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Resilience

and its relationship to

Religious Problem Solving and Coping

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degree (Psychology Specialization) at DBS School of Arts, Dublin.

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Abstract

The aim of the current study was to investigate the relationship between resilience and religious problem solving coping. To conduct the study participants were given paper base questionnaires or the option to submit an online Google forms response via e mail/social network link. The participants (N=116) consisted of 35 Males and 81 Females. This was a cross sectional quantitative correlational design. This was a sample of convenience where engagement in religious practice was compulsory. Data was into SPSS 18 and results showed that Resilience correlated significantly to Positive Religious Coping, Negative Religious Coping, Collaborative Problem Solving, Beliefs & Practices and Social Support .Also Positive Coping and Collaborative Problem Solving were found to mediate the relationship between Resilience and Religiosity.

Introduction

“Inside of a ring or out, ain't nothing wrong with going down. It's staying down that's wrong”(Muhammad Ali, n.d.)

Why is it that some individuals seem to meet life's challenges and overcome them, sustaining a reasonably positive state of well being throughout? Is this merely down to a difference in their genetic disposition, innate biological make-up or a particular psychological mindset that leads to a more successful outcome in the environment they occupy? Health research has shown the clear advantage that resilient individuals have in both the prevention and recovery from serious illness. They recover from stressful situations faster and more effectively, going forward with the benefits of that experience as a stronger individual. In the face of adversity, resilient individuals seem to be able to abstract themselves and navigate uncertainty successfully, as if supported by an intrinsic belief in a successful outcome. But what is the nature of this belief and is it a common mechanism that can be reframed to suit an individual's needs at the time?

One approach to exploring the relationship between belief and resilience is to examine it within a religious context. Most religions would see themselves as offering in part, a program for life or belief framework which provides a level of support that somehow abstracts the devotee from the full impact of adversity. Inherent in this framework is a cornerstone of faith in a governing and supportive deity which exists outside of the self but acts from within. Both these concepts of abstraction from adversity and intrinsic belief are mirrored in resilient individuals and it can also be said that much of the characteristic traits of resilience are promoted within religious teachings. There is also research evidence to suggest the health benefits from engaging in religious practice, which will be alluded to later on.

The likelihood follows therefore, that resilience maybe an integral output of religious practice. There is some research in this area, but to date it has yet to examine what the nature of what this relationship might be. Therefore, the aim of this study is to determine whether there is a relationship between religious practice and resilience but moreover, its particular interest is in the form that this relationship takes. Given that an individual is religious, how do they problem solve and cope in the face of adversity within a religious context and does this predict a level of resilience.

Resilience and Health

Resilience can be described as the ability to maintain relatively stable, healthy levels of psychological and physical functioning when exposed to an isolated and potentially highly disruptive event (Bonanno, 2008), where the negative effects of stress are moderated in an ongoing process of adaptation that facilitates success (Wagnild & Young, 1993). From a health perspective, research on resilience contributes significantly to understanding the factors that determine the success of an individual's prevention and recovery from physical and mental health illness. In a study by (Bitsika, Sharpley, & Peters, 2010) resilience was shown to be negatively associated with anxiety and depression. This study based on a group of 401 Australian university students recommended resilience as one of three focus areas for therapy intervention.

It follows therefore that in trying to determine the expected level of treatment response it might be advantageous to know what level of trait resilience exists at the outset and what affect this is likely to have on the success of the treatment. According to Min, Lee, Lee, Lee, & Chae (2012) understanding the individual differences in how people respond to stress might help significantly in determining an individual's chances of successful recovery from depression. This was based on their examination of how low trait anxiety and resilience levels interacted to predict treatment response in a group of 178 outpatients with expressive disorders. Patients with

low trait anxiety coupled with high levels of resilience predicted better response rate to treatment.

But there are also those individuals who suffer from long term incurable illness or disability that are forced to accept that there is no change likely for their condition. According to Turner & McLean (1989) individuals who are physically disabled are at a higher risk for anxiety, depressive symptoms and major depressive disorders. It follows therefore that a higher level of resilience may contribute as a buffer against these conditions. In a study of 255 individuals with spinal cord injury by Catalano, Chan, Wilson, Chiu, & Muller (2011) it was shown that depressive symptoms had a negative relationship with resilience characteristics. More specifically they identified how high levels of resilience may buffer the effect of perceived stress levels on depressive symptoms.

Aside from depression resilience has been found to be a significant variable in relation to psychosocial stress. In a study by De Robert, Barontini, Forcada, Carrizo, & Almada (2010) chronic psychosocial stress coupled with low resilience has been linked to a high risk of hypertension a leading cause of cardio-vascular disease. The level of psychosocial stress we experience results from our primary and secondary appraisals of a threat which may be real or imagined (De Robert et al., 2010). The ability to reduce the appraisal of threat is indicative of a greater ability to control both positive and negative emotions (Tugade & Fredrickson, 2004). Good control of emotions is characteristic of resilient behaviour and is useful in predicting mental health outcomes (Florian, Mikulincer, & Taubman, 1995).

Individuals who engage in religious practice may experience a buffering effect against the causes of psychosocial stress. They may also benefit from a religious community that provides a support structure during times of serious illness. But membership of a religious community alone may not necessarily guarantee a positive outcome. Alternatively, depending on

an individual's experience within their particular religion, the threats that lead to psychosocial stress may be exacerbated. Within a religion that was particularly authoritarian, judgemental and oppressive an individual may experience poor acceptance within the group, reduced social status, low social esteem and self-worth. However there is evidence to show that those psychosocial threats do not always lead to a poor outcome. Long term research conducted on 505 high risk children in Hawaii has found that between 50% and 70% of them went on to be successful, competent and caring individuals (Werner & Smith, 1992). Given these findings there may be evidence to suggest overriding factors beyond an individual's environment that lead to lower or higher resilience.

Resilience as a trait

Genetic and biological factors of resilience.

There may be a genetic and innate biological structure that provides a better foundation for coping under duress. Regardless of their environment an individual may possess a genetic or biological advantage. A longitudinal study by Caspi et al. (2003) explored a genetic link by looking at the promoter region of the serotonin transporter gene 5-HTT, implicated in studies on depression. There was increased evidence of depressive symptoms, diagnosable depression and suicidality in relation to stressful life events by individuals with one or two copies of the short allele of the 5-HTT promoter polymorphism than the long allele. Other research by Tannenbaum & Anisman (2003) investigated the likelihood of a genetic disposition for resilience by using specifically bred BALB/cByJ (stressor reactive) and C57BL/6ByJ (relatively resilient) mice. The stressor reactive mice, while under restraint showed more widespread and pronounced variations of nor epinephrine and serotonin utilization over the relatively resilient mice. When a chronic stressor was applied the results for the stressor reactive mice showed "*Marked behavioural alterations thought to be indicative of depression- and anxiety-like states*"

(Tannenbaum & Anisman, 2003) .This demonstrates at a genetic level how low resilience in the face of adversity could possibly lead to mental health issues.

From a neurobiological perspective, exploring the neurochemical response patterns to acute stress helps to predict, prevent, and treat stress-related psychopathology. Work by Charney (2004) identified eleven possible neurochemical, neuropeptide, and hormonal mediators of the psychobiological response to extreme stress and vulnerability .He also was able to relate the neural mechanisms of reward and motivation, fear responsiveness and adaptive social behaviour to the character traits associated with resilience . Neuropeptides are of specific interest because Neuropeptide Y (NPY) has been shown to have a regulatory affect on behavioural response. An animal study by Cohen et al. (2012) was able to show that animals severely affected by the experiment stressors showed a down regulation of the Neuropeptide Y (NPY) . This understanding may help identify high risk individuals and contributes greatly to the understanding of why certain individuals cannot regulate their behavioural responses to stressors as well as others. It is also adds evidence to there being an underlying biological reason for resilient individuals being able to manage their emotions more effectively.

Psychological factors of Resilience.

But what's not completely certain is whether these genetic and neurobiological markers are present at birth and remain unchanged throughout the developmental lifespan. Can resilience be developed through exposure to the right environmental factors and psychological conditioning? Research by Tugade & Fredrickson (2004) exploring the subjective, cognitive, and physiological qualities of resilience , found that an important trait of highly resilient individuals is their appraisal of stressors as challenges rather than threats. Trait resilience was also positively associated with positive mood and happiness. By monitoring cardiovascular recovery times after stress it was found that positive emotions mediated between resilience and cardiovascular recovery .The more positive the emotion, the quicker the recovery of the

cardiovascular system (Tugade & Fredrickson, 2004). Therefore the effect of positive emotion is not only seen as a psychological factor but it is also observable at a biological level.

Resilience has been shown to have a significant relationship to personality traits and coping styles. It has been shown to be negatively associated with neuroticism but positively related to both extraversion and conscientiousness (Campbell-Sills, Cohan, & Stein, 2006). Although coping styles more than personality were found to be a better predictor of resilience. *“Task-oriented coping was positively related to resilience, and mediated the relationship between conscientiousness and resilience”* (Campbell-Sills et al., 2006). Given the strength of this relationship and reframing it within a religious context, there’s reason to explore the nature of the behaviour of conscientious religious devotees, who are dutifully engaged with their religious practice. If they exhibit a high level of resilience, they may in fact be achieving it because it is mediated by their religious coping style rather than just their conscientious engagement with religious practice alone.

Resilience as a process

By examining resilience in connection with religious practice it is essential that we consider resilience as a process. By understanding the process of resilience we're naturally aiming towards understanding it as something that can be learned. A process implies multiple parts that come together as a whole. The process of resilience could be understood by looking at the interaction of its key qualities. Multiple lists of typical resilient qualities have been generated by a number of studies. A sample of these studies, featured in an issue of "*American Psychologist*" (as cited in Richardson, 2002) details the combined list of resilient qualities as being; happiness, subjective well-being, optimism, faith, self-determination, wisdom, creativity, excellence, morality, gratitude, forgiveness, hope, dreams, self control and humility. Measuring the interaction of this exhaustive list as a whole would be difficult and vulnerable to confounding variables, given their sensitivity to cultural diversity. Also each one of these resilient qualities could be deconstructed further into more than one psychological construct.

Higher levels of self efficacy and self esteem are two psychological constructs that have been associated with high resilience in the adverse situations (Rutter, 1985). In exploring resilience as a process within a religious context therefore it may be useful to examine how an individual's perception of God affects their self esteem but also how someone might use their religion to maintain their sense of self esteem. In a study by Benson & Spilka (1973) self esteem was positively associated with loving and accepting images of God and negatively associated with rejecting images. This has ramifications in terms of an individual's use of positive or negative religious coping style. K. I. Pargament, Smith, Koenig, & Perez (1998) outline a positive religious coping style as one that views God as benevolent presence, acting in best interest, facilitating growth in collaboration with him as a result of the adversity. A negative style on the other hand perceives the adversity as a punishment from a God who's otherwise disconnected and powerless to assist. These negative coping styles echo the rejecting images of

God mentioned previously by Benson & Spilka (1973). Given that a negative coping style has been shown to lead to poorer physical health, worse quality of life, and greater depression (Pargament et al., 1998) it may also be related to low self esteem.

Also research by Steele, Spencer, & Lynch, (1993) shows that subjects with high self esteem tend not to rationalize a threat to their self esteem. By choosing more favourable self-concepts they maintain their self integrity. “*Self-affirmations of one sort neutralized self-image distresses of a different sort*” (Steele et al., 1993). This may be important in understanding the process of resilience within a religious context, because it illustrates a mechanism that is being used to maintain self-integrity. Within a religious context it may be possible that the same mechanism is reframed, whereby individuals experiencing threats to their self image can rely on their faith and connection with a religious community to provide an alternative source for self-affirmation of integrity, without the need to counter or rationalize the threat itself.

The above illustrates how a single construct like self esteem can be taken in isolation for further examination with regard to the process of resilience. The same process analysis could be undertaken with other psychological constructs related to resilience. Richardson (2002) posits a higher level view where resilient qualities are acquired by choosing to grow and develop from disruptions to our state of “*Biopsychospiritual homeostasis*” which he defines as “*a point in time when one has adapted physically, mentally and spiritually to a set of circumstances whether good or bad*” (Richardson, 2002). This process is set out as a linear model which describes four pathways of reintegration after a disruption; resilient reintegration, reintegration back to homeostasis, reintegration with loss and dysfunctional reintegration. Individuals who reintegrate with loss do so having lost “*motivation, hope or drive*” whereas “*dysfunctional reintegration occurs when people resort to substances, destructive behaviours, or other means to deal with life prompts*” (Richardson, 2002). From a religious perspective biblical teachings via quotations like “*Perseverance must finish its work so that you may be mature and complete, not*

lacking anything.” (James 1:4) and “*I know your deeds, your love and faith, your service and perseverance, and that you are now doing more than you did at first*” (Revelation 2:19) all allude to a process of endurance after disruption with a view to reintegration having grown and developed from the experience. The parallels with the process of resilience as described above are many. Fundamentally the similarity lies in the fact that they are both models but the religious perspective introduces a transpersonal element. The nature of the relationship religious individuals have with that element in adverse times is what is of interest in this study.

Religious Coping and Religiosity

There is evidence of strong links between physiology and religiosity/ spirituality (Seeman, Dubin, & Seeman, 2003, Hixson, Gruchow, & Morgan, 1998, Graham et al., 1978) and positive health and religiosity, but it remains unclear as to what aspects of religiosity explain this effect (Clements & Ermakova, 2012). Given that resilience has also been shown to be a predictor of positive health outcomes Min, Jung, et al., 2012; Wilks (2008), this might be an indication of a strong link also between religiosity and resilience. There’s a difficulty in establishing this because it would require a comprehensive measure of religiosity that worked across different denominations and cultures (Hall, Meador, & Koenig, 2008). Universal scales of religiosity that are designed to be valid, fail to avoid a reductionism that complicates all spirituality measurements (Moberg, 2002). When 101 studies were examined by Koenig, McCullough, & Larson (2001), 89% of them used only a few scale items based on membership of the clergy, denomination and attendance as a measure of religiosity. Also the frequency of church attendance, prayer and the level of importance someone attaches to their religion, does not effectively predict health outcomes until you account for the mediating effect of the individuals specific coping style (K. I. Pargament et al., 1998). Using traditional measures of religiosity alone for predicting health outcomes would not provide useful knowledge about what exactly the

individual is doing to manage adversity or how are they doing it. Therefore in trying to predict resilience in a religious context it may be more useful to include a coping style as well as religiosity.

Religious coping on the other hand can be summarised into two patterns, positive and negative. The positive pattern illustrates a more secure relationship with God and a more meaningful existence coupled with a spiritual connection with others. A negative pattern is a less secure relationship with God and a less meaningful existence, while going through “*a religious struggle for significance*” (K. I. Pargament et al., 1998). However much of the research on religious coping is based on recall over the previous month where participants involved in the research were asked to consider how they reacted in the past month after a single negative event. Where a negative event did not occur participants were asked to respond with regard to how they thought they might have felt. In a study by Bjorck & Thurman (2007) it was posited that the accumulation of more than one negative life event would have a very different affect on an individual’s religious coping response. According to Lazarus and Folkman (as cited in Bjorck & Thurman, 2007) people reappraise their situation and modify their coping after having come through a negative event. This is relevant because your particular religious coping style may be therefore be dependent on the timing and number of negative events. As more negative events occur together as a continuum more emphasis may be given to a more negative coping style. “*As negative events increase significantly, religious persons might begin to reappraise their view of God in the face of continued stress without relief*” (Bjorck & Thurman, 2007). This also mirrors the resilience process of disruption and reintegration as described by Richardson (2002).

Religious problem solving

According to Rutter (1985) a sense of self-esteem, self-confidence, self-efficacy, adaptability and an ability to adopt different social problem-solving approaches are key characteristics of a resilient individual. In the context of this study religious communities include God as part of their social network and utilize this connection when facing adversity. By measuring their particular religious problem solving style it may reveal much about how their particular approach might relate to resiliency. Religious problem solving entails three possible approaches when facing a challenging life event. One which defers the problem to God, one which collaborates with God and one which is wholly self-directed with the exclusion of God (Fox, Blanton, & Morris, 1998). Just as Bjorck & Thurman (2007) showed the dynamic nature of religious coping styles, work by Yelsma & Montambo, (1990) illustrates how religious problem solving styles are also subject to change relative to circumstance and the time elapsed since the stressful event. Fifty five myocardial infarction patients in a period of recovery over a forty eight month period were assessed at three separate intervals using measures of religious problem solving. Although no particular relationship to their recovery was seen at the outset, a noticeable reduction in the collaboration and deferring style and an increase in the self directed style became evident as time went on. This may be indicative of an individual's reaching out to religion in times of crisis, which could be argued to be a cultural or habitual reaction rather than an overly religious one. This reflects well with the model for crisis theory by Caplan (as cited in Halpern, 1973) where he explains how people in crisis move from a habitual problem solving style dramatically to a disorganised trial and error approach reflecting their feelings of helplessness and ineffectiveness. The move to a self directed style exhibited by the patients in Yelsma & Montambo (1990) may just be a return to a more habitual problem solving style in the

latter half of their recovery. Given that this study has not specifically targeted individuals who are recovering from crisis it remains to be seen what the prevalent problem solving style is.

Aims and Hypothesis

The first aim of the study is to examine relationship between resilience, a self directed problem solving style and a positive coping style.

- The first hypothesis is that resilience will be positively related with a self directed problem solving style.
- The second hypothesis is that resilience will be positively related with a positive religious coping style.

The second aim is to investigate the relationship between resilience and a collaborative problem solving style.

- The third hypothesis is that Resilience will be positively related with collaborative problem solving style.

The third aim is to investigate the relationship between resilience, a deferring type problem solving style and negative religious coping style.

- The fourth hypothesis is that resilience will be negatively related to a deferring type problem solving style.
- The fifth hypothesis is that resilience will be negatively related to a negative religious coping style.

The fourth aim is to investigate whether resilience can be predicted based on the following variables, a self directed, collaborative, positive coping style and religiosity (beliefs and practices and social support).

The fifth aim is to investigate whether religious coping, collaborative and deferral problem solving styles acts as a mediators between religiosity and resilience.

- The sixth hypothesis is that a self directed problem solving style, collaborative problem solving style, positive coping style and religious beliefs & practices and social support will be good predictors of resilience.

Method

Materials

PC Hardware

Intel® or AMD x86 processor running at 1GHz or higher. Memory: 1GB RAM or more recommended; Minimum free drives space: 800MB; CD-ROM drive; Super VGA (800x600) or higher-resolution monitor.

PC Software

Operating system: Microsoft Windows XP (Professional, 32-bit) or Vista® (32-bit or 64-bit).

PASW Statistic software package Ver. 18.0; Microsoft Office ®Word and Excel 2007.

Internet Explorer Ver. 8.0 or greater/Firefox Ver. 19.0.2

Google Drive account for Google forms.

E Mail account (Gmail recommended for consistency)

Participants

Independent samples of adults were selected from religious groups and clergy connected with churches and colleges of various denominations around Dublin and Wicklow. There were 116 participants in total, aged between 18 and 75 + years .Age and gender percentages of respondents were 50 to 64 years (32.76%),65 to 75 years (27.59%), 30 to 49 years (25.86%), 75 + years (7.76%), 18 to 29 years (6.03%), Female (71 %) and. Male (29 %).The participants were predominantly Catholic (62.9%) and Irish (88.8%) of which 72.4% completed a hardcopy and 27.6% that responded online. They were not compensated for their participation in this study.

Design

This is a cross-sectional study using quantitative correlational analysis of data.

Table 1 *Predictor and Criterion variables*

Predictor variables (PV)	Criterion Variable (CV)
Self directed problem solving style	Resilience
Collaborative problem solving style	
Deferral problem solving style	
Positive Coping style	
Negative Coping style	
Beliefs and Practices	
Social support	

Procedure

An online questionnaire was prepared via Google forms which provided a link to enable people to submit a response via an eMail invite. A hardcopy derivative of this questionnaire was created in Microsoft Word to facilitate participants who were not comfortable using eMail or the internet. Within each church, key representatives or administrators nominated groups that fit the survey criteria. Follow up calls and e Mails we're used to request and confirm access times, dates and permissions. Key administrators in colleges were contacted via eMail and often in person to give further context. Follow up meetings were then arranged to distribute hardcopies with a view to collection at an agreed date.

Distribution of the questionnaires was preceded by a short verbal brief to explain the context, aims of the study and typical completion time for the questionnaire. Participants were also informed of the study's obligation in adherence to the P.S.I code of ethics and to their right of withdrawal at any time prior to submission. They were reminded that withdrawal after the point of submission would be seen as an infringement on the other participant's rights to anonymity and confidentiality. This brief was also included in the message body of any eMail /Facebook messages to the sample and also as an introduction section on the hardcopy and online version. A specific email account for the project was set up to provide a way for participants to submit questions and/or request clarification on any points of concern. This eMail address was used in all communication with the sample, including the final summary of high level findings which was available on request.

Measures

Resilience

Resilience was assessed using the Connor-Davidson Resilience Scale created by Connor & Davidson (2003) (see Appendix A). The scale contains 25 items, all of which carry a 5-point range of responses, as follows: Not true at all (0), Rarely true (1), Sometimes true (2), Often true (3), and True nearly all of the time (4). There is no reverse scoring and the total score ranges from 0–100, with higher scores reflecting greater resilience. These scores are totalled as an overall sum score for resilience. Participants are asked how they've felt over the past month with questions like; *“I am able to adapt when changes occur”*, *“During times of stress I know where to turn for help”*, *“I feel in control of my life”*.

The development of the scale by Connor & Davidson (2003) is leveraged from work on hardiness by Kobasa, (1979), resistance to psychiatric disorder by Rutter (1985) and work by Lyons (1991) on positive adjustment after trauma. The reliability, validity and psychometric properties were evaluated by administering the scale to a sample of N= 828 individuals, comprising of patients suffering from anxiety, post traumatic stress disorder and outpatients availing of psychiatric care. General outpatients as well as members of the general community were also sampled. The sample type was selected to see if the scale reflected the changes in resilience as their condition improved. Using repeated measures an ANOVA showed an increase in resilience score with greater improvement during treatment.

In a review of the instruments measuring resilience by Ahern, Kiehl, Sole, & Byers (2006) the scale showed good internal consistency with Cronbachs Alpha coefficient of .89 $\alpha = .89$) and good test-retest reliability ($r = 0.87$). As part of a psychometric evaluation of

the scale using Chinese and Iranian students, cross cultural validity was assessed from studies by Yu et al. (2011) and Khoshouei, (2009) respectfully. A Cronbachs Alpha coefficient of .91 ($\alpha = .91$) for the Chinese study and an alpha coefficient range of between 0.78 and 0.91 ($\alpha = 0.78$ to .91) for the Iranian study with good test-retest reliability ($r=0.78-0.88$). No test – retest data was available for the Chinese study. For this study the Cronbachs Alpha coefficient was .90 ($\alpha = .90$).

Religious Coping (Brief RCOPE)

Religious coping was assessed using the brief RCOPE scale (K. Pargament, Feuille, & Burdzy, 2011) (see Appendix B). Positive coping items and Negative coping is measure via two subscales, questions 1 through 7 measuring positive coping and questions 8 through 14 measuring negative coping. Each subscale carries a 4-point range of responses, as follows: Not at all (1) Somewhat (2) Quite a bit (3) A great deal (4). There is no reverse scoring and possible score ranges from 14–56, with higher scores reflecting higher positive /negative coping styles. Participants complete the questions based on how much or how frequently they responded as the question asked in relation negative events in their lives. An example of questions related to a positive coping style would be “*Looked for a stronger connection with God*”, “*Tried to put my plans into action together with God*” and the negative style would be “*Wondered whether God had abandoned me*”, “*Decided the devil made this happen*”.

The Brief RCOPE was derived from its larger 105 item scale predecessor RCOPE (K. I. Pargament et al., 1998). RCOPE proved too lengthy at times for inclusion in studies so it was decided to reduce it down to more practical format. Preliminary development of the Brief RCOPE was conducted at first using data from three separate samples. Participants (N=551) suffering from medical illness in two separate hospitals, Church members (N=296) from two

separate churches in Oklahoma shortly after the bombing and a college sample (N=540) who had experienced a serious negative event over the last three years all took part. This approach was then abandoned in favour of a more theoretical approach based on RCOPE. Confirmatory factor analysis produced two distinct factors from which 7 items were selected for each scale based on several criteria. The final Brief RCOPE was re tested using the college sample and then again using the hospital sample. Confirmatory factor analysis using LISREL VII statistical software showed the two factor solution to be a reasonable fit for the data and correlational results showed there to be a significant ,but weak positive correlation which gives weight to the separateness of the two scales .According to a review by (K. Pargament et al., 2011) Cronbachs Alpha coefficient for all but two of the above samples was .80 ($\alpha = .80$) and in studies for different regions and cultures positive coping ranged from .67 to .94 ($\alpha = .67 -.94$) while negative coping ranged from .60 to .90

($\alpha = .60 -.90$). The Cronbach alpha coefficient for this study was .81 for positive ($\alpha = .81$) and .82 for negative ($\alpha = .82$).

Religious Problem Solving Style (RPSS)

Religious Problem Solving style was assessed using the Religious Problem solving scale (K. I. Pargament, Kennell, Hathaway, & Grevengoed, 1988) (see Appendix C).The scale contains three subscales of 6 items each all of which carry a 5-point range of responses, as follows: Never (1), Occasionally (2), Fairly Often (3), Very Often (4),and Always (5). Each subscale measures a specific problem solving style, Self-Directed, Collaborative or a Deferral style. There is no reverse scoring and possible score for each style ranges from 6–30, with higher scores on each subscale reflecting higher affiliation with that style.

With a Self Directed style responsibility for solving the problem is assumed by the individual without Gods help. A Collaborative style works in partnership with God whereas the Deferral style leaves the problem with God alone to solve.

The development of the three distinct styles of religious problem solving is based on literature review and interviews with 15 people who were asked open ended questions related to how God was involved in their problem solving process. This was based on the premise that *“these three styles vary on two dimension underlying the individuals relationship with God: the locus of responsibility ... the level of activity in the problem solving process”* (K. I. Pargament et al., 1988) . The literature review defined six phases of problem solving *“define the problem, generate alternative solutions, select a solution, implement the solution, redefine the problem and maintain oneself emotionally”* (K. I. Pargament et al., 1988). Two items reflecting each type of religious problem solving style were generated for each of the six phases resulting in a scale of 36 items ,12 for each style. The scale was administered to a sample of Presbyterian churchgoers (N=197) and the results were processed by factor analysis (using SAS PROC FACTOR) which provided good support for the distinction between three separate problem solving styles. A reduced 18 item scale was also developed by reducing the 6 pairs in each of the 12 item subscales to one item. Cronbachs Alpha coefficient for the 18 item version (used in this study) were .93 ($\alpha = .93$), .91 ($\alpha = .91$) and .89 ($\alpha = .89$) for Collaborative, Self-Directing and Deferral styles respectfully. Cronbachs Alpha coefficients for this study were .95 ($\alpha = .95$), .89 ($\alpha = .89$) and .87 ($\alpha = .87$).

Systems of belief inventory (SBI-15R)

The SBI-15R (Holland et al., 1998) was used to measure religious and spiritual beliefs and practices, and the social support derived from a community that share those beliefs.(see Appendix D). The scale contains two subscales 10 items to measure Beliefs and Practices, 5 items to measure Social Support. Each subscale carried a 4-point range of responses, as follows: 0—Strongly disagree; 1—Somewhat disagree; 2—Somewhat Agree; 3—Strongly Agree. There is no reverse scoring and possible scores for the beliefs and practices scale ranges from 0–30 and for the social support scale; 0-15. Higher scores on the beliefs and practices are indicative of a higher level of belief and spirituality where as higher scores on the social support scale indicates a greater reliance on religious community for support. Example questions related to belief and practices would be “*Religion is important to my day-to-day life*,” “*I believe God will not give me a burden I cannot carry*.” “*I have experienced a sense of hope as a result of my religious or spiritual beliefs*”. The 5 item subscale measuring social support features questions like “*When I feel lonely, I rely on people who share my spiritual or religious beliefs for support*,” “*I seek out people in my religious or spiritual community when I need help*”(Holland et al., 1998).

The development of the Spiritual Beliefs Inventory (SBI-15R) began with the development of its larger predecessor the SBI-54R which was originally conceived to add extend the measure of “*Quality of Life*” measures so that spiritual perspective might be taken into consideration. 54 questions were developed that probed these four key areas “*religious practices and rituals ... relationship to a superior being ... social support from a community sharing similar beliefs ... a sense of meaning derived from an existential perspective*” (Hall et al., 2008).

The scale was administered to sample (N=301) of lay persons (71%) and clergy (29%) and through factor analysis was narrowed down to the SBI-15. Scale showed good internal consistency with Cronbachs Alpha coefficient of .93 ($\alpha = .93$) and good test-retest reliability ($r = 0.95$). Cronbachs Alpha coefficient for the beliefs and practice and social support sub-scales were .92 ($\alpha = .92$) and .89 ($\alpha = .89$) respectfully Holland et al. (1998). For this study Cronbachs Alpha coefficient for the beliefs and practice and social support sub-scales were .90 ($\alpha = .90$) and .84 ($\alpha = .84$).

Data Analysis

Analysis of the data was carried out after firstly correcting for missing values using the series mean method on a total of 13 cases. Descriptive statistics were carried as part of the exploration of the data. Normality of distribution was assessed by using a ShapiroWilk's test as part of this exploration. For inferential statistics full and partial correlations were carried out using Spearman's Rho correlation due to the non normal distribution of the data.

In an attempt to correct for skewness in four of the variables Log10 transformations were carried out which resulted in the correction of two of them. Shapiro Wilk's test for normal distribution was run on the adjusted data to see if the criteria for running a multiple regression could be met. Given the subsequent non normal distributions of the variables a multiple regression with any useful predictive qualities was not possible.

For the partial correlations it was necessary to re-run the Spearman's correlations from the syntax window in SPSS where ROWTYPE variable values were changed to "CORR" instead of "RHO". Running the partial correlation again within the syntax window forced SPSS to use the Spearman's matrix as input allowing for control of suspected mediating variables.

Ethics

Ethical concerns were minimal in this study but some sensitivity around participation did arise with some of the religious groups. Some leaders considered participation in the study to be unsuitable for their congregation due to the fact that they were in the process of conversion at the time. At all times and in any communication with the sample, whether it was verbal or written, participants were informed and reminded of my obligation to the ethical principles set out by Psychological Society of Ireland. By doing this they were reminded of my duty to respect for the rights and dignity of the person.

Possible aversion shown by participants to quantifying anything related to God were considered at the design stage of the study but this failed to materialize at anytime and especially during administration of the questionnaires. Participants were reminded at the outset of their right to withdraw at any stage prior to submission of a survey response. Once their response was submitted there was no way to identify their particular hardcopy or online submission. Participants were reminded that for me to attempt to do so, would compromise my obligation to the anonymity and confidentiality of the other participants.

Results

Descriptive statistics

After adjusting for missing values using the series mean method on a total of 13 cases in the raw data, descriptive statistics were conducted on the mean, median, standard deviation, minimum and maximum scores and range of scores for Resilience, Self directed Style, Collaborative Style, Deferral Style, Positive coping, Negative coping, Beliefs and Practices and Social support.

(see Table 2).

Table 2 *Descriptive Statistics of variables*

Variables	N	Mean	Median	Standard deviation	Min	Max	Range
Resilience	116	71.20	74.50	13.29	27	100	73
Self directed style	116	12.30	12.00	5.04	6	29	23
Collaborative style	116	19.31	19.15	6.97	6	30	24
Deferral style	116	15.17	14.00	6.07	6	30	24
Positive coping style	116	20.16	20.00	4.75	8	28	19
Negative coping style	116	9.82	9.00	3.55	7	25	18
Beliefs and practices	116	23.0	24.00	4.56	1	34	33
Social support	116	10.52	11.00	3.69	0	15	15

Inferential Statistics

Testing using a Shapiro Wilk's correlation revealed an abnormal distribution for all of the variables. Correlations between all variables were therefore conducted using a Spearman's Rho correlation (see Table 3).

Table 3 Spearman's Rho Correlations between Resilience, Self directed, Collaborative and Deferral problem solving styles, Positive and Negative Coping, Beliefs and practices and Social Support.

Variables	Resilienc e	Self directed style	Collaborativ e style	Deferral style	Positive coping	Negative coping	Beliefs & Practices	Social support
Resilience	1.000							
Self directed style	-.164							
Collaborativ e style	.245**	-.605**						
Deferral style	.012	-.321**	.615**					
Positive coping	.246**	-.403**	.571**	.489**				
Negative coping	-.273**	.174	-.067	.073	.093			
Beliefs & Practices	.385**	-.321**	.500**	.325**	.475**	.014		
Social support	.237*	-.370**	.496**	.300**	.442**	.087	.626**	1.000

* p significant at the .05 level ** p significant at .01 level

1. The first hypothesis is that resilience will be positively related with a self directed problem solving style.

To test this Spearman's Rho correlation was conducted between the total score for resilience and the total score for the self-directed sub-scale of the Religious Problem solving scale. The mean score for Resilience was 71.20 (SD = 13.29) and for Self directed problem solving was 12.30 (SD = 5.04). Not as predicted ,a Spearman's Rho correlation coefficient found that there was no significant relationship between Resilience and Self directed problem solving ($r_s(116) = 0.08, p = -.164$).

2. The second hypothesis is that resilience will be positively related with a positive religious coping style.

A Spearman's Rho correlation was conducted between the total score for resilience and the total score for the positive coping sub-scale of the Brief RCOPE. The mean score for Resilience was 71.20 (SD = 13.29) and for positive coping was 20.16 (SD = 4.75). As predicted a Spearman's Rho correlation coefficient found that there was a moderate positive significant relationship between Resilience and positive coping ($r_s(116) = 0.246, p < .008$). Therefore the null hypothesis is rejected. 6.05% of the variance in resilience can be attributed to a positive coping style.

3. The third hypothesis is that resilience will be positively related with a collaborative problem solving style.

Spearman's Rho correlation was conducted between the total score for resilience and the total score for the collaborative problem solving style sub-scale of the RPSS. The mean score for Resilience was 71.20 (SD = 13.29) and for collaborative style was 19.31 (SD = 6.97). As predicted a Spearman's Rho correlation coefficient found that there was a moderate positive significant relationship between Resilience and a collaborative style ($r_s(116) = 0.245, p < .008$). Therefore the null hypothesis is rejected. 6.05% of the variance in resilience can be attributed to a collaborative coping style.

4. The fourth hypothesis is that resilience will be negatively related with a deferral problem solving style.

Spearman's Rho correlation was conducted between the total score for resilience and the total score for the deferral problem solving style sub-scale of the RPSS. The mean score for Resilience was 71.20 (SD = 13.29) and for deferral style was 15.17 (SD = 6.07). Not as predicted a Spearman's Rho correlation coefficient found that there was no significant relationship between Resilience and deferral problem solving ($r_s(116) = 0.012, p = .899$).

5. The fifth hypothesis is that resilience will be negatively related to a negative coping style.

Spearman's Rho correlation was conducted between the total score for resilience and the total score for the negative coping sub-scale of the brief RCOPE. The mean score for Resilience was 71.20 (SD = 13.29) and for negative coping was 9.82 (SD = 3.55). As predicted a Spearman's Rho correlation coefficient found that there was a moderate negative significant relationship between Resilience and negative coping ($r_s(116) = -0.273$, $p < .003$). Therefore the null hypothesis is rejected .7.45% of the variance in resilience can be attributed to a negative coping style.

6. The sixth hypothesis is that a self directed problem solving style, collaborative problem solving style, positive coping style, religious beliefs & practices and social support will be good predictors of resilience.

Given that the distribution of the variables listed here was not normally distributed it they failed to meet the criteria for use in a multiple regression. It was decided to suspend the testing of this hypothesis. This decision was based on the results of a Shapiro Wilk's test performed before and after corrections were made for skewness using a Log10 transformation on all but two variables collaborative problem solving style and positive religious coping. Although skewness was corrected on two variables; Self directed and Deferral problem solving styles, the Log10 transformation was not sufficient to correct for normal distribution as shown by the Shapiro Wilk test.. (see Table 4).

Table 4 *Normal distribution results*

Variable	Shapiro-Wilk before Log transformation			Shapiro-Wilk after Log transformation		
	Statistic	df	Sig.	Statistic	df	Sig.
Resilience	.972	116	.017	.967	114	.007
Self Directed style	.923	116	.000	.959	114	.002
Collaborative style	.953	116	.000	.954	114	.001
Deferral style	.957	116	.001	.965	114	.004
Positive coping	.965	116	.004	.964	114	.004
Negative coping	.748	116	.000	.855	114	.000
Beliefs & Practices	.827	116	.000	.917	114	.000
Social support	.915	116	.000	.768	114	.000

For all variables above Shapiro Wilk's test confirmed ($p < .05$), we can therefore reject the null hypothesis that the population is normally distributed.

7. An investigation into the mediating effect of positive and negative coping in the relationship between resilience and beliefs and practices was conducted.

A Spearman's Rho correlation was conducted between the total score for resilience and the total score for the beliefs and practices. The mean score for Resilience was 71.20 (SD = 13.29) for beliefs and practices was 23.02 (SD = 4.56). A correlation using Spearman's Rho correlation coefficient found that there was a strong positive significant relationship between Resilience and beliefs and practices ($r_s(116) = 0.385, p < .01$). Therefore the null hypothesis is rejected. 14.82% of the variance in resilience can be attributed to a beliefs and practices.

A Spearman's Rho partial correlation was then conducted between the total score for resilience and the total score for the beliefs and practices while controlling for positive and negative coping. The mean score for positive coping was 20.16 (SD = 4.75) and for negative coping was 9.82 (SD = 3.55). A partial correlation using Spearman's Rho correlation coefficient found that there was no significant relationship between Resilience and beliefs and practices ($r_s(116) = 0.594, p = .214$) when controlling for positive and negative coping.

A Spearman's Rho partial correlation was then conducted between the total score for resilience and the total score for the beliefs and practices while controlling for positive coping alone. A partial correlation using Spearman's Rho correlation coefficient found that there was no significant relationship between Resilience and beliefs and practices ($r_s(116) = 0.582, p = .171$) when controlling for positive coping.

A Spearman's Rho partial correlation was then conducted between the total score for resilience and the total score for the beliefs and practices while controlling for negative coping alone. A partial correlation using Spearman's Rho correlation coefficient found that there was a strong positive significant relationship between Resilience and beliefs and practices ($r_s(116) = 0.868, p < .011$) when controlling for negative coping. Therefore the null hypothesis is rejected. 75.34% of the variance in resilience can be attributed to a beliefs and practices.

An investigation into the mediating effect of collaborative and deferral problem solving styles in the relationship between resilience and beliefs and practices was conducted.

A Spearman's Rho partial correlation was then conducted between the total score for resilience and the total score for the beliefs and practices while controlling for collaborative and deferral problem solving styles. The mean score for collaborative was 19.31 (SD = 6.97) and for deferral was 15.9 (SD = 6.07). A partial correlation using Spearman's Rho correlation coefficient found that there was no significant relationship between Resilience and beliefs and practices ($r_s(116) = 0.626, p = .097$) when controlling for collaborative and deferral problem solving styles.

A Spearman's Rho partial correlation was then conducted between the total score for resilience and the total score for the beliefs and practices while controlling for collaborative style alone. A partial correlation using Spearman's Rho correlation coefficient found that there was no significant relationship between Resilience and beliefs and practices. ($r_s(116) = 0.632, p = .068$) when controlling for collaborative problem solving style.

A Spearman's Rho partial correlation was then conducted between the total score for resilience and the total score for the beliefs and practices while controlling for deferral style alone. A partial correlation using Spearman's Rho correlation coefficient found that there was a strong positive significant relationship between Resilience and beliefs and practices. ($r_s(116) = 0.775, p = .014$) when controlling for deferral problem solving style. Therefore the null hypothesis is rejected. 60.06% of the variance in resilience can be attributed to a beliefs and practices.

Discussion

The overall aim of this study was to examine the coping mechanisms and problem solving styles employed by individuals who are religious to see how they were related to resiliency. It was also to ascertain whether these variables were good predictors of resiliency and whether there was any mediation in the relationship between resiliency and beliefs and practices.

The first hypothesis predicted that a self directed religious problem solving style would be positively related to resiliency. To test this Spearman's Rho correlation was conducted which showed that there was no significant relationship between the two. It was unexpected that an individual adopting a self directed style would not relate positively to resiliency. According to Rutter, (1985) an individual's resiliency is characterised by their ability to distance themselves emotionally from adversity, having high self confidence and self esteem with a belief in their own self efficacy. These qualities would suggest a good inner sense of locus of control Garmezy (as cited in Fine, 1991) a quality that is specified by K. I. Pargament et al., (1988) as being an inherent characteristic of the self directed problem solving style. It was therefore expected to see a significant relationship between resiliency and a self directed problem solving style. The sample used for this study was predominantly Catholic and committed to their religious practice and also extra activities connected with the church or religious groups, outside normal religious timetables. Is it possible with that level of commitment that they would never be inclined see a situation that didn't involve God on some level? That said scores related to a self directed problem solving style were the lowest of the three styles but only by a small amount (26%).

Another aspect to this is the changing nature of problem solving styles in general, depending on whether the individual concerned is in a crisis situation presently or whether they are recovering from one. According to crisis theory by Caplan (as cited in (Halpern, 1973) and as demonstrated in research by (Yelsma & Montambo, 1990) problem solving styles shift in a crisis, away from habitual responses towards more novel approaches which would be comparable to shifting to a self directed problem solving style away from a collaborative and deferral type styles.

Although unverified by this current study, it was likely given the demographic results that they were not a sample in crisis. Over 60% of the sample was between the ages of 50 and 75, 36% were retired, 64 % married and 47% with 3 or more children which would indicate that the stressful times of early parenthood were probably passed and that they now are part of a broad family network. Given that a self-directed problem solving style had the lowest adoption rate of the three styles and also that the ages between 50 and 65 showed the lowest scores for those seek social support, this may indicate the stress levels were at a healthy level at this time. Also the samples level of religious commitment would suggest that they would be unlikely to exclude God by default, so the habitual response as described by Caplan (as cited in (Halpern, 1973) and (Yelsma & Montambo, 1990) is likely not to be a self directed problem solving style and more centred towards a collaborative and deferral style.

Having at least one close relationship is one of the hallmarks of a resilient individual Rutter (1985) and given the samples predominance of a married, two parent three child family type, higher resilience scores may be more attributable to engagement in a family network than a self directed problem solving style. Resilience scores for females (70% of the sample) were consistent across the age groups and over all higher than for males. Resilience scores for males seemed to decline with age, indicative maybe of an

abandonment of Richardson's process of resilience model. In further study it may be worth examining if the decline in resilience for males as they get older is related to low risk behaviour. By opting out of the process of disruption and reintegration the level of risk taking behaviours may also decrease. The consequence of this may be less developmental growth and therefore reduced resilience levels. (Richardson, 2002)

The second hypothesis predicted that a positive coping style would be positively related to resilience. A Spearman's Rho correlation showed a moderate positive significant relationship between Resilience and positive coping as expected. Positive religious coping is concerned with spiritual growth and a secure relationship with God (K. I. Pargament et al., 1998). It has been related to positive effect, psychological adjustment to stress, high self esteem, stress related growth and spiritual growth (Ano & Vasconcelles, 2005; Bjorck & Thurman, 2007; K. Pargament et al., 2011; K. I. Pargament et al., 1988). It's unsurprising therefore to see a positive relationship with resilience and positive religious given the common ground both measures cover in terms of positive outcomes (Campbell-Sills et al., 2006; Kobasa, 1979; Koenig et al., 2001).

The religious positive coping style is a measure of "*a sense of spirituality, a secure relationship with God, a belief that there's meaning to be found in life, a sense of spiritual connection with others*" (K. I. Pargament et al., 1998). By comparing these concepts with some of the characteristic traits of resilience "*Faith ... Close secure attachment to others ... Optimism ... Engaging the support of others ... Self efficacy*" Rutter, Lyons and Shackleton (as cited in Connor & Davidson, 2003) we see how they might be significantly related.

Other research by (Campbell-Sills & Stein, 2007) also found a significant relationship between coping and resilience. Although the coping described is task orientated coping, the scale used to measure resilience is the same as the one used in this study. But, this doesn't validate the argument that resilience can also be achieved by spiritual means alone because task orientated coping is different to religious coping. In a study by (Kariv & Heiman, 2005) it was determined that task orientated coping acts independently of emotion orientated coping and that both were sensitive to individual stress perception and demographic. Emotion orientated coping attempts to control the emotional reaction to the stressor and reframes the way the stressor is perceived so as to alleviate the stress (Mattlin, Wethington, & Kessler, 1990) which is more akin to religious coping .

It follows therefore that this study has shown a relationship between an alternate form of emotion orientated coping and resilience. This form asks a presence outside of the self to help manage the emotional reaction and give meaning to the adversity. There is a level of abstraction from the stressor implied in this process. The ability to abstract or step back from the stressor and find meaning is an important component of resilience (Fine, 1991).The importance of meaning is well documented but at its simplest it can be represented as an equation, "*Despair = Suffering – Meaning*" (Conley, 2012).The concept of this is that suffering can be taken as a constant in everyone's life relative of course to the individual ,it is the level of meaning that determines the level of despair (Conley, 2012).

The third hypothesis predicted that resilience will be positively related to a collaborative problem solving style. As predicted a Spearman's Rho correlation showed a moderate positive significant relationship between Resilience and collaborative problem solving style. This also was expected given the similar content expressed in both the positive coping and collaboration problem solving styles. The main difference with the problem solving scale is that is a task oriented style of coping rather than an emotion orientated coping style. A task orientated style is one based on direct action to control the source of the stress rather than the emotional reaction to it (Kariv & Heiman, 2005) .

K. I. Pargament et al., (1988) outlines three distinct styles which mirror different approaches to problem solving .The collaborative style is "*associated with a more involving religion, one which relies less on God to meet personal needs*" (K. I. Pargament et al., 1988).To verify this association the total score for collaborative style was plotted alongside the other styles ,self directed and deferral. The collaborative style represented 42% of the total score available for the three styles. This validates the assumption of it being suited to a more involved religion due to high level of religious commitment exhibited by the sample.

It's significance with resilience may be explained by the inherent design of the resilience scale itself. According to (Connor & Davidson, 2003) the core interest in developing the scale was to investigate how levels of resilience are affected by anxiety in patients with post traumatic stress disorder. They noticed changes in the level of resilience to be directly associated with anxiety levels in placebo and non placebo tests. The task orientated positive coping of the collaborative style would suggest that it could have a similar effect on anxiety levels. Research by (Ano & Vasconcelles, 2005) has shown stress and anxiety levels are significantly reduced in relation to positive religious coping. Further work by (Clements & Ermakova, 2012) has demonstrated that surrendering to the will of

God had an inverse effect on stress levels. While “*Surrender to God*” was not assessed as part of this study it is seen as an extension of religious coping and would indicate some level of abstraction from the source of stress. The collaborative problem solving style does not completely share the locus of control over to God, but he is implicated in the decision making. A realistic sense of control is defined by (Rutter, 1985) as one of the trait characteristics of resilience, but locus of control was found not to be related to controlling images of God (Benson & Spilka, 1973). This would imply that the collaboration scale is accurately reflecting a shared task oriented approach to problem solving which is more to do with the resilience characteristic of “*action orientated approach*” (Rutter, 1985) rather than control.

The fourth hypothesis was that resilience will be negatively related to deferral problem solving style. Spearman’s Rho correlation was conducted between the total score for resilience and the deferral style. There was no significant relationship found which was not as expected. On review of the literature it was probably very evident that this would be the case rather than a negative relation. There’s very little in the listed characteristics for resilience that would suggest that typical resilient behaviour would be to hand over solutions completely to another source. As (Richardson, 2002) points out the process of resilience is more to do with developing and growth which involves a personal journey past the disruption while adapting and learning new skills along the way. There’s nothing in the deferral style that indicates a process similar to that. The deferral problem solving style is characterised by the person not being a part of the solution. (K. I. Pargament et al., 1988).

The fifth hypothesis is that resilience will be negatively related to a negative coping style. As predicted a Spearman's Rho correlation coefficient found that there was a moderate negative significant relationship between resilience and negative coping. Given that there was such a strong relation to the positive coping style, this can be easily explained. As discussed previously for the hypothesis relating to a positive coping style and resilience (Bjorck & Thurman, 2007; K. I. Pargament et al., 1988) outlined the mechanism of religious coping to be a dynamic scale that measures a pattern of coping at a particular time. Given that the sample responded to the questionnaires as a whole and not in part over a long period of time, it would be expected that the pattern of positive and negative coping would report opposite results. This concurs with the properties of the scale design as set out by (K. Pargament et al., 2011; K. I. Pargament et al., 1998)

The fifth aim was to investigate if positive religious coping, collaborative and deferral problem solving styles acted as mediators between religiosity and resilience. A Spearman's Rho partial correlation was conducted between resilience and beliefs and practices and it confirmed the expectation that positive coping and collaborative problem solving mediate the relationship between resilience and religiosity. The meditative affect of positive coping has added to our understanding of what aids recovery from stress, mental illness (Ano & Vasconcelles, 2005; Ong, Bergeman, Bisconti, & Wallace, 2006; Tugade & Fredrickson, 2004). The result now contributes to our understanding in a religious context specifically. With both positive coping and collaborative problem solving now related to resiliency it can be said that both emotion orientated coping and task orientate coping strategies can be linked to resiliency within a religious context.

Limitations and future directions.

This study was constrained by sample size and slightly biased in terms of religious denomination and nationality. Although it could be said that style of faith was not the variable being measured there are cultural influences that would need to be accounted for if this was to be replicable in other countries. Better cross section may have normalised the distribution of data which could have added better predictive capability in determining resilience. It was considered to include a nonreligious control group an attempt to isolate for religious effect but it's hard to say whether or not somebody is unconsciously influenced by the religious culture that as been engrained into our DNA through education and social networks.

What isn't fully known from this study is how the samples level of resilience might change in a crisis situation. A longitudinal design may have added weight to the predictability of resilience especially if the data was normally distributed. Also the argument for trait resilience is still valid in this study as there was nothing that could measure for a genetic or biological disposition for resilience, regardless of religious coping mechanisms. It would be useful to explore a sample of non religious participants who qualify as being genetically disposed for low level resilience. A longitudinal study that engaged them in religious practice and culture could be conducted to see if there was any change at a cellular level after exposure to a religious lifestyle.

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Appendix A

Appendix B

Appendix C

Appendix D