



A quantitative study investigating the relationship of intrinsic religiosity with meaning in life, stress, anxiety and paranormal beliefs.

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May 2019

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ABSTRACT

Previous literature on religiosity have shown a significant positive relationship between intrinsic religiosity and meaning in life (Zika and Chamberlain, 1992) while other research as proposed that religious believers and paranormal believers share a significant relation in their beliefs (Wuthnow, 1978). On the other hand, there has been very little research on how intrinsic religiosity relates with anxiety and stress, therefore the aim of this study was to investigate the relationship of intrinsic religiosity with meaning in life, stress, anxiety and paranormal beliefs. Using a correlational study design, 120 participants (113 female, 7 male) between the ages of 18 to 51 were recruited through opportunity sampling. Data was collected through online and paper versions of questionnaires, and then assessed through Pearson correlations and multiple regression analysis on SPSS v.24.0. Results indicated that meaning in life and paranormal belief are significantly moderate predictors of internal religiosity. Intrinsic religiosity was also found to be significant in predicting paranormal beliefs. Limitations, improvements for future research and implications are discussed.

KEY WORDS:	INTRINSIC RELIGIOSITY	MEANING IN LIFE	PARANORMAL BELIEFS	STRESS	ANXIETY
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Introduction

Religiosity is used to refer to the religious behaviour practised in faith-based communities (Salvador, 2011). While religion is viewed as a system of shared beliefs and practises which provide a sense of purpose and meaning, religiosity is referred to the way those religious beliefs influence people and communities (Darity, Jr, 2008). As religiosity provides a meaning and purpose to people, it is believed that it has positive influences on individuals (Francis et al., 2019). Foster et al., (2013) argued that religiosity is associated with searching for positive meanings in negative situations, known as benefit finding. The researchers also suggested that individuals with high religiosity may be more likely to cope better in stressful situations. A meta-analysis of 20 studies revealed an association between high levels of religiosity and mental health in adolescents. This association was found to be stronger in older adolescents and males compared to younger adolescents and females (Wong et al., 2006).

While previous research has shown a positive relationship between religiosity and psychological well-being (Beit-Hallahmi and Argyle, 1997; Diener et al., 1999), other researchers have debated that religiosity promotes irrationality and low psychological well-being (Ellis, 1980). On the other hand, Pargament (1998) argued that there are different dimensions to religiosity such as intrinsic and extrinsic religiosity, which could have different impacts on mental health and psychological well-being (Allport, 1963). Intrinsic religiosity refers to the tendency to living in the way that's dictated by religious beliefs, making religion the centre of the individuals' life. Individuals with high intrinsic religiosity tend to follow their religion to strengthen their relationship with their religious beliefs. Extrinsic religiosity refers to the tendency in following religion for one's own personal gain in achieving popularity as well as using religion to seek a source of comfort for themselves (Gorsuch and McPherson, 1989).

Older studies have found that intrinsic religiosity has a negative relationship with depression (Genia and Shaw, 1991) and anxiety (Baker and Gorsuch, 1982), while extrinsic religiosity has found to positively correlate with depression and anxiety (Genia and Shaw, 1991; Baker and Gorsuch, 1982). In addition, a recent study by Maltby and Day (2004) demonstrated that low depression, anxiety, stress, and high life satisfaction to be linked with positive religious coping. These findings could mean that intrinsic religiosity and positive religious coping is the aspect of religion which may have a positive influence on mental health. Other literature have discovered intrinsic religiosity to be positively related with empathy (Watson et al., 1984), meaning in life (Crandall and Rasmussen, 1975) and internal locus of control (Kahoe, 1974).

Meaning in life

Meaning in life has been defined as having purpose in an individual's life (Ryff and Singer, 1998), which may occur through personal achievements and personal encounters with other people (Frankl, 1984). Frankl (1963) suggested that individuals have a need to understand the purpose of their life as well as seek the significance and importance of their life and therefore they are highly motivated to search for personal meaning. Additionally Frank believed that meaning in life was needed for the avoidance of a pathological condition called noogenic neurosis, which

results in feelings of boredom, apathy and aimlessness. Researchers have debated that the experience of finding meaning in life happens when individuals find consistency and logic in their lives (Reker, and Wong, 1988) and this experience is dependent on the fulfilment of purpose, value, self-worth and efficacy (Baumeister, 1991). Individuals have reported in associating a personal meaningful event to self-improvement, engagement in interpersonal relationships and following one's own beliefs (Ebersole, 1998).

Having a meaning in life has been related to positively influencing psychological well-being (Reker et al., 1987). Previous research has demonstrated meaning in life being the most significant predictor of psychological well-being (Zika and Chamberlain, 1987), this relationship has been found in nearly all life span stages, from adolescence to late adulthood (Zika and Chamberlain, 1992). Recent research has similarly found that having meaning in life can be significant for improving well-being and can also provide protection from negative events (Bonebright et al., 2000; Pearson and Sheffield, 1989). Even though these findings suggest that sensing a meaning in life could have a significant influence on individuals well-being, such as improving positive mood, these result can also mean that experiencing positive feelings could lead to sensing a personal meaning in life (King et al., 2006).

Allport (1961) proposed that individuals can achieve a sense of meaning through attachment with religion. This may be because a key aspect of religious beliefs is that religion provides individuals with the means to attain and experience a sense of meaning in their lives (Emmons and Paloutzian, 2003; Exline, 2002). Many studies have explored the relationship between religiosity and meaning in life. Intrinsic religiosity has shown to have a positive relationship with meaning in life (Chamberlain and Zika, 1988). Another research discovered that the relationship between life satisfaction and religiosity can be mediated by finding meaning in life. Findings further showed that religious behaviours and well-being was also found to be mediated by meaning in life (Steger and Frazier, 2005). These findings indicate that an individuals' meaning in life could be influenced through their religious beliefs and behaviours, and their personal sense of meaning could partly account for the reason in which intrinsic religiosity positively impacts psychological well-being and mental health. Other literature in meaning in life has also discovered that individuals who have experienced meaning in their lives have reported to having a low need for psychotherapy (Battista and Almond, 1973) as well as a low substance abuse (Newcomb and Harlow, 1986). This reinforces the positive impacts of having a high perception of life meaning on the individuals life.

Paranormal beliefs

According to Irwin (1993), paranormal beliefs are defined as anomalous experiences and processes that conventional scientists consider to be physically impossible and are perceived to be beyond human capabilities. Different types of beliefs that may be recognised as part of the paranormal have used to provide a further understanding of the concept of paranormal beliefs (Irwin, 2009). An estimation of 90% of the world's population appear to consist of beliefs in some form of deity (Zuckerman, 2007). Over a third of people in America have beliefs in extrasensory perception, extra-terrestrial and psychic powers (Rice, 2003). The Gallup poll has demonstrated that a ratio of 17, 24, and 9% of Americans believed in astrology, UFOS and

reincarnation in 1976. This ratio had increased in 1997 to 37, 30 and 25% (French and Wilson, 2007). A recent Gallup poll in 2005 led to findings that within the population of America, 25% believed in astrology, 41% believed in extrasensory perception and 20% believed in reincarnation (Moore, 2005).

Research has previously explored on how cognitive factors play a role in paranormal belief such as superstitions. While some studies have discovered a negative correlation between superstition and analytical thinking style (Brugger and Graves, 1997), other studies have not found a similar negative relationship (Blackmore, 1997). The combination of different results question whether or not cognitive factors such as low analytical thinking style can be predictive of paranormal beliefs. Furthermore findings by Lindeman and Aarnio (2006) found that different paranormal beliefs had different correlations, as findings showed that the belief of parents and peers in the paranormal, had influenced the participants' belief in God, more than the other paranormal beliefs. This supports Woolley's (1997) debate on parents and culture having a stronger impact on religious beliefs compared to the other paranormal beliefs.

While literature has concluded that a higher religious belief is related with a higher paranormal belief (Wuthnow, 1978; Goode, 2000) due to both beliefs neglecting and contrasting modern scientific views (Goode, 2000). Other researchers have argued that religious beliefs are independent of paranormal beliefs, suggesting there is a negative connection between them (Rice, 2003). Irwin (2009) agreed that there is no relationship between paranormal beliefs and religiosity, but Irwin further proposed that belief in religion and some forms of paranormal beliefs may share similar beliefs. One study found that differences in personality variables between people who believe in religion and people who believe in paranormal (Langston et al., 2018). Another study demonstrated a negative relationship between religiosity and paranormal beliefs within religious believers, and a positive relationship between religiosity and paranormal beliefs among people who have paranormal beliefs. Differences found between religious believers and paranormal believers was values of conservation and self-transcendence (Aarnio and Linderman, 2007). This supports the argument that religious beliefs and paranormal beliefs are independent of each other, however the lack of empirical research, makes it difficult to understand the extent to which the paranormal beliefs represent each other as well as other beliefs (Lindeman and Aarnio 2006).

Stress

Stress in humans can stem from receiving demands from a multitude of sources, which can result in many different psychological, physical or emotional responses. While some response can be negative, other responses of stress can be necessary for well-being and mental health (Jacqueline, 2016). Additionally, Lazarus (1999) stated that psychological stress can occur as a response to not having sufficient psychological resources in dealing with perceived environmental threat or challenges. Without acquiring the appropriate psychological resources such as coping strategies to handle the stress, the individual will be vulnerable in a particular situation they perceive to be threatening or challenging due to the lack of coping (Monetero-Marín et al., 2014).

Previous literature have distinguished religious coping into positive and negative religious coping (Pargament et al., 1998) and found positive religious coping to have a stronger relationship with life satisfaction, posttraumatic growth and positivity (Gall and Guirguis-Younger, 2013). Positive religious coping behaviour is a reflection of securing an attachment with God and believing there is meaning in life. This religious coping is a positive response in how people with religious beliefs deal with stress (Pargament et al., 1998).

Research findings has revealed relationships between religiosity and coping with stress (Pargament, 2010; Park 2013) which suggest that there are positive impacts of religious coping styles. Contrasting these findings, some findings reveal mixed evidence or have found there is no significant relationships between religiosity and stress coping styles. Research with positive outcomes of religiosity have found adolescents are more likely to find religious beliefs and coping styles useful in helping them with stress (Smith, 2003; Wills et al., 2003; Bert, 2011). This may be because young people may find positivity and comfort from personal prayers and religious beliefs, reinforcing the positive role that religiosity has in an adolescents' life. Meaning in life is another factor that has been investigated in stress. Edwards and Holden (2001) discovered that meaning in life played a role as a buffer between stress coping strategies and suicidal appearances in university undergraduates. This could suggest that, if meaning in life is beneficial in coping with stress, then maybe religious belief can help with stress too, as meaning in life is a core element taught in religion. Due to the mixed findings, more research is needed to provide a sufficient understanding on the relationship between religiosity, meaning in life and dealing with stress.

Anxiety

Anxiety refers to the feeling of tense, unpleasant suspense and anticipation of an ambiguous threat-related event (Rachman, 2004). The extent to which people are vulnerable to facing anxiety varies in different people (Brewin, 1988). Anxiety has been distinguished into state anxiety and trait anxiety. State anxiety occurs in a temporary emotional state, differing in intensity over time, whereas trait anxiety is a proneness to experiencing stable state anxiety regularly (Spielberger, 1966). In Spielberger's (1966) model for state and trait anxiety, the experience of anxiety results from a temporal pattern of integrating internal and external stimuli, defence mechanisms and cognitive elements.

An association between death anxiety and religiosity has been found in studies, implying that strongly believing in experiencing an immortal afterlife, can help with decreasing feeling anxiety about your own death (Alvarado et al., 1995), however the research on this association has been criticised for being inconclusive, as other researchers have not found the same relationship (Donahue, 1985). Although when Hui and Fung (2008) compared intrinsic religiosity and extrinsic religiosity with death anxiety, they found that intrinsic religiosity had a stronger negative association with death anxiety than extrinsic religiosity. They also found that there was a reduction in anxiety towards the individual's own death but also towards the death of close ones. These findings indicate that level of anxiety, particularly towards death can be influenced depending on type and closeness of religiosity found in the individual, however this may only be applicable for death anxiety. The same relationship has

not been found in social anxiety and intrinsic religiosity (Storch et al., 2002), which suggests that intrinsic religiosity could relate with only specific types of anxiety.

Rationale

As shown above, extensive research has demonstrated significant relationships between meaning in life and religiosity, however even though literature has previously explored the relationship between religiosity and paranormal belief, it is not sufficient for a complete understanding of the how the factors underlying the relationship among different paranormal beliefs relate to religiosity as well as meaning in life, stress and anxiety. There is wide research in stress and anxiety, however, there is very little research exploring how these variables can be influenced by religiosity. Most importantly, even less research has investigated in intrinsic religiosity and the extent to which intrinsic religiosity directly relates with meaning in life, stress, anxiety and belief in the paranormal. Therefore, this study aims to investigate the relationship of intrinsic religiosity with meaning in life, paranormal beliefs, stress and anxiety.

Method

Design

A non-experimental correlational study was used. The dependent variables in the study was internal religiosity, and the independent variables were meaning in life, stress, anxiety and paranormal belief. The data was collected through paper and online questionnaires. Questionnaires were used because they are easy to distribute to large samples and they are also designed to produce quantitative data that can be easily analysed (Wood et al., 2016). The data was analysed on SPSS v.24 through correlations and multiple regression.

Participants

Through opportunity sampling, 155 participants were recruited through distribution of the paper questionnaires and by sharing online links of the questionnaires. Participants also chose to take part through the Manchester Metropolitan participation pool. Individuals had to be over the age of 18 to take part in the study, therefore individuals under 18 were not asked to take part. As 35 questionnaires were not completed, their data had to be destroyed. The final completed sample size included 120 (113 female, 7 male) participants between the ages of 18 to 51. This sample size matched Green's (1991) minimum requirement of 82 for a sample using his calculation: $N > 50 + 8m$ where m is the number of the independent variables.

Measures

5 different questionnaires were used (Appendix 6). Intrinsic religiosity was measured using the 32-item 'Religious Life Inventory' (RLI) developed by Batson & Schoenrade, (1991). This inventory measures 3 sub-scales, and presented with a 7-point likert scale with 1 being 'strongly disagree' to 7 being 'strongly agree'. The first subscale measures intrinsic religiosity with 9 items (My religious beliefs are what lie behind my whole approach to life). The second subscale assesses extrinsic

religiosity with 11 items (I pray chiefly because I have been taught to pray) and the third subscale includes the quest dimension of religiosity with 12 items (As I grow and change, I expect my religion also to grow and change). In previous research, the RLI has shown to have high internal reliability as the external subscale was reported to have a Cronbach's Alpha of 0.77, the internal subscale produced a Cronbach's Alpha of .88 and the quest subscale showed a Cronbach's Alpha of 0.77 (Pace, 2006). The current study used the 9-item intrinsic subscale during analysis of the data.

Belief in the paranormal was assessed using the 26-item 'Revised Paranormal Belief Scale' (R-PBS) by Tobacyk (2004). The R-PBS also has a 7-point likert scale with 1 being 'strongly disagree' to 7 being 'strongly agree'. There are 7 subscales within the R-PBS; traditional religious beliefs (The soul continues to exist through the body may die), Psi (Some individuals are able to levitate (lift) objects through mental forces), Witchcraft (Black magic really exists), superstition (Black cats can bring bad luck), Spiritualism (Your mind or soul can leave your body and travel), extraordinary life form (The abominable snowman of Tibet exists) and precognition (Astrology is a way to accurately predict the future). Item 23 was reversed coded. The internal reliability for R-PBS was reported to yield a Cronbach's alpha of .92 (Wolfradt, 1996).

Levels of stress was assessed by the 'Perceived Stress Scale' (PSS) by Cohen and Williamson (1988) which contains 10 items (In the last month, how often have you felt confident about your ability to handle your personal problems). The scale includes a 5-point likert scale with 0 being 'never' and 4 being 'very often'. Item 4,5,7,8 were reversed coded. High internal reliability was reported as Cronbach's alpha of .89 (Roberti et al., 2006).

Meaning in life was assessed using the 'Meaning in Life Questionnaire' (MLQ), developed by Steger et al. (2006). This consists of 10 items (I am looking for something that makes my life feel meaningful), each one consisting of a 7-point likert scale with 1 being 'absolutely untrue' and 7 representing 'absolutely true'. The internal reliability for the MLQ was reported as Cronbach's alpha of .93 (Steger et al., 2006). Item 9 was reversed coded.

State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA) developed by Gros et al. (2007) was used to measure level of anxiety. The scale includes 42 items (I feel like I'm missing out on things because I can't make up my mind soon enough) which is broken down into two 21 item scales, with one assessing level of anxiety in the moment and the other scale measuring anxiety in general. This scale consists of a 4-point likert scale, with 1 representing 'not at all' and 4 being 'very much so'. Excellent internal reliability was found with a Cronbach's alpha of .90 (Gros et al., 2007).

Procedure

Collection of the data did not begin until ethical approval (Appendix 1) was granted by the research supervisor. All the participants were given a participant information sheet (Appendix 4) along with a consent form (Appendix 5) to gain their consent for taking part in the study, before participants began to fill out the questionnaires (Appendix 6). The questionnaire would take approximately 15 minutes to completely

fill it out. A debrief sheet (Appendix 7) was provided after participants completed their questionnaire, informing them of their right to withdraw their data from the study, up until the next following 4 weeks. After the debrief, participants were given the option to create a unique code (Appendix 8) to protect their privacy by keeping their identity anonymous. Two methods were used in recruiting participants to take part in the study. One method used to create the online questionnaire was Qualtrics, as it was a user-friendly tool for participants to easily complete their questionnaire on their electrical devices such as a laptop or phone. This method is an internet mediated research (IMR) (Padayachee, 2016). The Qualtrics link was shared on the Manchester Metropolitan University Research Participation Pool and also shared with family members and friends. The other method was printing paper copies of the questionnaire booklet and handing it out to participants who were available to complete it. Within both the online and paper version of the questionnaires, the measures were randomly rotated in order to remove order effects.

Results

The data collected from questionnaires and Qualtrics was inputted into SPSS v.24.0. The data was examined to ensure that the data met the assumptions for parametric tests. Some of the scores from the meaning in life scale (item 9), paranormal belief scale (item 23), and the stress scale (item 4,5,7,8) had to be reverse coded according to the researchers instructions. Then the total of each scale was calculated prior analysing the data.

Reliability Analysis

Following internal consistency analysis of each questionnaire, the reliability for the 'meaning in life' scale was good, $\alpha = .75$. Results also showed that the reliability for the 'anxiety' was greater than satisfactory, $\alpha = .96$. The reliability for the 'religiosity' was also found to be greater than satisfactory, $\alpha = .94$. The 'paranormal belief' scale reliability was high, $\alpha = .90$, and the 'stress' scale reliability was also high, $\alpha = .81$.

Descriptive statistics

Table 1. Means and Standard Deviation for all variables

	<i>M</i>	<i>SD</i>
Anxiety	79.61	24.81
Stress	22.16	6.00
Religiosity	117.23	40.2
Paranormal beliefs	89.15	27.00
Meaning in life	48.69	9.09

Note. *M* – Mean, *SD* – Standard Deviations

Pearson correlations were calculated for each variable. In table 1, the findings display that there was a moderate positive correlation between levels of religiosity and meaning in life, $r(120) = .36, p < .001$. Another significant moderate positive correlation was found between levels of religiosity and paranormal belief $r(120) = .38, p < .001$. There was a significant weak positive correlation between levels of

anxiety and religiosity $r(120) = .17, p < .05$. There was a significant strong positive correlation between levels of stress and anxiety, $r(120) = .53, p < .001$. Additionally, there was a non-significant correlation found between levels of religiosity and stress, $r(120) = .10, p = .13$. Paranormal belief did not significantly correlate with stress, $r(120) = .07, p = .23$, anxiety, $r(120) = .15, p = .05$ and meaning in life, $r(120) = .05, p = .28$. Meaning in life was found to have a non-significant correlation with stress, $r(120) = .03, p = .37$ and anxiety, $r(120) = .01, p = .46$.

Table 2. Correlations between all variables.

	1	2	3	4	5	6
Religiosity		.88**	.36**	.38**	.17*	.10
Intrinsic religiosity			.37**	.27**	.11	.08
Meaning in life				.05	.01	.03
Paranormal beliefs					.15	.07
Anxiety						.53**
Stress						

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

Pearson correlations were computed for each subscale of all the variables. The findings in table 3 shows that intrinsic religiosity has a significant strong positive correlation between intrinsic religiosity and spiritualism, $r(120) = .86, p < .001$. Intrinsic religiosity also had a significant strong positive relationship with traditional religious belief, $r(120) = .59, p < .001$ and witchcraft, $r(120) = .53, p < .001$. There is a significant moderate positive correlation between intrinsic religiosity and meaning in life presence, $r(120) = .43, p < .001$, however there is a non-significant correlation between intrinsic religiosity and meaning in life search $r(120) = .08, p = .18$. Quest religiosity has a significant moderate positive correlation with meaning in life search, $r(120) = .37, p < .001$. Extrinsic religiosity has a strong positive correlation with spiritualism $r(120) = .88, p < .001$, traditional religious belief $r(120) = .61, p < .001$ and witchcraft $r(120) = .53, p < .001$. Intrinsic religiosity has a weak positive correlation with Psi, $r(120) = .16, p < .05$ and a weak negative correlation with precognition, $r(120) = -.16, p < .05$. There is a significant weak negative correlation between meaning in life presence and precognition, $r(120) = -.20, p < .05$.

Table 3. Correlations between subscales of all the variables.

	1	2	3	4	5	6	7	8	9	10	11	12
Intrinsic religiosity		.84**	.54**	.59**	.53**	.16*	-.30**	.86**	-.03	-.16*	.43**	.08
Extrinsic religiosity			.63**	.61**	.53**	.20*	-.17*	.88**	.06	.01	.29**	.12
Quest religiosity				.36**	.39**	.21*	-.00	.56**	.22**	.14	.02	.39**
Traditional religious belief					.64**	.28**	-.03	.56**	.13	.09	.39**	-.04
Witchcraft						.38**	-.05	.57**	.28**	.22**	.28**	.05
Psi							.37**	.22**	.47**	.59**	.00	.04
Superstition								-.16*	.34**	.57**	.23**	-.02
Spiritualism									.03	.00	.32**	.10
Extraordinary life forms										.51**	-.17*	.04
Precognition											-.20*	.00
Meaning in life presence												-.06
Meaning in life search												

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

Regression Analysis

Before conducting a regression analysis, four assumptions of absence of outliers, multicollinearity, independent errors and homoscedasticity were assessed. This was to ensure that a multiple regression was a valid means for analysing the data. A standard residuals analysis was conducted and no outliers were shown in the data (Std. Residual Min = -2.49, Std. Residual Max = 2.00). The collinearity tests revealed that the data met the assumption of no multicollinearity (Meaning in life, Tolerance = .10, VIF = 1.00; Stress, Tolerance = .72, VIF = 1.39; Anxiety, Tolerance = .71, VIF = 1.41; Paranormal beliefs, Tolerance = .98, VIF = 1.03). The data also met the assumption of independent errors (Durbin-Watson = 2.00). The standardised residuals scatterplot had shown the data met the assumptions of linearity and homogeneity of variance (All SPSS output displayed in Appendix 2).

A multiple regression analysis was completed to examine the extent to which the variables 'meaning in life', 'anxiety', 'stress' and 'paranormal beliefs' could predict internal religiosity. Using the 'enter' method, a significant model developed ($F(4,115) = 7.34, p < .001$). A moderate relationship was found between the variables ($R = .45$) and the model could account for approximately 20% ($R^2_{adj} = .18$). Only 2 of the variables were shown to be significant predictors for internal religiosity. Meaning in life was found to be the most significant predictor for internal religiosity, $\beta = .36, t(115) = 4.29, p < .001$. Paranormal belief was another significant predictor for internal religiosity, $\beta = .24, t(115) = 2.81, p < .001$. Anxiety was found to be a non-significant predictor for internal religiosity, $\beta = .14, t(115) = 1.43, p = .15$. Stress was also found to be a non-significant in predicting internal religiosity, $\beta = -.02, t(115) = -.16, p = .88$.

Table 3. A summary for regression analysis of prediction of internal religiosity

	<i>B</i>	<i>SE B</i> (Std. Error)	β (beta score)	<i>t</i>
(Constant)	-3.3	8.03		-1.15
Meaning in life	.53	.12	.36	3.68
Stress	.12	.04	.24	-.16
Anxiety	.03	.05	.06	1.44
Paranormal beliefs	.04	.22	.02	4.38

Note: $R = .20$

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

The results displayed in table 3 indicate that meaning in life and paranormal belief are significantly moderate predictors of internal religiosity.

Another multiple regression analysis was carried out to assess the extent to which the variables 'intrinsic religiosity', 'anxiety', 'stress' and 'meaning in life' could predict paranormal beliefs. With the use of the 'enter' method, a significant model developed ($F(4,115) = 2.75, p < .05$). A moderate relationship was found between the variables ($R = .30$) and the model could account for approximately 9% ($R^2_{adj} = .06$). Only

intrinsic religiosity was found to be a significant predictor for paranormal beliefs, $\beta = .27$, $t(115) = 2.81$, $p < .05$. Meaning in life was found to be a non-significant predictor, $\beta = -.05$, $t(115) = -.51$, $p = .61$. Anxiety was another predictor that was found to be non-significant, $\beta = .13$, $t(115) = 1.22$, $p = .23$. Stress was also found to not be significant in predicting paranormal beliefs, $\beta = -.02$, $t(115) = -.19$, $p = .85$.

Table 4. Multiple regression analysis summary for prediction of paranormal beliefs.

	<i>B</i>	<i>SE B</i> (Std. Error)	β (beta score)	<i>t</i>
(Constant)	67.15	16.07		4.18
Meaning in life	-.14	.29	-.05	-.51
Anxiety	.14	.11	.13	1.22
Stress	-.09	.47	-.02	-.19
Intrinsic	.55	.19	.27	2.81

Note: $R^2 = .09$

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

These results indicate that intrinsic religiosity is a significant factor in predicting paranormal beliefs.

Discussion

The aim of this study was to explore the relationship of intrinsic religiosity with meaning in life, stress, anxiety and paranormal beliefs. The most significant result from the multiple regression analysis demonstrated that meaning in life and paranormal beliefs are the most important variables in predicting internal religiosity. This suggests that having a greater sense of meaning of life and high belief in paranormal can contribute to having high internal religiosity. The multiple regression analysis further revealed that intrinsic religiosity was found to be an important predictor for paranormal beliefs. which indicates that the level of paranormal belief can be influenced by intrinsic religiosity.

The finding that meaning in life predicts intrinsic religiosity is supported by Chamberlain and Zika, (1988) who found a positive relationship between meaning in life and intrinsic religiosity, which reinforces that if an individual has high level of meaning in life, it's more likely that they will have a high level of intrinsic religiosity. This could be because, individuals with high intrinsic religiosity tend to live their life in the way their religion has dictated and therefore as religion promotes a purpose and meaning in their lives, high intrinsic religiosity can increase likelihood of finding a sense of meaning in life (Allport, 1963). Additionally, results also revealed that intrinsic religiosity had a positive correlation with meaning in life presence, however there was a non-significant correlation between intrinsic religiosity and meaning in life search. This means that as internal religious beliefs increases within an individual, it can increase the sense of meaning that is already existing in their lives, however it does not mean it will increase the individual's need to search for a meaning in their life. This is be due to the fact, as people with internal religious beliefs will be expected to already have an existing purpose and meaning in their

lives, and therefore will not need to search for a meaning. Due to the correlation between the variables, it may be that the existence of meaning and purpose in individual's life, can strengthen and increase their intrinsic religious beliefs. Using findings from Steger and Frazier (2005), even though there may not be a direct relationship between a search for meaning and intrinsic religiosity, it may be that the need to find a meaning in life can facilitate the relationship of intrinsic religiosity with life satisfaction.

Wuthnow (1978) previously found religious beliefs positively relating with paranormal beliefs, however as the finding is based on overall religious beliefs, it is difficult to assume if there is a positive relation between intrinsic religiosity and paranormal beliefs. Therefore this finding by Wuthnow's (1978) research cannot completely be supportive of intrinsic religiosity in being a predictor for paranormal beliefs. On the other hand, a significant correlation was found between overall levels of religiosity and paranormal belief, which links with the relationship found by Wuthnow's (1978). Other research have contradicted this positive association between religious beliefs and religiosity, proposing that that both variables are independent of each other or they have a negative connection (Rice, 2003). Research has supported this with findings that show differences in people who believe in the paranormal and people who have religious beliefs (Langston et al., 2018; Aarnio and Linderman, 2007). The current study has found that intrinsic religiosity to have a significant strong positive relationship with some elements of paranormal beliefs such as spiritualism, traditional religious belief and witchcraft, relating with Wuthnow's (1978) findings.

On the other hand, results also showed that intrinsic religiosity had a negative relationship with superstition, precognition, which are other aspects of paranormal beliefs. A non-significant relationship was also found between intrinsic religiosity and extraordinary life forms. These findings are in support of Rice's argument, as well as the research which has revealed differences in religious believers and paranormal believers (Langston et al., 2018; Aarnio and Linderman, 2007) however the research is based on correlational findings, which means other factors can also account for the differences between paranormal beliefs and religious beliefs. The correlational findings from the current study imply that maybe some aspects of paranormal belief are related to intrinsic religious beliefs, however not all factors underlying paranormal beliefs such as superstition, precognition and extraordinary life forms are representative of intrinsic religiosity. Linking the results with literature from Irwin's (2009) proposal, it may be that even though intrinsic religious beliefs could be independent, they may share similar beliefs to some factors of paranormal beliefs.

The variables stress and anxiety were not significant in predicting intrinsic religiosity, however anxiety was found to have a correlation with only stress and religiosity, which indicates that even though anxiety is not found predictive of intrinsic religiosity, there is still an association between the two variables. As previous research has found intrinsic religiosity to be negatively associated with death anxiety (Hui and Fung, 2008) and not with social anxiety (Storch et al., 2002), it may be that different religious beliefs can influence the specific types of anxiety. For example, an individual with strong intrinsic religious belief of experiencing an immortal afterlife can help reduce their feelings of anxiety on death (Alvarado et al., 1995). Clay's (1996) argument on how believing in God to be compassionate and perceiving God to provide guidance and support can reduce the feeling of anxiety in individuals,

reinforcing that anxiety can be reduced, depending on how the individual perceives and defines their religious beliefs.

Other significant results from this study revealed there was a negative correlation between meaning in life presence and precognition, which implies that as the existence of meaning in life increases, the individual is less likely to believe in the ability to predict the future. However, meaning in life presence was found to positively correlate with traditional religious beliefs, witchcraft, spiritualism and superstition. This means that some aspects of paranormal belief may relate to existing presence of meaning in life, along with religious beliefs. As previous research has found that having meaning in life can have significant impacts on well-being such as improving positive mood (Bonebright et al., 2000), it may be that the positive effect from experiencing a sense of meaning can lead to other more specific beliefs such as paranormal (Linderman and Aarnio, 2006). Future research could further investigate on this relationship between presence of meaning in life and paranormal belief in order to understand the factors contributing.

There may be real-world implication for these findings, as they may be useful in counselling with clients who are religious. For instance, as results have shown that people with high intrinsic religiosity are more likely to have a high sense of meaning in their lives, therefore religious beliefs may function as a powerful source of meaning in life (Hood et al., 2009). This could help counsellors to encourage clients on using their religious beliefs in reflecting on their personal sense of meaning in their lives (Park and Yoo., 2016).

A limitation of this study is that the sample is mostly based on data from females, as the sample included 113 females and only 7 males. This problem with this is that it is difficult to generalise the findings to males. Another limitation is the use of questionnaires in this study to collect data. Even though questionnaires makes it useful to distribute to participants, the disadvantage of using questionnaires is that it increases the chance of social desirability bias. This is where participants provide responses that they perceived to be favourable to the researcher. Therefore responses of the participants may not even be truthful, which can question the validity of findings. For further improvement, future research in this area could focus on the relationship of intrinsic religiosity with stress, anxiety, meaning in life and paranormal belief in men. This would be beneficial in comparing gender differences within this area of research, as previous research has discovered that association between religiosity and mental health to be much stronger in women than men (Wong et al., 2006). Future research could also investigate a qualitative research using interviews which could allow participants to give more detailed and in-depth responses on their personal experiences with religiosity, meaning in life, paranormal, stress and anxiety.

Conclusion

The aim of this study was to investigate the relationship of intrinsic relationship with meaning in life, paranormal beliefs, stress and anxiety. Significant findings revealed that meaning in life and paranormal belief was predictive of intrinsic religiosity and intrinsic religiosity was found to be predictive of meaning in life. In addition, findings have demonstrated significant relationships between intrinsic religiosity and anxiety

as well meaning in life and some aspects of paranormal beliefs. Implications for the relationship between meaning in life and intrinsic religiosity can be useful in cases of counselling for individuals with strong intrinsic religiosity. Future research could investigate using methods of assessments that could provide in-depth data to provide a further insight within this area.

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