*

A further analysis on the subscales of *SSS-V* revealed that people with no religious affiliation, in terms of *ES* and *Dis*, scored significantly higher than Christians as well as people with other religions. Seeking new experiences may involve risks to some extent (e.g., going to a place without any knowledge about it). Those with no religion have fewer feeling of restriction for performing some actions that are prohibited by religious values, while those who have a religion may have a need too to seek new experiences in their life. However, by following religious teaching they may be kept away indirectly from risky situations that are not in line with their religion. They do not as often yield to their temptations because they are restricted by their religion. Those with no religion are less likely to be inhibited about succumbing to *SS*. Consequently, having no religious affiliation may lead individuals to be more vulnerable to risks.

Subscales of *SSS-V* and gender

Despite no significant difference between the two genders on the total score of *SSS-V*, one of the subscales of *SS* (*BS*) has shown that males had a higher level than did

females. *BS* is designated to gauge an aversion to repetition, boredom, and dull people. This subscale, to some extent, has reflected a higher propensity of risk-taking behaviour among the male population. This particular result suggested that males are more to act risky behaviours in order to release a discomfort of getting bored. The higher score that individuals have, the less likelihood they will endure boring activities. One of the most outstanding characteristics of the sensation-seeker is to find novelty (Zuckerman & Neeb, 1980). If males are more likely to suffer boredom than females are, they are more likely to seek novelty that is usually correlated with risk-taking behaviour. Therefore, males become more prone to risk exposure than do females.

Inter-correlations between subscales of the *BMMRS* and the *SSS-V*

TAS was found to be only significantly correlated to *OSR*. Those who regard themselves as religious and spiritual were less likely to engage in harmful behaviours on the basis of getting thrills and adventure. Some people may have the drive to get such thrills and adventure, but viewing themselves as religious and spiritual may reduce that. Those religious people may have calmness and satisfaction in a spiritual sense from religion. Accordingly, they become less likely to seek thrilling and adventurous alternatives that may produce satisfaction and release.

Experience Seeking (*ES*) was significantly related to all subscales of the *BMMRS* except Forgiveness. Among nine subscales of religiosity, *RSC* had the highest score of relationship with *ES*. By considering religion as a source of coping mechanism, the need for gaining new experiences, particularly among young adults, acquired through harmful behaviours, may have been constrained. Religion encourages its followers to act

in a positive way. Young adults who consider religion as a primary source of dealing with problems (e.g., need to explore the world in order to gain new experiences) may tend to act positively. Consequently, committing harmful behaviours as a way of getting new experiences, particularly among religious young adults, does not appear to be viable option in dealing with problems.

Disinhibition (*Dis*) had negative relationships with all subscales of religiosity. Commitment appeared to have the highest score of relationship with *Dis*, followed by both *PRP* and *DSE*. The higher commitment to religion that people have, the more they become aware of themselves. Having a strong commitment to religious teachings serves as a reminder for believers to ensure their actions are not against religious rules. At the same time, practicing religion in a personal way and being more aware of the involvement of God in daily life can strengthen one's commitment to religion. Therefore, holding a firm religious commitment through practicing religious activities personally as well as having a sense of relationship with God in daily life can help people to inhibit themselves from committing harmful behaviours.

Boredom Susceptibility (*BS*) had negative correlations with Values/Beliefs, which is intended to measure the cognitive dimensions of one's religious belief related to positive expectations in difficult situations. Those who feel boredom are less likely to have a positive outlook in certain actions and situations that make them feel bored. Maintaining positive hope and expectation in unpleasant situations (e.g., boredom) may help them overcome boredom. As a result, they are less vulnerable to experiencing boredom that may lead them to take risk-taking behaviour.

With respect to all subscales of *SSS-V*, the way people regard themselves both religiously and spiritually has a significant effect on decreasing the scores of the four subscales of *SSS-V*. The more they think religiously and spiritually about themselves, the less prone they become to engage in *SS*. However, this effect was moderate.

Risk-taking behaviours, *SS*, and religiosity

Most studies showed that a lower level of *SS* is correlated with a lower degree of risk-taking behaviours (Brown, Parks, Zimmerman, & Phillips, 2001; Brown, Salsman, Brechtinb, & Carlson, 2007; Chitwood, Weiss, & Leukefeld, 2008; Sussman, Skara, Rodriguez, & Pokhrel, 2006). In other words, the two are positively correlated. Since the present study indicated that *SS* is negatively related to religiosity, it is implied that a high level of religiosity would help individuals reduce the number of risk-taking behaviours. This study therefore tentatively suggests that promoting positive religious values and activities can aid individuals in avoiding and/or reducing their involvement in risk-taking by reducing the level of *SS*.

On the other hand, a high level of *SS* can contribute to creativity, which is a positive aspect of functioning (Zuckerman, 1994). Since religion contributes to a lower level of *SS*, it is implied that religion hampers creativity. The resolution to this particular notion may depend on the specific religion and how it is applied by individuals. For instance, not all religions have the same way of regulating the behaviours of their followers. In the past, many churches (e.g., in the Spanish Inquisition) persecuted those who disagreed with their doctrines and this understandably impeded creativity and critical thinking. However, such persecutions did not uniformly occur.

Moreover, religion and creativity also rely on how individuals interpret and apply their religion; some people are open-minded and some are not. Such different cognitive states of perceiving religion can have different consequences on behaviours.

The present study found that higher religiosity (i.e., fundamentalist) is usually risk-averse. The more religious people are, the less likely they are to engage in risk-taking behaviour. Interestingly, many acts of terrorism have been carried out in the name of religion. Perhaps such terrorists have high levels of *SS*. Acts of terrorism involve complex behaviours and these behaviours certainly need further investigation. The imagine of a fundamentalist Islamic male youth as a threat to society is counter-intuitive to current findings.

Limitations of the study and suggestion for future studies

Social desirability is one of the limitations of this study. There is always the possibility of participants to respond falsely and hide or distort their religious identities as well as their *SS*. Since the design of this study was cross-sectional, it therefore limited the formation of causal relationships. Future studies should incorporate social desirability controls.

Due to the constraints of sample availability, more than half of the participants recruited for this study were Christians. The results of the study may therefore be biased toward a Christian perspective. The small sample size ($N = 148$) should be taken into consideration since it affects the validity of study. Future studies should also include people with different religious beliefs other than Christianity. In this way, a more differentiated picture of religiosity and *SS* may emerge.

The mixture of religious beliefs and the university culture environment may also have affected this study's findings. Non-college or university samples are needed to replicate current findings. Furthermore, this study is limited to the university student population. The results of the study should not be generalized to other populations because they are not represented. Also, several demographic variables (e.g., family income and race) were not provided and controlled for. These variables may have a potential effect on an individual's way of perceiving religion and the development of personality. For instance, low income and poverty may be overrepresented in terms of conservative beliefs.

Since this is the first study to examine the relationship between multidimensional religiosity and the *SS* personality trait, further research is needed to reveal a better understanding of the interaction between the two variables. In particular, considering a level of religiosity is influenced by social contexts (e.g., family, peers, and classmates) that are significant to participants may provide a better understanding of how religion affects several dimensions of human life in relation to *SS*. Future research is also needed to replicate the effect of religious ideological classifications (e.g., fundamental and liberal) on *SS*.

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Appendix A: Modified version of Sensation-Seeking Scale-V (SSS-V)

Directions: Each of the items below contains two choices, A and B. Please indicate (circle) on your answer sheet which of the choices most describes your likes or the way you feel. In some cases you may find items in which both choices describe your likes or feelings. Please choose **the one** which better describes your likes or feelings.

In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. Please try to answer each item.

It is important you respond to all items with **only one choice**, A or B. We are interested only in your likes or feeling, not in how others feel about these things or how one is supposed to feel. There is no right or wrong answers as in other kinds of tests. Be frank and give your honest appraisal of yourself.

1. A. I like “wild” uninhibited parties
B. I prefer quiet parties with good conversation
2. A. There are some movies I enjoy seeing a second or even a third time
B. I can’t stand watching a movie that I’ve seen before
3. A. I often wish I could be a mountain climber
B. I can’t understand people who risk their necks climbing mountains
4. A. I dislike all body odors
B. I like some for the earthly body smells
5. A. I get bored seeing the same old faces
B. I like to comfortable familiarity of everyday friends
6. A. I like to explore a strange city or section of town by myself, even if it means getting lost
B. I prefer a guide when I am in a place I don’t know well
7. A. I dislike people who do or say things just to shock or upset others
B. When you can predict almost everything a person will do and say he or she must be a bore
8. A. I usually don’t enjoy a movie or play where I can predict what will happen in advance
B. I don’t mind watching a movie or a play where I can predict what will happen in advance
9. A. I would not like to try any drug which might produce strange and dangerous effects on me
B. I would like to try some of the new drugs that produce hallucinations
- 10.A. A sensible person avoids activities that are dangerous
B. I sometimes like to do things that are a little frightening
- 11.A. I dislike “swingers” (people who are uninhibited and free about sex)
B. I enjoy the company of real “swingers”

- 12.A. I like to try new foods that I have never tasted before
B. I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness
- 13.A. I enjoy looking at home movies or travel slides
B. Looking at someone's home movies or travel slides bores me tremendously
- 14.A. I would like to take up the sport of water skiing
B. I would not like to take up water skiing
- 15.A. I would like to try surf boarding
B. I would not like to try surf boarding
- 16.A. I would like to take off on a trip with no preplanned or definite routes, or timetable
B. When I go on a trip I like to plan my route and timetable fairly carefully
- 17.A. I prefer the "down to earth" kinds of people as friends
B. I would like to make friends in some of the "far out" groups like artists or "punks"
- 18.A. I would not like to learn to fly an airplane
B. I would like to learn to fly an airplane
- 19.A. I prefer the surface of the water to the depths
B. I would like to go scuba diving
- 20.A. I would like to meet some persons who are homosexual (men or women)
B. I stay away from anyone I suspect of being "gay or lesbian"
- 21.A. I would like to try parachute jumping
B. I would never want to try jumping out of a plane with or without a parachute
- 22.A. I prefer friends who are excitingly unpredictable
B. I prefer friends who are reliable and predictable
- 23.A. I am not interested in experience for its own sake
B. I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional, or illegal
- 24.A. The essence of good art is in its clarity, symmetry of form and harmony of colors
B. I often find beauty in the "clashing" colors and irregular forms of modern paintings
- 25.A. I enjoy spending time in the familiar surroundings of home
B. I get very restless if I have to stay around home for any length of time
- 26.A. I like to dive off the high board
B. I don't like the feeling I get standing on the high board (or I don't go near it at all)
- 27.A. I like to date members of the opposite sex who are physically exciting
B. I like to date members of the opposite sex who share my values
- 28.A. Heavy drinking usually ruins a party because some people get loud and boisterous
B. Keeping the drinks full is the key to a good party

- 29.A. The worst social sin is to be rude
B. The worst social sin is to be a bore
- 30.A. A person should have considerable sexual experience before marriage
B. It's better if two married persons begin their sexual experience with each other
- 31.A. Even if I had the money I would not care to associate with flight rich persons like those in the "jet set"
B. I could conceive of myself seeking pleasures around the world with the "jet set"
- 32.A. I like people who are sharp and witty even if they do sometimes insult others
B. I dislike people who have their fun at the expense of hurting the feelings of others
- 33.A. There is altogether too much portrayal of sex in movies
B. I enjoy watching many of the "sexy" scenes in movies
- 34.A. I feel best after taking a couple of drinks
B. Something is wrong with people who need liquor to feel good
- 35.A. People should dress according to some standard of taste, neatness, and style
B. People should dress in individual ways even if the effects are sometimes strange
- 36.A. Sailing long distances in small sailing crafts is foolhardy
B. I would like to sail a long distance in a small but seaworthy sailing craft
- 37.A. I have no patience with dull or boring persons
B. I find something interesting in almost every person I talk to
- 38.A. Skiing down a high mountain slope is a good way to end up on crutches
B. I think I would enjoy the sensations of skiing very fast down a high mountain slope

**Appendix B: Modified version of the
BMMRS**

**Brief Multidimensional Measure of
Religiousness/Spirituality: 1999**

Instruction:

**Please circle the answer that best
describes your situation**

Daily Spiritual Experiences

The following questions deal with possible
spiritual experiences. To what extent can
you say you experience the following:

1. I feel God's presence.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
2. I find strength and comfort in my religion.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
3. I feel deep inner peace or harmony.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
4. I desire to be closer to or in union with
God.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
5. I feel God's love for me, directly or
through others.

1. *Many times a day*
2. *Every day*
3. *Most days*
4. *Some days*
5. *Once in a while*
6. *Never or almost never*

6. I am spiritually touched by the beauty of
creation.

1. *Many times a day*
2. *Every day*
3. *Most days*
4. *Some days*
5. *Once in a while*
6. *Never or almost never*

Values/Beliefs

7. I believe in a God who watches over me.
 1. *Strongly agree*
 2. *Agree*
 3. *Disagree*
 4. *Strongly disagree*
8. I feel a deep sense of responsibility for
reducing pain and suffering in the world.
 1. *Strongly agree*
 2. *Agree*
 3. *Disagree*
 4. *Strongly disagree*

Forgiveness

Because of my religious or spiritual beliefs:

9. I have forgiven myself for things that I
have done wrong.
 1. *Always or almost always*
 2. *Often*
 3. *Seldom*
 4. *Never*
10. I have forgiven those who hurt me.
 1. *Always or almost always*
 2. *Often*
 3. *Seldom*
 4. *Never*

11. I know that God forgives me
1. *Always or almost always*
 2. *Often*
 3. *Seldom*
 4. *Never*

Private Religious Practices

12. How often do you pray privately in places other than at church or synagogue?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*
 5. *A few times a month*
 6. *Once a month*
 7. *Less than once a month*
 8. *Never*
13. Within your religious or spiritual tradition, how often do you meditate?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*
 5. *A few times a month*
 6. *Once a month*
 7. *Less than once a month*
 8. *Never*
14. How often do you watch or listen to religious programs on TV or radio?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*
 5. *A few times a month*
 6. *Once a month*
 7. *Less than once a month*
 8. *Never*
15. How often do you read the Bible or other religious literature?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*

5. *A few times a month*
6. *Once a month*
7. *Less than once a month*
8. *Never*

16. How often are prayers or grace said before or *after* meals in your home?
1. *At all meals*
 2. *Once a day*
 3. *At least once a week*
 4. *Only on special occasions*
 5. *Never*

Religious and Spiritual Coping

Think about how you try to understand and deal with major problems in your life. To what extent is each of the following involved in the way you cope?

17. I think about how my life is part of a larger spiritual force.
1. *A great deal*
 2. *Quite a bit*
 3. *Somewhat*
 4. *Not at all*
18. I work together with God as partners.
1. *A great deal*
 2. *Quite a bit*
 3. *Somewhat*
 4. *Not at all*
19. I look to God for strength, support, and guidance.
1. *A great deal*
 2. *Quite a bit*
 3. *Somewhat*
 4. *Not at all*
20. I feel God is punishing me for my sins or lack of spirituality.
1. *A great deal*
 2. *Quite a bit*
 3. *Somewhat*
 4. *Not at all*

21. I wonder whether God has abandoned me.

1. *A great deal*
2. *Quite a bit*
3. *Somewhat*
4. *Not at all*

22. I try to make sense of the situation and decide what to do without relying on God.

1. *A great deal*
2. *Quite a bit*
3. *Somewhat*
4. *Not at all*

23. To what extent is your religion involved in understanding or dealing with stressful situations in any way?

1. *Very involved*
2. *Somewhat involved*
3. *Not very involved*
4. *Not involved at all*
5. *Not applicable*

Religious Support

These questions are designed to find out how much help the people in your congregation would provide if you need it in the future.

24. If you were ill, how much would the people in your congregation help you out?

1. *A great deal*
2. *Some*
3. *A little*
4. *None*
5. *Not applicable*

25. If you had a problem or were faced with a difficult situation, how much comfort would the people in your congregation be willing to give you?

1. *A great deal*
2. *Some*
3. *A little*
4. *None*
5. *Not applicable*

Sometimes the contact we have with others is not always pleasant.

26. How often do the people in your congregation make too many demands on you?

1. *Very often*
2. *Fairly often*
3. *Once in a while*
4. *Never*
5. *Not applicable*

27. How often are the people in your congregation critical of you and the things you do?

1. *Very often*
2. *Fairly often*
3. *Once in a while*
4. *Never*
5. *Not applicable*

Religious/Spiritual History

28. Did you ever have a religious or spiritual experience that changed your life?

No
Yes

IF YES: How old were you when this experience occurred?

29. Have you ever had a significant gain in your faith?

No
Yes

IF YES: How old were you when this occurred?

30. Have you ever had a significant loss in your faith?

No
Yes

IF YES: How old were you when this occurred?

Commitment

31. I try hard to carry my religious beliefs over into all my other dealings in life.
1. *Strongly agree*
 2. *Agree*
 3. *Disagree*
 4. *Strongly disagree*
 5. *Not applicable*
32. In an average week, how many hours do you spend in activities on behalf of your church or activities that you do for religious or spiritual reasons?
1. *None*
 2. *Less than 5 hours*
 3. *5 – 10 hours*
 4. *More than 10 hours*

Organizational Religiousness

33. How often do you go to religious services?
1. *More than once a week*
 2. *Every week or more often*
 3. *Once or twice a month*
 4. *Every month or so*
 5. *Once or twice a year*
 6. *Never*
34. Besides religious services, how often do you take part in other activities at a place of worship?
1. *More than once a week*
 2. *Every week or more often*
 3. *Once or twice a month*
 4. *Every month or so*
 5. *Once or twice a year*
 6. *Never*

Religious Preference

35. Please indicate your current religious preference **AND** religious

ideological classification. You can only give **ONE** response to the available options that are presented below.

(a). Current religious preference

1. *Catholic*
2. *Protestant*
3. *Jewish*
4. *Islam*
5. *Agnostic*
6. *Atheist*
7. *Other* _____

(b). Current ideological classification

1. ***Fundamental/Conservative***
(Literal interpretation of religious texts/values)
2. ***Liberal***
(Humans have the ultimate freedom in their lives; therefore there is always a room for new interpretations of all religious values)
3. ***Other*** _____

36. In which faith or religious were you raised?
-

Overall Self-Ranking

36. To what extent do you consider yourself a religious person?

1. *Very religious*
2. *Moderately religious*
3. *Slightly religious*
4. *Not religious at all*

37. To what extent do you consider yourself a spiritual person?
1. *Very spiritual*
 2. *Moderately spiritual*
 3. *Slightly spiritual*
 4. *Not spiritual at all*

**Appendix C: Original version of the
BMMRS**

Brief Multidimensional Measure of
Religiousness/Spirituality: 1999

Daily Spiritual Experiences

The following questions deal with possible
spiritual experiences. To what extent can
you say you experience the following:

1. I feel God's presence.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
2. I find strength and comfort in my religion.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
3. I feel deep inner peace or harmony.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
4. I desire to be closer to or in union with
God.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
5. I feel God's love for me, directly or
through others.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*
6. I am spiritually touched by the beauty of
creation.
 1. *Many times a day*
 2. *Every day*
 3. *Most days*
 4. *Some days*
 5. *Once in a while*
 6. *Never or almost never*

Meaning

See Appendix at the end of this section.

Values/Beliefs

7. I believe in a God who watches over me.
 1. *Strongly agree*
 2. *Agree*
 3. *Disagree*
 4. *Strongly disagree*
8. I feel a deep sense of responsibility for
reducing pain and suffering in the world.
 1. *Strongly agree*
 2. *Agree*
 3. *Disagree*
 4. *Strongly disagree*

Forgiveness

Because of my religious or spiritual beliefs:

9. I have forgiven myself for things that I
have done wrong.
 1. *Always or almost always*
 2. *Often*
 3. *Seldom*
 4. *Never*

10. I have forgiven those who hurt me.
1. *Always or almost always*
 2. *Often*
 3. *Seldom*
 4. *Never*

11. I know that God forgives me
1. *Always or almost always*
 2. *Often*
 3. *Seldom*
 4. *Never*

Private Religious Practices

12. How often do you pray privately in places other than at church or synagogue?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*
 5. *A few times a month*
 6. *Once a month*
 7. *Less than once a month*
 8. *Never*

13. Within your religious or spiritual tradition, how often do you meditate?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*
 5. *A few times a month*
 6. *Once a month*
 7. *Less than once a month*
 8. *Never*

14. How often do you watch or listen to religious programs on TV or radio?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*
 5. *A few times a month*
 6. *Once a month*
 7. *Less than once a month*
 8. *Never*

15. How often do you read the Bible or other religious literature?
1. *More than once a day*
 2. *Once a day*
 3. *A few times a week*
 4. *Once a week*
 5. *A few times a month*
 6. *Once a month*
 7. *Less than once a month*
 8. *Never*

16. How often are prayers or grace said before or *after* meals in your home?
1. *At all meals*
 2. *Once a day*
 3. *At least once a week*
 4. *Only on special occasions*
 5. *Never*

Religious and Spiritual Coping

Think about how you try to understand and deal with major problems in your life. To what extent is each of the following involved in the way you cope?

17. I think about how my life is part of a larger spiritual force.

1. *A great deal*
2. *Quite a bit*
3. *Somewhat*
4. *Not at all*

18. I work together with God as partners.
1. *A great deal*
 2. *Quite a bit*
 3. *Somewhat*
 4. *Not at all*

19. I look to God for strength, support, and guidance.
1. *A great deal*
 2. *Quite a bit*
 3. *Somewhat*
 4. *Not at all*

20. I feel God is punishing me for my sins or lack of spirituality.

1. *A great deal*
2. *Quite a bit*
3. *Somewhat*
4. *Not at all*

21. I wonder whether God has abandoned me.

1. *A great deal*
2. *Quite a bit*
3. *Somewhat*
4. *Not at all*

22. I try to make sense of the situation and decide what to do without relying on God.

1. *A great deal*
2. *Quite a bit*
3. *Somewhat*
4. *Not at all*

23. To what extent is your religion involved in understanding or dealing with stressful situations in any way?

1. *Very involved*
2. *Somewhat involved*
3. *Not very involved*
4. *Not involved at all*

Religious Support

These questions are designed to find out how much help the people in your congregation would provide if you need it in the future.

24. If you were ill, how much would the people in your congregation help you out?

1. *A great deal*
2. *Some*
3. *A little*
4. *None*

25. If you had a problem or were faced with a difficult situation, how much comfort would the people in your congregation be willing to give you?

1. *A great deal*
2. *Some*
3. *A little*
4. *None*

Sometimes the contact we have with others is not always pleasant.

26 How often do the people in your congregation make too many demands on you?

1. *Very often*
2. *Fairly often*
3. *Once in a while*
4. *Never*

27. How often are the people in your congregation critical of you and the things you do?

1. *Very often*
2. *Fairly often*
3. *Once in a while*
4. *Never*

Religious/Spiritual History

28. Did you ever have a religious or spiritual experience that changed your life?

- No
Yes

IF YES: How old were you when this experience occurred?

29. Have you ever had a significant gain in your faith?

- No
Yes

IF YES: How old were you when this occurred?

30. Have you ever had a significant loss in your faith?

- No
- Yes

IF YES: How old were you when this occurred?

Commitment

31. I try hard to carry my religious beliefs over into all my other dealings in life.

- 1. *Strongly agree*
- 2. *Agree*
- 3. *Disagree*
- 4. *Strongly disagree*

32 During the last year about how much was the average monthly contribution of your household to your congregation or to religious causes?

\$----- OR \$ -----per month

Contribution per year	Contribution per month
--------------------------	---------------------------

33. In an average week, how many hours do you spend in activities on behalf of your church or activities that you do for religious or spiritual reasons?

IF PROTESTANT ASK:
Which specific denomination is that?

Organizational Religiousness

34. How often do you go to religious services?

- 1. *More than once a week*
- 2. *Every week or more often*
- 3. *Once or twice a month*
- 4. *Every month or so*
- 5. *Once or twice a year*
- 6. *Never*

35. Besides religious services, how often do you take part in other activities at a place of worship?

- 1. *More than once a week*
- 2. *Every week or more often*
- 3. *Once or twice a month*
- 4. *Every month or so*
- 5. *Once or twice a year*
- 6. *Never*

Religious Preference

36. What is your current religious preference?

Overall Self-Ranking

37. To what extent do you consider yourself a religious person?

- 1. *Very religious*
- 2. *Moderately religious*
- 3. *Slightly religious*
- 4. *Not religious at all*

38. To what extent do you consider yourself a spiritual person?

- 1. *Very spiritual*
- 2. *Moderately spiritual*
- 3. *Slightly spiritual*
- 4. *Not spiritual at all*

Appendix-Meaning

The working group did not feel it was appropriate at this time to include any “religious meaning” items in this measure,

as no final decisions have been made regarding this domain. The following items are being considered for a Short Form.

1. The events in my life unfold according to a divine or greater plan.
 1. *Strongly agree*
 2. *Agree*
 3. *Disagree*
 4. *Strongly disagree*

2. I have a sense of mission or calling in my own life.
 1. *Strongly agree*
 2. *Agree*
 3. *Disagree*
 4. *Strongly disagree*

Appendix D: Original version of Sensation-Seeking Scale-V (SSS-V)

Directions: Each of the items below contains two choices, A and B. Please indicate (circle) on your answer sheet which of the choices most describes your likes or the way you feel. In some cases you may find items in which both choices describe your likes or feelings. Please choose the one which better describes your likes or feelings.

In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. Please try to answer each item.

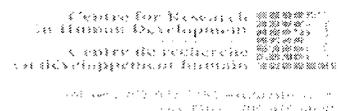
It is important you respond to all items with only one choice, A or B. We are interested only in your likes or feeling, not in how others feel about these things or how one is supposed to feel. There is no right or wrong answers as in other kinds of tests. Be frank and give your honest appraisal of yourself.

1. A. I like “wild” uninhibited parties
B. I prefer quiet parties with good conversation
2. A. There are some movies I enjoy seeing a second or even a third time
B. I can’t stand watching a movie that I’ve seen before
3. A. I often wish I could be a mountain climber
B. I can’t understand people who risk their necks climbing mountains
4. A. I dislike all body odors
B. I like some for the earthly body smells
5. A. I get bored seeing the same old faces
B. I like to comfortable familiarity of everyday friends
6. A. I like to explore a strange city or section of town by myself, even if it means getting lost
B. I prefer a guide when I am in a place I don’t know well
7. A. I dislike people who do or say things just to shock or upset others
B. When you can predict almost everything a person will do and say he or she must be a bore
8. A. I usually don’t enjoy a movie or play where I can predict what will happen in advance
B. I don’t mind watching a movie or a play where I can predict what will happen in advance
9. A. I have tried marijuana or would like to
B. I would never smoke marijuana
10. A. I would not like to try any drug which might produce strange and dangerous effects on me
B. I would like to try some of the new drugs that produce hallucinations

11. A. A sensible person avoids activities that are dangerous
B. I sometimes like to do things that are a little frightening
12. A. I dislike “swingers” (people who are uninhibited and free about sex)
B. I enjoy the company of real “swingers”
13. A. I find that stimulants make me uncomfortable
B. I often like to get high (drinking liquor or smoking marijuana)
14. A. I like to try new foods that I have never tasted before
B. I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness
15. A. I enjoy looking at home movies or travel slides
B. Looking at someone’s home movies or travel slides bores me tremendously
16. A. I would like to take up the sport of water skiing
B. I would not like to take up water skiing
17. A. I would like to try surf boarding
B. I would not like to try surf boarding
18. A. I would like to take off on a trip with no preplanned or definite routes, or timetable
B. When I go on a trip I like to plan my route and timetable fairly carefully
19. A. I prefer the “down to earth” kinds of people as friends
B. I would like to make friends in some of the “far out” groups like artists or “punks”
20. A. I would not like to learn to fly an airplane
B. I would like to learn to fly an airplane
21. A. I prefer the surface of the water to the depths
B. I would like to go scuba diving
22. A. I would like to meet some persons who are homosexual (men or women)
B. I stay away from anyone I suspect of being “gay or lesbian”
23. A. I would like to try parachute jumping
B. I would never want to try jumping out of a plane with or without a parachute
24. A. I prefer friends who are excitingly unpredictable
B. I prefer friends who are reliable and predictable
25. A. I am not interested in experience for its own sake
B. I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional, or illegal
26. A. The essence of good art is in its clarity, symmetry of form and harmony of colors
B. I often find beauty in the “clashing” colors and irregular forms of modern paintings

27. A. I enjoy spending time in the familiar surroundings of home
B. I get very restless if I have to stay around home for any length of time
28. A. I like to dive off the high board
B. I don't like the feeling I get standing on the high board (or I don't go near it at all)
29. A. I like to date members of the opposite sex who are physically exciting
B. I like to date members of the opposite sex who share my values
30. A. Heavy drinking usually ruins a party because some people get loud and boisterous
B. Keeping the drinks full is the key to a good party
31. A. The worst social sin is to be rude
B. The worst social sin is to be a bore
32. A. A person should have considerable sexual experience before marriage
B. It's better if two married persons begin their sexual experience with each other
33. A. Even if I had the money I would not care to associate with flight rich persons like those in the "jet set"
B. I could conceive of myself seeking pleasures around the world with the "jet set"
34. A. I like people who are sharp and witty even if they do sometimes insult others
B. I dislike people who have their fun at the expense of hurting the feelings of others
35. A. There is altogether too much portrayal of sex in movies
B. I enjoy watching many of the "sexy" scenes in movies
36. A. I feel best after taking a couple of drinks
B. Something is wrong with people who need liquor to feel good
37. A. People should dress according to some standard of taste, neatness, and style
B. People should dress in individual ways even if the effects are sometimes strange
38. A. Sailing long distances in small sailing crafts is foolhardy
B. I would like to sail a long distance in a small but seaworthy sailing craft
39. A. I have no patience with dull or boring persons
B. I find something interesting in almost every person I talk to
40. A. Skiing down a high mountain slope is a good way to end up on crutches
B. I think I would enjoy the sensations of skiing very fast down a high mountain slope

Appendix E: Informed Consent



INFORMED CONSENT

Study Title: Multidimensional Religiosity and Sensation-Seeking Behavior: A Link to Health

Investigator: Ihshan Gumilar

I am a graduate student in the Interdisciplinary Human Development Department at Laurentian University studying a relationship between religion and sensation-seeking behaviour. The study is intended to provide information which will inform the relationship between religious values and sensation seeking in the young adult population. We do not anticipate that there will be anything more than slight anxiety or fatigue resulting from your participation. Studies based on these questionnaires have been published before without ill / No effects. The study will take approximately 35 minutes of your time and will involve filling out these questionnaires.

Your participation in this study is strictly voluntary. You have the right to withdraw at any time without penalty or loss of academic credit. Credit will be provided for participating. Providing academic credit (or not) and the value of the credit is the right of the course instructor and thus may not apply to all students.

A copy of the final results can be obtained from the Interdisciplinary Human Development Master's Thesis Archive or directly from me. You can also provide me with your email address if you are interested in knowing about the findings of the study as you are filling out the questionnaires.

If you have any questions pertaining to the research, you can reach me at (705) 675-1151, ext. 4239 or email me at atig_gumilar@laurentian.ca. For all questions concerning ethics, you should contact the ethics officer of Laurentian, Jean Dragon Ph.D., at (705) 675-1151, ext. 3213 (jdragon@laurentian.ca).

Your identity will only be revealed for the purposes of academic credit, and will not be associated to your survey. A list of names of survey attendees will be provided to your professor who will award the academic credit. After your information is converted to digital format, any identifying information tracing you to your data will be destroyed.

I agree to participate in this study, and I have received a copy of this consent form.

Subject's Signature

Date

Request for copy of results: **No/ Yes (email:**

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