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Department of _Psychology_ .

Christine M Cothes   4-2-13
Director   Date

Beth Haile   4/2/13
Reader   Date

Julie Angel   4/2/13
Reader   Date

Correlational Analysis of Religiosity, Locus of Control, Anxiety, and Risk Prone Behavior

Jonathon Butler

Carroll College

Abstract

This study examined the relationships among, religiosity, perceived locus of control, anxiety, and risk prone behavior. Locus of control (LOC) is defined as how an individual assigns control of life events; either internally (under individual control) or externally (controlled by external factors). Previous research has indicated that individuals who have a high level of religiosity are less likely to engage in risky behavior than individuals who have a low level of religiosity (Adams, 2000). Previous studies have also indicated a negative correlation between religiosity and anxiety. Participants in the current study participated via an online survey. The survey was comprised of measures regarding religiosity, locus of control, anxiety, and risk prone behavior. It was hypothesized that religiosity would correlate negatively with internal loci of control, anxiety, and risk prone behavior. Pearson's r correlational analyses were conducted on all the variables. A significant positive correlation was observed between highly ritualistic religious practices and a perceived internal locus of control (p < .05) as well as a significant positive correlation between a greater external locus of control based on powerful others and higher self-reported anxiety (p < .05). However, all other correlations were not statistically significant. Implications of these findings, as well as future research directions are addressed.

Introduction

Religion has been an integral part of human culture for thousands of years. From sun worshipping to modern day Christianity, religion has shaped behaviors and cultural norms. Religioun continue to be the widest, socially accepted, set of beliefs despite the pervasive effect of religion on individual behavior and social norms, religious beliefs and values that are not grounded in empirical justification. Merrium-Webster defines religion as: "a personal set or institutionalized system of religious attitudes, beliefs, and practices" (2013). Much research has been conducted on the effects of religious beliefs in regards to its "effects" on healing, illness, psychiatric disorders and social problems (Corrigan, McCorkle, Schell & Kidder, 2003; Jenkins & Pargament, 1995; Sherkat & Reed, 1992). Nevertheless, religion is a very important aspect of today's culture and its effects on behavior must be researched further.

Religions of many varieties are practiced around the world from Buddhism, Islam, Hinduism, Christianity, Judaism, etc. Worship of any particular deity may be an indicator that an individual places control of his/her life, events in his/her life, upon an external source (i.e. deity, god or free will). According to Stanke (2004), "…religious orientation tends to fit into one of three categories –fundamental, moderate, or liberal" (p. 2). Liberal religiosity would indicate a loose connection to a particular religious belief or attitude; whereas, a fundamental attachment to any given religion would be demonstrated by a stringent adherence to the practices and beliefs of that given religion. Religiosity is a term used to measure the frequency of religious practices and the strength of subjective religious beliefs (Stanke, 2004). Religion is used to cope with problems that arise in daily life from stress at work, relationship issues, health problems, end-of-life dilemmas, etc. Religious coping describes the way individuals use their faith to solve problems (Wong-McDonald & Gorsuch, 2004). Some religions prescribe prayer as the main

"antidote" to problem solving whereas other religions condone a more "hands-on"/active approach to problem solving (e.g., ritualistic traditions).

Religiosity can be defined in terms of objective religiosity (practiced faith) and subjective religiosity (personal beliefs) (Fiori, Brown, Cortina & Antonucci, 2006). According to Corrigan, McCorkle, Schell & Kidder (2003), "religiousness is defined as participation in an institutionalized doctrine while spirituality is framed as an individual pursuit of meaning outside the world of immediate experience." This operational definition was used in this research as well. However, religion is not the only driving force in an individual's life.

Religiosity is difficult to measure given that all data collected from any measure will be completely self-reported. Furthermore, with a multitude of viewpoints, beliefs and traditions, religiosity can be very difficult to quantify. Given that obtaining an overall "snap-shot" of religiosity is difficult, there have been many standardized measures created to gather data on different, more specific, aspects of religiosity. An excellent source of religiosity measures is *Measures of Religiosity* (Hill & Hood, 1999). All variables, reliability, and validity quantifications are indicated for all of the scales provided in this text. Intrinsic and extrinsic religiosity have been identified as being pinnacle variables in measuring religiosity (Allport, 1950). Extrinsic religiosity is described as being a means to an end by Allport, whereas, intrinsic religiosity is described as an end in itself (Allport, 1950). For example, an extrinsically religious person may attend church services, read religious texts, or attend religious activities because it is the socially acceptable thing to do within his/her culture or because he/she wants to be affiliated with certain organizations or groups of people. In contrast, an intrinsically religious individual performs all of the above mentioned activities because he/she wants to, and not because of external motivations.

Locus of control (LOC) is defined as how an individual will perceive outcomes in life events. LOC was originally studied by Julian Rotter in 1966 and since has been incorporated into personality theory (Engler, 2006, p. 249). Rotter's final revision of his Locus of Control measure was strictly dichotomous. This is to say that for each question asked in the survey there were two polar opposite answers from which to choose. The final scale was entitled the I-E Scale (internal-external scale).   However, in 1981, Levinson revised Rotter's measure into a non-dichotomous design (Levinson, 1981). Furthermore, Levinson's scale consists of three categories: internal locus of control (LOCInternal), powerful others (LOCPO), and chance (LOCChance). *Internal locus of control* is descriptive of an individual that attributes life events to his/her own doing or being within his/her control. In contrast, *powerful others* and *chance* LOC are indicative of external factors that individuals attribute responsibility for life events and outcomes. The aspect of powerful others specifically places responsibility/control on authority figures, whereas chance focuses exclusively on fate or luck. Both measures (i.e., Rotter and Levinson) are widely used in regards to LOC. "Locus" (derived from Latin for "location") is, in this case, indicative of where a person assigns responsibility for life events. According to Stanke (2004), "…locus of control refers to the extent to which an individual attributes personal life events to external factors or other people (external) or to their own disposition (internal)" (p. 2).

Many studies regarding locus of control have been conducted. Correlates ranging from self-efficacy, self control, survival rates in AIDS patients and language achievement are all correlates that have been studied in regards to locus of control. Subjective locus of control can correlate to risk-taking behavior, behavioral disorders and coping (Wong-McDonald & Gorsuch, 2004). Subjective locus of control is comparable to internal locus of control (i.e., life events are controllable by the individual).

LOC characterizes individuals based on subjective beliefs that life events are either dependent on their own actions or on external factors. External influences in an individual's life include God, fate or other powerful forces in his/her environment (Wong-McDonald & Gorsuch 2004). Furthermore, Stanke's research has shown that there is a negative correlation between an internal locus of control and high religiosity. These findings may reflect a religious individual's tendency to ascribe life's occurrences to a force higher than his/herself (e.g. God) (2004).

Research has also been conducted looking into possible correlations between loci of control, religiosity and life satisfaction. Loci of control and religiosity have been identified as correlated with life satisfaction (Fiori, Brown, Cortina & Antonucci, 2006; Okulicz-Kozaryn, 2010). According to Okulicz-Kozaryn, as an individual's personal beliefs (i.e., strength of beliefs in God, prayer, etc.) increased his/her life satisfaction increased as well (2010). This study indicates a particularly positive psychological strength of having powerful religious beliefs.

Risk-taking behavior has also been correlated to both religiosity and LOC. Previous research has indicated that individuals who have a high level of religiosity are less likely to engage in risky behavior than individuals who have a low level of religiosity (Adams, 2000). Risk-taking behavior has been correlated with LOC as well. Individuals with an internal LOC are less likely to engage in risk taking behavior (Miller & Mulligan, 2002).

Anxiety has been correlated with subjective religiosity as well (Jansen, Motley & Hovey, 2010). Research indicates that, "…intrinsically oriented Christians were more religious and less anxious on trait and existential anxiety measures than extrinsically oriented Christians" (Sturgeon & Hamley, 1979). Furthermore, research indicates that subjects with internal locus of

control have lower average anxiety scores than individuals with higher external locus of control (Arslan, Dilmac & Hamarta, 2009). The correlations between religiosity and anxiety, and LOC and anxiety indicate a possible correlation between religiosity and locus of control. However, further research into correlation similarities between religiosity and locus of control is needed.

The current study focused on investigating the potential correlations between religiosity, loci of control, anxiety, risk behavior, sex, and religious orientation. The purpose of identifying correlations between those variables was to gain an increased understanding of relationships each may have to the others. In this study there were four hypotheses. First of all, women will score higher on both religiosity measures than men. Secondly, gender differences will be observed in regards to risk behavior. More specifically, women will score lower on the risk prone behavior measure than their male counterparts. Thirdly, religiosity will positively correlate with external loci of control (chance and powerful others), lower anxiety levels, and decreased risk behavior of participants. Lastly, anxiety will negatively correlate to internal locus of control and risk behavior. As previous research has indicated, anxiety correlates negatively to internal locus of control.

Methods

Participants

Participants were selected from a private Catholic school in the Northwest utilizing an online survey site (i.e., Survey Monkey). Ninety-seven participants were gathered for this study. Males and females of any race or ethnicity over the age of 18 were accepted for this research. All participants were healthy volunteers. No criterion for diseases/illnesses was required to

participate in the study. The only exclusion from participation was individuals under the age of 18 years.

Apparatus

Five standardized measures were used to gather data from participants. Participants' levels of anxiety were measured along with locus of control, religiosity, and risk prone behavior. Religiosity was measured using two standardized tests. First, the Religious Belief Scale (RBS) (Martin & Nicholos, 1962) was administered to strictly measure subjective belief (e.g., efficacy of prayer, power of deity, and the afterlife). The second measure of religiosity was Rohrbaugh & Jessor's Religiosity Measure (1975). This measure is subdivided into four categories of religiosity (ritual, consequential, ideological, and experiential) and contains eight items. Thirdly, locus of control was measured using Levenson's Multidimensional Locus of Control Inventory, which has 24 items (1981). Risk prone behavior was measured using a non-standardized, five-question test created for this study. The risk prone behavior measure was a modified version of the Choice Dilemmas Questionnaire (CDQ) (Kogan & Wallach, 1964). The CDQ assesses risky choice behavior through the use of hypothetical situations and contains 12 items (Kogan & Wallach, 1964). Lastly, participant anxiety was measured using the Beck Anxiety Inventory (BAI) (Beck, 1993).

Procedure

Participants were selected using handouts instructing them to visit Survey Monkey, a survey based web site. Also, links for the survey were presented to psychology classes and posted to social media sites (i.e., Facebook, Twitter). Furthermore, the survey was open, not only to those who received the handout, but to anyone who visited Survey Monkey and

completed the survey. There was no written consent taken for any participant; therefore, by clicking the "agree" button and proceeding into the survey the participants agreed to the terms of the consent form and offered his or her consent to participate in the survey. Also, by consenting to the survey the participant agreed that he/she is over the age of 18 years old. Participants were advised that at any time they were free to stop the survey with absolutely no repercussions of any kind. Once the participant had accessed the survey via Survey Monkey he/she was walked through a series of questionnaires. The first portion of the survey asked the participants to identify their sex, age and religious orientation. Next, the participant filled out the Religiosity Measure, Religious Belief Scale, Locus of Control Scale, the Beck Anxiety Inventory, and the Risk Prone Behavior questionnaire, respectively. Each of the questionnaires had the titles removed for deception purposes. However, the instruction portion of the questionnaires (i.e., how to fill out the questionnaire properly) was left for the participant to read.

Results

All-in-all 185 participants were surveyed via Survey Monkey. Eighty-eight participant surveys had to be thrown out due to not answering all of the questions, N=97. Correlational analysis was run on the data (i.e., Pearson's R). Females scored higher on the Religious Belief Scale (Female=21.82, Male=19.82) and on the Measures of Religiosity (Female=18.14, Male=17.04). Females scored slightly lower than males in regards to risk prone behavior (Female=2.47, Male=2.57). Religiosity correlated with LOCChance r=-.158, LOCPO r=-.085, anxiety r=.092, and risk behavior r=-.033. Anxiety correlated negatively with internal locus of control and risk behavior (p>.05).

Discussion

According to previous research, correlations between religiosity, anxiety, risk behavior and locus of control have been identified. The goal of this study was not only to support or contrast previous research findings but to identify sex differences in the previously mentioned correlates. All-in-all, 11 correlates were calculated in this survey (two religiosity measures consisting of five correlates. The variables measured for religiosity were ritual behavior, consequential, ideological, religious experience (experiential), the combined score on the Measure of Religiosity, and the Religious Belief Scale. Locus of control was broken down into three categories: internal locus of control (LOCInternal), chance (LOCChance), and powerful others (LOCPO).   Correlations were identified between all the separate correlates. Furthermore, gender differences were observed in regards to religiosity, risk behavior, and anxiety. The proportion of females to males in this study was skewed towards female participants (females *n*=74, males *n*=23).

At the beginning of the survey participants were asked to answer demographic questions regarding age, sex, and religious affiliation. As mentioned above, the relationship of female to male participants was largely skewed toward females (nearly three times the number of females to males). This abnormal distribution may be due to the female to male ratio of psychology majors at the college from which the majority of participants were gathered. The next question asked of the participants was "age." The average age of participants was 26.62 years. Again, the low average for age can be, at least in part, explained by the targeted demographic of the study (i.e., Carroll College). The results of the religious affiliation question had a large variety of

answers. Out of 97 participants, 27 identified as either agnostic, atheist, or "none." There was no definitive age group/range that identified as agnostic, atheist or "none." The remaining participants identified with an Abrahamic faith (e.g., Christian, Islam/Muslim, Protestant, Catholic, Jewish, *n*=68) or Buddhist *n*=2.

Religiosity v LOC correlates did not support previous research. Religiosity did negatively correlate with internal LOC r=-.144 (MOR), r=-.142 (RBS), but neither correlation had a significant p-value. Those results are in contrast to research conducted by Stanke (2004) in which internal locus of control negatively correlated with high levels of religiosity. However, the sub-variable "ritual" of Rohrbaugh and Jessor's Measure of Religiosity correlated significantly with LOCInternal, r=-.232 (p<.05). This finding does coincide with Stanke's research. Moreover, this result suggests that as an individual becomes more active in his/her religions' practiced rituals (e.g., reading of sacred texts, attending religious services, practicing religious traditions, etc.) his/her attribution of life events, and their "causal" factor becomes less focused on the individual and more towards outside influences (i.e., a deity). According to the third hypothesis, religiosity was predicted to positively correlate with external LOC (chance and powerful others). However, both measures of religiosity (MOR and RBS) negatively correlated with LOCChance r=-.158 (MOR), r=-.047 (RBS) and LOCPO r=-.085 (MOR), r=-.013 (RBS). Although there were identifiable correlations between religiosity (for both measures) and locus of control, all the correlations were weak and not statistically significant (p>.05).

Correlations between anxiety and the other correlates were also identified. Anxiety correlated with religiosity on both measures r=.092 (MOR) and r=.020 (RBS). However, neither of the correlations had significance in terms of p-value. The highest correlation between anxiety and religiosity occurred with the "consequential" variable on Rohrbaugh and Jessor's Measure of

Religiosity (1975), r=.099. Correlations between anxiety and LOC were also calculated. Within

the three variables of LOC (LOCInternal, LOCChance, and LOCPO), anxiety correlated as

follows r=-.148 (p>.05), r=-.148 (p>.05), and r=.215 (p<.05). The correlation between anxiety

and LOCPO was significant at the 0.05 level (2-tailed). This correlation suggests that

individuals that ascribe life events to "powerful others" (e.g., God, authority figures, parents,

etc.) tend to have higher levels of anxiety. For example, an individual that feels as if he/she has

no control over life events and cannot effectively influence his/her environment in any way may

have higher levels of anxiety because he/she is "at the mercy" of powerful others. Therefore,

efforts made to influence the outcome of life events would be futile and fruitless, in turn

increasing levels of anxiety for the individual. However, the correlations between anxiety and

LOCInternal and LOCChance were negative.   This suggests that anxiety levels decrease when

an individual ascribes control over life events to chance or their own doing. Moreover, as

perceived control of life events shifts into his/her power or towards chance the individuals' level

of anxiety may decrease. Although there were negative correlations identified between anxiety

and LOCInternal and LOCChance the results were not statistically significant.

Gender differences were also identified between the correlates. As hypothesized, gender

differences were evident. First and foremost, the number of female participants was significantly

higher than that of male participants. Females also scored higher on both measures of religiosity

as compared to their male counterparts. Furthermore, on the risk prone behavior survey female

scores were slightly lower than males. Given that the average age of participants in this study

was in the mid 20's (26.62 years) it may not be surprising that the males scored higher on the

risk behavior scale. Almost no variation was seen in regards to religious affiliation. Females

and males self reported having no affiliation (atheist, agnostic, or "none") an equal amount proportionally to the distribution of females to males.

A confound in this study is that the data collected is self reported information on the questionnaires. Historical effects are not known or controlled for in this study; therefore, another confound is present in this study other than self reported information. However, there is a significant amount of data regarding correlations between many of the variables in this study. Since there is so much supporting data regarding the variables and the correlations between them indicates a lessened effect of the aforementioned confounds. Anecdotal evidence has, for many years, been piling up in favor of the power of subjective religiosity effecting healing time, life satisfaction and self-esteem. The results of this study may implicate further, experimental, research to analyze connections between religiosity, anxiety, and the time it takes an individual to recover from certain physical ailments such as chemotherapy. Furthermore, this study will further the understanding of how anxiety and risk behavior correlate and possibly help identify different populations that are at higher risk for developing anxiety based on their risk behavior tendencies. However, further research is needed to establish a stronger base of correlational data.

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