Do Spirituality and Religiousness Matter? Exploring the Effects of Religiousness and Spirituality on Traumatic Stress Symptoms

By

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Declaration

I declare that this research project is my own, unaided work. It is being submitted for the degree of Master of Arts (Research Psychology) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination at any other university.

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Abstract

South Africa has a very high trauma exposure rate with reported lifetime estimates as high as 94%. Estimates of posttraumatic distress in this population have been as high as 26%, suggesting that a large portion of the population may be at risk for PTSD. Research suggests that certain factors, such as cognitive styles or beliefs, may buffer the effects of trauma and reduce the risk of developing PTSD. Literature has explored religiousness and spirituality but has yielded mixed findings. The present study aimed to explore whether or not religiousness and spirituality independently function as moderators of posttraumatic stress symptoms (PTSS) in the South African population. A secondary aim was to explore the nature of the relation between spirituality and religiousness as some proponents have conceptualised them as synonymous, while others assert that they are different constructs. Results suggested that while religiousness was not a moderator of PTSS in the present sample, spirituality was a significant moderator. In addition, correlation analyses suggested that religiousness and spirituality may be two distinct constructs and perhaps should not be operationalised as synonymous. Implications of the findings and directions for future research are discussed.

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Chapter 1: Literature Review

1.1 Introduction

The experience of a traumatic event can be debilitating leaving some unable to cope and function in daily life. Traumatic events and experiences impact on the psychological, emotional and physical well being of those who are exposed to them. Trauma is a multifaceted phenomenon and its experience cannot be avoided (Vis & Brownlee, 2008). Many South Africans experience traumatic events due to the high rates of crime and violence that occur in the country. As such, there is a particular interest in researching traumatic exposures as potential risk factors for distress and later illness. Approximately 90% of a sample of 198 in a study by Seedat, le Roux and Stein (2003) reported having experienced or witnessed trauma in their lifetime, with a further 26% going on to meet diagnostic criteria for Posttraumatic Stress Disorder (PTSD). As such, trauma is highlighted as prevalent in South Africa. This is further demonstrated by Carey, Stein, Zungu-Dirwayi and Seedat (2003) who reported that 94% of their sample reported exposure to a traumatic event.

Despite the high prevalence rate of trauma and levels of traumatisation, many individuals seem to overcome such distress and even find that traumatic events provide hope, strength and positive circumstances (Vis & Brownlee, 2008). This suggests that certain factors serve to moderate the effects of trauma. Thus, it is important to investigate why

this is the case by researching factors that serve to buffer the experience of trauma and the development of symptoms of distress in the aftermath of the event. Research indicates that spirituality and religiousness, which are important aspects of life for many, may potentially be such moderators, therefore playing a significant role in overcoming trauma (Bryant, Choi, & Yasuno, 2003; Cornah, 2006; Green, Gardner & Kippen, 2009; Moreira-Almeida, Neto & Koenig, 2006). High levels of trauma have been reported in South Africa, however with research suggesting that certain buffers act to moderate the effects of trauma it becomes important to investigate these claims. The moderating effects of religiousness and spirituality are a poorly understood area in the South African context. Observing and studying such effects could shift the focus on negative experiences and symptoms to factors that serve to buffer the effects of trauma and posttraumatic distress, thereby helping people to deal with trauma and allow them to move beyond the negative. The purpose of the current research therefore, was to explore the effects of religiousness and spirituality on levels of reported traumatisation in a South African context.

1.2 Trauma

The notion of trauma is constant throughout the various literatures pertaining to exposure to events that produced significant stress reactions. During the 19th century, trauma referred to "an open wound or violent rupture to the surface of the skin; it carried no psychological connotations" (Jones & Wessely, 2007, p.165). Psychological trauma

refers to a life event that triggers a strong emotional shock and this emotion preserves the experience of the shock as it is "an affective reaction that always reoccurs in the same way and is chronic" (Heim & Buhler, 2006, p.111). Traumatic events came to be known to include rape, torture, assault, military combat, natural disasters, incarceration in a death camp, industrial or vehicular accidents or exposure to war, domestic or civil violence (American Psychiatric Association [APA] [DSM-III], 1980).

What we have come to know as traumatic events has not changed much, however, our understanding of trauma has changed substantially. The way we define, think about and give meaning to trauma has been refined throughout history. These redefinitions have been particular to the prevalence and psychological impact of traumatic or catastrophic events. Catastrophic events are not rare and many individuals will be exposed to at least one catastrophic event in their lifetime, with exposure prevalence rates being higher in violent or war torn countries (Friedman, 2003). Unlike the concept of trauma in the past where it was defined just by an external event, it is now recognised that this concept refers to processes within the individual due to external traumatic events (APA [DSM-IV-TR], 2000). It was noticed that not all people exposed to catastrophic events developed disorders. The view of trauma as rare and external, as defined in the DSM-III, has become one in which emphasis is also placed on the individual's psychological response to an overwhelming event, as defined in the DSM-IV-TR (American Psychiatric Association [DSM-IV-TR], 2000; Friedman, 2003). Exposure to a catastrophic event is thus necessary but is insufficient by itself to 'traumatise'.

Traumatisation is a term used in a clinical sense to describe individuals who are exposed to situations that are exceptionally threatening and whose experiences are outside of normal human experiences (Dorn & Novoa, 2004). As it is now realised, a critical component is the individual's emotional response as various psychological factors mediate or moderate the effects of traumatic events. Related to this point is that it is not just what happens to an individual that is significant, but also the meaning it has for the individual in relation to who they are, how they live and their expectations for the future (Joseph, Williams & Yule, 1997). A traumatic event is thus the experience of an event that is perceived as threatening, whereas traumatisation refers to the subjective feelings that arise from the experience of the event (Joseph, Williams & Yule, 1997). Individuals may adjust to feelings of traumatisation due to an available repertoire of coping resources. However, the magnitude of the traumatic event may impair the individual's ability to cope and function in daily life (APA [DSM-IV-TR], 2000). Intense cognitive and behavioural responses as well as physical symptoms, such as flashbacks and avoidance behaviour, may be produced by feelings of extreme distress and traumatisation (APA [DSM-IV], 1994; APA [DSM-IV-TR], 2000) and this may lead to PTSD.

1.3 Posttraumatic Stress Disorder

Traumatisation may lead to impaired functioning due to the occurrence of a number of symptoms including flashbacks, insomnia and avoidance symptoms, to name a few. If these are persistent and debilitating one may be at risk of developing PTSD. This is an

emotional and complex disorder under the rubric of anxiety disorders in which responses to trauma are severe, incapacitating and interrupts normal functioning (Friedman, 2003; South African Institute for Traumatic Stress, 2000; American APA [DSM-IV], 1994). It is defined as the experience of a traumatic event in which one feels fear, helplessness, or horror and consequently victims re-experience the event through memories and nightmares (APA [DSM-IV-TR], 2000). Prominent features of PTSD include avoidant behaviour and difficulty sleeping due to recurring dreams of the event. In the aftermath of extreme trauma, victims often feel overwhelmed affecting their ability to cope with daily life (APA [DSM-IV-TR], 2000). PTSD has been conceptualised as a disorder involving multidimensional stress responses. These include affective components, disruption in coping and alterations in memory and cognitions stemming from the experience and interpretation of traumatic events (Mueser et al., 2007). Common to individuals with PTSD is a restriction of emotional responsiveness and a disruption in interpersonal relationships (Friedman, 2003). PTSD is also defined by a number of prominent features and symptoms, including the requirement that individuals must be traumatised by a catastrophic stressor, as well as present with a range of key symptoms.

The disorder is characterised by the requirement that individuals must be traumatised by a catastrophic stressor, as well as present with a range of key symptoms (APA [DSM-IV-TR], 2000; Friedman, 2003). PTSD symptoms are classified under three clusters, namely Re-experiencing symptoms, Avoidant symptoms and Hyperarousal symptoms (APA [DSM-IV-TR], 2000).

The psychological re-experiencing of symptoms is unique to PTSD and reflects the persistence of thoughts, feelings and behaviour specifically related to the traumatic event (Friedman, 2003). Recollections of the event and traumatic nightmares are described as intrusive symptoms because they are unwanted and powerful, and as such impair the ability to consider anything else (APA [DSM-IV-TR], 2000; Friedman, 2003). Recollections and nightmares often induce panic, fear or terror among individuals with PTSD and stimuli related to the trauma can precipitate flashbacks. This symptom is an intense psychological, emotional and, at times physiological state, where the individual relives the traumatic experience and will subsequently behave and act, as they would have at that time (Friedman, 2003).

The avoidant cluster of symptoms, also referred to as numbing symptoms, consist of behavioural, cognitive, or emotional techniques used to deflect fear and distress by using strategies that include: efforts to avoid thoughts, feelings, activities, places and people related to the trauma (APA [DSM-IV-TR], 2000). Psychogenic amnesia is a symptom whereby the individual psychologically numbs themselves from the fear and panic produced by trauma related memories (Friedman, 2003). However, feelings of love are also numbed with this process and individuals become detached with a restricted range of affect.

The hyperarousal symptom cluster is the most apparent expression of excessive physiological arousal in PTSD. Symptoms here include insomnia, irritability, startled reactions, and hypervigilance (McFarlane, 2003). Due to the nature of these symptoms,

an associated symptom is poor concentration and performance difficulty. These symptoms most closely resemble symptoms seen in Panic Disorder and Generalised Anxiety Disorder, and thus one reason why PTSD is classified as an Anxiety Disorder (Friedman, 2003). The suffering and stress symptoms associated with PTSD reiterate the importance of exploring factors that may serve to aid in dealing with trauma in its aftermath.

1.4 Trauma and Posttraumatic Stress Disorder

Research suggests that a significant relationship exists between trauma exposure, PTSD and impaired functioning (Schorr, 2005). As such, trauma exposure and PTSD are seen as risk factors for the development of later illness and psychological disorders (Schorr, 2005). The suffering associated with PTSD extends beyond symptomology to areas of functional and social morbidity, concluding that the risk of impaired functioning and diminished quality of life is attributable to PTSD alone (Zatzick et al., 1997 as cited in Schorr, 2005). The DSM-IV-TR reports that PTSD symptoms are associated with impairment in physical, psychological, social and financial domains in functioning (APA [DSM-IV-TR], 2000). Individuals with lifetime PTSD are likely to meet criteria for at least one other psychiatric disorder. Coexisting disorders with PTSD include: Major Depressive Disorder, Dysthymia, Generalised Anxiety Disorder, phobias, panic disorder, alcohol and/or drug abuse/dependency and conduct disorder (Galea, Nandi & Vlahov, 2005).

In South Africa it is estimated that 70% of adults have experienced a traumatic event at least once in their lives, with 20% of these individuals going on to develop PTSD (South African Institute for Traumatic Stress, 2000). Statistics reflecting the burden of disease in terms of trauma and PTSD demonstrate that up to six million South Africans suffer from PTSD, 330 000 of whom have been directly affected by violent crime (Allers, 2008). There is also a significant number of South Africans who are under diagnosed. Even though PTSD is one of the most common anxiety disorders in the general population, approximately half of PTSD sufferers do not get diagnosed (Allers, 2008). This has serious implications for the country as a whole as this interferes not only with individual functioning but the operation of the work force at large. It also has implications for financial, social, familial and interpersonal functioning (Allers, 2003). Recent studies in South Africa showed that 40% of patients who were never diagnosed with PTSD met diagnostic criteria for diagnosis and that 58% of 2040 children surveyed had witnessed trauma with 22% meeting full symptom criteria for PTSD (Allers, 2003).

1.5 Posttraumatic Stress Symptoms

Much of the research on trauma and PTSD has focussed on its negative effects, characteristics, features and symptomology as highlighted by the DSM-IV-TR which emphasises symptoms and distress (APA, [DSM-IV-TR], 2000). While this is important for diagnosis and specific intervention, not all individuals are significantly distressed or impaired functionally. Many individuals do not develop PTSD after trauma exposure,

however, they may experience posttraumatic stress symptoms (PTSS). It is possible to feel traumatised and experience stress symptoms without it being so severe that a diagnosis is required due to the fact that experiencing PTSS can be a normal response to trauma. Despite the occurrence of PTSS, many overcome their feelings of traumatisation and lead a healthy functional life in its aftermath. In light of the focus on symptomology, of the experience of a traumatic event and of PTSS as a risk factor for PTSD as well as a potential mental and physical illness, it is important to consider factors that buffer against the effects of traumatisation and PTSS.

1.6 Moderators of Posttraumatic Stress Symptoms

There is little dispute that a traumatic event and traumatisation can cause considerable distress and impairment. It has also been noted that South Africans experience high levels of trauma and traumatisation. However, there are a number of individuals who survive such events and go on to lead a fulfilling and high quality of life. It is important therefore, to discover factors that can be influenced or enhanced to reduce the impact of the debilitating effects of PTSD. Research indicates that such factors include coping mechanisms and social support (Compton, 2005; Ross & Deverell, 2004).

Coping resources and strategies refers to what is available to help assist individuals deal with stress symptoms as well as to the actual mechanisms and responses that individuals make in reaction to a stressful situation (Ross & Deverell, 2004). Effective coping

reduces the burden and stresses of short-term challenges, such as trauma, and contributes to long-term stress relief (Compton, 2005). Coping resources include strategies of having positive emotions and optimism. Positive emotions have been implicated in high-quality health status and longevity, compared to negative emotions which had less of an impact in a study conducted on emotions (Danner, Snowdown &Friesen, 2001 as cited in Compton). Seligman's theory of learned optimism suggests that by focussing on the positive and on what is possible, individuals can learn to respond to stressors with an attitude of optimism and hope, thus reducing stress symptoms (Compton, 2005). It is also suggested that cognitive appraisal has implications for how one deals with a situation. Problem focussed coping strategies is also a technique used for positive coping as it allows one to find solutions for dealing with particular situations (Schorr, 2005).

Some coping resources include the use of social support. This involves finding solutions to one's problems by seeking support from friends, family, significant others, or from those who have important meaning in one's life. The love, compassion, empathy and care that is received from loved ones, moderates the negative impact a traumatic event can generate. Studies have found that individuals with high levels of perceived social support were able to cope with difficulties and challenges much better than those with low levels of perceived support (Cheng & Chan, 2004), highlighting the moderating effects of social support.

Research has increasingly focussed on the contribution and influence of spirituality and religiousness as factors that contribute to increased mental health and well being (Bryant,

et al., 2003; Cornah, 2006; Green et al., 2009; Moreira-Almeida et al, 2006). More recently however, there has been a move to looking at processes involving religiousness and spirituality. The religious and spiritual impact of trauma has been an area of particular interest, especially with regard to its moderating effects. The buffering effects of religiousness and spirituality is therefore an area that warrants further research and thus will be looked at in more detail in the study.

1.7 Religiousness and Spirituality

Religious and spiritual beliefs play a significant role in human behaviour and functioning as they provide cognitive maps of the world, allowing it to have meaning. They also give individuals a purpose to life and connect them through a system of shared values and norms (Saucier & Skrzypinska, 2006). A range of disciplines have started to explore and acknowledge the positive roles that religiousness and spirituality have in mental health and an array of evidence exists to support this claim (Cornah, 2006; Sigmund, 2003). Despite this, these constructs have been debated in terms of their definitions, classifications and their meanings.

Within the vast array of literature, Koenig, McCullough and Larson (2001) state that religion is designed to facilitate closeness to the sacred or transcendent (a higher power) through beliefs, rituals, practices and symbols, whereas spirituality involves a personal quest for understanding questions about life, meaning, and relationships with the sacred

that may or may not arise from the practice of physical religious rituals. Both constructs involve a searching for a pathway that will lead to an outcome. Religiousness involves an active search for significance that relates to the sacred through symbols and physical rituals and practices, while spirituality is seen as a search for the sacred itself and as such is the heart and soul of religion (Pargament, 1997).

Definitions of spirituality usually emphasise the individual and their subjective experience and has been the focus of much research. It is the outward expression of inner workings of the individual and can be intrapersonal when searching for inner connectivity, interpersonal when it involves the relationships between people and transpersonal in that it can reach beyond the self into transcendent realms of experience (Swinton, 2001). Spirituality is not confined to formal devotional practices, institutional places of worship or traditions while religiousness is more often associated with these. Although these constructs are distinct, religiousness is perceived in relation to spirituality, which differs amongst individuals. It is described that religion may be spiritual at the core but spirituality can be independent of religion leading individuals to describe themselves as spiritual but not religious (Bryant et al., 2003).

Literature on religion and religiousness highlight two pertinent concepts, namely, the notions of intrinsic and extrinsic orientations toward religion (Allport & Ross, 1967; Maltby, 2002). When religion is viewed as deeply personal this constitutes an intrinsic orientation toward religion, in contrast, an extrinsic orientation toward religion

emphasises the protection, consolation, social status and group participation that religion allows (Maltby, 2002).

Although the definitions of these terms have been disputed over the years, there is a common thread that runs through them, and that is that they both have been linked to the search for a sacred or transcendent which includes concepts of a God, a higher power or the divine (Hyman & Handal, 2006). Even though this may be the case, it is important to note from the outset that they are qualitatively different from one another and that they will be operationalised separately (Hyman & Handal, 2006; Koenig et al., 2001).

Religiousness for the purpose of the current study referred to "a shared system of beliefs, principles or doctrines related to a belief in and worship of a supernatural power or powers regarded as creator(s) and governor(s) of the universe" (Love, 2001, p.8). Spirituality on the other hand, referred to the human response to the gracious call of a higher power, to a relationship with himself or herself (Argyle & Beit-Hallahmi, 1975). Religiousness thus represents a more tangible and material form of devotion to a higher being, while spirituality symbolises a more intangible form of devotion as well as personal beliefs and relationship to ones self and to a higher power (Argyle & Beit-Hallahmi, 1975; Love, 2001).

1.8 Religiousness and Spirituality in Relation to Mental Health and Physical Well being

An increased interest in the effects of religiousness and spirituality on health and well being is apparent within psychological and medical literature. An increasing number of studies have found positive associations between religiousness/spirituality and mental and physical health, such as increased levels of coping mechanisms in chronic and terminally ill patients who had higher levels of spirituality/religiousness (Bussing, Fischer, Ostermann & Matthiessen, 2008; Fontana & Rosenheck, 2004; Seybold & Hill, 2001). Religiousness and spirituality have often been perceived as sources of comfort, meaning, and purpose for those who have experienced trauma. However, there is the opinion that exposure to trauma can lead to changes in the strength of one's religiousness or spirituality, consequently leading one to abandon his or her faith (Fontana & Rosenheck, 2004).

Despite the various opinions regarding their definitions, relation to one another, and effects on mental and physical health, religiousness and spirituality have been largely identified as positive contributions to mental and physical health and well being. It has been found that they may reduce the risk of a number of stressors by providing a sense of meaning that counteracts stress, by providing a network of people with shared beliefs who can serve as social support and thus fostering the development of social capital (Ellison, 1994).

In terms of physical health and well being, research has shown that in an 8-year study of a National survey, regular attendance at religious services was associated with an additional 8-year life expectancy and another reported older patients having heart surgery were three times more likely to survive if they found a sense of strength and comfort from their religious beliefs (Idler et al., 2001). A study involving spirituality and terminally ill cancer patients found that patients searched more for meaning, had a positive interpretation of the disease and in addition some patients had higher life satisfaction scores that patients who did not associate themselves with spirituality (Bussing et al., 2008). Thus, patients who perceived themselves as more spiritual or connected to a higher being were found to be happier with life in general compared to those patients who did not feel as highly spiritual.

With regard to mental health, a study conducted by Humphreys (2000, as cited in Sigmund, 2003) found that the psychological effects of domestic violence seemed to be buffered by spiritual beliefs and practices as women who scored higher on the spirituality scale had fewer repeated unpleasant thoughts and outbursts of temper. In addition, Seybold and Hill (2001) found that when they reviewed certain literature, common findings suggested that religiousness and spirituality reduced overall stress and depression associated with challenging life events.

1.9 Religiousness and Social Support

Research has shown that individuals involved in religious practices or activities, enjoy increased social support that has been increasingly recognised as playing an important role in mental and physical health and well being (Jones, 2004). The involvement in religious activities offers communities and individuals a means for social networking and support by providing opportunities for ritualistic activities, values, beliefs and traditions to be experienced and shared in a social setting. Religious group memberships make available social ties which have been shown to reduce mortality (Idler et al., 2001). Support offered is widespread and includes emotional support and instrumental support. The first refers to notions of being sympathetic while the latter refers to tangible forms of support, such as financial assistance (Idler et al., 2001). It therefore seems plausible that those who are religious will have high levels of perceived support due to a large repertoire of coping resources in the form of social networks. Social support can thus function as a mediator in certain settings. In other words, individuals dealing with PTSS may benefit or cope with their trauma through the support they receive from social networks and not from their level of religiousness or religious activities.

The issue of social support as a mediator between religiousness and trauma on posttraumatic stress symptoms is more complicated than a simple statement. The effects of religiousness on trauma and stress symptoms may be dependant on the individual's level of religiousness and the extent to which he or she is involved in religious rituals and practices (Jones, 2004). Negative or conflicted relationships between the individual and

members in social networks or religious institutions have been associated with worse health outcomes, with research failing to find a mediating role for social support (Jones, 2004). Religiousness can be established as a constructive contributor to positive health outcomes through well established channels, such as social support, without necessarily being reduced to them, and its association with such channels does not mean that it is epidemiologically insignificant, thereby suggesting that religiousness can still be a significant factor in coping with trauma (Jones, 2004). This is an area that has not been extensively researched and thus the mediating effects of social support will be examined in the study.

1.10 The Current Study

1.10.1 Rationale

In South Africa there is a paucity of literature that exists on religiousness and spirituality and its effects on dealing with trauma. It is important that we explore this area and create an empirical and evidential database if religiousness and spirituality are indeed factors that may account for lower levels of PTSS and PTSD. Limited studies have reported that religiousness and spirituality are usually beneficial to individuals dealing with the aftermath of trauma, that religiousness and spirituality can be deepened by traumatic events and that positive religious coping, religious openness, religious participation and

readiness to face existential questions are associated with post traumatic recovery (Cornah, 2006).

This study independently investigated the buffering effects of religiousness and spirituality on trauma and PTSS. Religiousness and spirituality are thus moderators in this study. A moderator is a third variable that influences the relationship between two other variables, it can strengthen and/or change the direction of such a relationship (Baron & Kenny, 1986). As a result, it has an effect but is not the main effect and in the absence of the moderator the relationship between the other two variables will still exist. In addition, the study will also investigate the relationship between religiousness and spirituality due to the debate that exists regarding it. Social support will also be accounted for as it may function as a mediator in this study.

1.10.2 Research Aims

The primary aim of the study was to explore whether religiousness and spirituality moderates the relationship between experiencing a traumatic event and whether or not an individual will report traumatisation. It also investigated whether or not religiousness is mediated by social support since social support is a high predictor of coping with trauma. This would allow us to ascertain and explain whether it is in fact religiousness that has a significant effect in the relationship and not social support. The debate within literature with regard to the relation, meaning and definitions between religiousness and spirituality

warrants the secondary aim of the study. That is, to empirically tease out the relation between these religiousness and spirituality.

1.11 Research Hypotheses

1) The relation between trauma and PTSS will be moderated by religiousness

2) The relation between trauma and PTSS will be moderated by spirituality

3) There will be a significant relationship between religiousness and spirituality

4) Religiousness will be mediated by Social Support

Chapter 2: Methods

2.1. Research Design

The design of the study was non experimental due to the fact that there was no randomisation, no manipulation of any variables and no control group (Rosenthal & Rosnow, 1991). The researcher had no way of influencing the independent variables and thus they were measured as pre existing. There was no treatment associated with the research, as such there were no control groups in the study as the researcher did not manipulate any independent variable as the study only sought to draw comparisons between participants.

Furthermore, the study was quantitative, exploratory, correlational and cross-sectional. Since the study did not have random assignment, no manipulation of the variables and no control group, it did not meet the criteria needed to establish a causal relationship (Rosenthal & Rosnow, 2005).

2.2 Research Procedure

The study was aimed at investigating perceived levels of religiousness and spirituality and how these relate to reported levels of traumatisation and social support. A convenient purposive sampling technique was used for reasons of feasibility in terms of access to a sample, a large sample size and cost efficiency. The researcher and participants in the study were all from the University of the Witwatersrand, thus no cost was associated with transport and time incurred to gain access to the sample.

Permission to administer questionnaires to the sample was obtained from the Head of School, course coordinators, and the relevant lecturers from the economics department. Following this, authorisation was obtained from the second and third year lecturers, to approach students at the commencement of their classes. Two classes were approached, in each instance on different days and at different times. The lecturer introduced the researcher and then left the room, returning only after the researcher had explained the study and distributed the questionnaires. After the researcher introduced herself and explained the reason for the study as well as its focus, students were then invited to participate in the study. They were informed that their participation was voluntary, confidential and not advantageous or disadvantageous in any way. The questionnaire packs were then distributed to students who were willing to participate. Participants were instructed on how to fill out the questionnaires and they were told that their participation in the study would be taken as their consent. Participants were told to read through the

information letter and to detach and retain it as it contained important information. The participants were thanked for their participation and time.

Upon completion of the questionnaires, the researcher single-handedly collected all the questionnaires to ensure confidentiality. All questionnaires were handled by the researcher only and stored in a secure environment.

2.3 Participants

The sample consisted of 151 participants between the ages 19 - 27 with a mean age of 21.03 (*SD* = 5.65). The sample comprised of 51.6% males (*n* = 78) and 48.34% (*n* = 73) females, all of whom ranged from their first to fourth year of study, with the majority of participants in third year (54.97%, *n* = 83) followed by second year (41.72%, *n* = 63). Of the total sample, the ethnic categories consisted of 57.62% (*n* = 87) black participants, 23.84% (*n* = 36) white participants, 12.58% (*n* = 19) Indian participants, 3.31% (*n* = 5) coloured participants, with 2.65% (*n* = 4) of the sample expressing their ethnicity as another type. The majority of the sample expressed a Christian religious affiliation (72.85%, *n* = 110) followed by those who expressed; having no religious affiliation (7.28%, *n* = 11), Hindu affiliations (5.30%, *n* = 8), Islamic Affiliations (4.64%, *n* = 7), Judaism affiliations (3.31%, *n* = 5) , traditional religious affiliations (1.99%, *n* = 3), Agnostic (1.32%, *n* = 2) and Catholic (1.32%, *n* = 2) associations, and finally Taoist, Atheist and Scientology perspectives all at 0.66% (*n* = 1) each.

2.4 Measures

Students who participated in the study were asked to complete an eight-page questionnaire. The questionnaire pack consisted of eight measures. These were the participant information letter (Appendix A), the participant consent letter (Appendix B), a demographic questionnaire (Appendix C), the Traumatic Stress Schedule (Appendix D), the Impact of Events Scale Revised (Appendix E), the Age Universal I-E Scale-12 (Appendix F), the Spiritual Involvement and Beliefs Scale (Appendix G) and the Multidimensional Scale of Perceived Social Support (Appendix H).

2.4.1 Demographic Questionnaire

Demographic information obtained included, age, gender, ethnicity and religious affiliation. These demographics were required for statistical purposes and only religious affiliation was required for the purposes of the study

2.4.2 The Traumatic Stress Schedule

The *Traumatic Stress Schedule* (TSS) devised by Norris (1990) assesses traumatic stress in the general population. It measures essential information about potentially traumatic events and assesses 10 events that are potentially traumatic. These include combat, robbery, motor vehicle accidents as well as one unspecified event. The scale format

follows two assumptions. The first being that it is important to assess levels of impairment within an event defined population and secondly it is important to quantify experiences that are stressful, generically (Norris & Hamblen, 2004). Each stressor has six dimensions which are assessed, these are: loss, scope, threat to life and physical integrity, blame, familiarity, and four probes that assess posttraumatic stress reactions. An index of lifetime trauma frequency can be calculated by summing the number of positive responses, a continuous score of lifetime trauma can also be used with higher scores reflecting more traumatic experiences (Smith, Leve & Chamberlain, 2006). Cumulative scores can be calculated and the categorical indicators (Yes/No) coded and summed for each participant (Smith et al., 2006). The event portion of the scale has shown to have very good reliability with a test-retest correlation of .88 (Norris & Perilla, 1996 as cited in Norris & Hamblen, 2004). The symptom portion of the scale has moderately high reliability with a Cronbach's alpha of .76 (Norris & Hamblen, 2004).

2.4.3 The Impact of Events Scale Revised

The *Impact of Events Scale Revised* (IES-R), by Weiss and Marmar (1997), was developed to parallel the DSM-IV criteria for PTSD and tap into the hyperarousal cluster of symptoms that was not included in the original Impact of Events Scale (IES). The IES-R is a 22-item self report measure designed to assess current subjective stress for any specific life event. Items are rated on a 5-point scale on the basis of how distressing an event is perceived to be, ranging from "not at all" to "extremely". There are three subscales for which Weiss and Marmar have reported high internal consistency, with

alphas ranging from .87 to .92 for Intrusion, .84 to .86 for Avoidance and .79 to .90 for Hyperarousal (Briere, 1997). The Hyperarousal subscale has good predictive validity with regard to trauma (Briere, 1997) and the Avoidance and Intrusion subscales have been shown, from the IES, to identify change in clinical status over time and differences in responses to traumatic events (Horowitz, Wilner & Alvarez, 1979). Subscales are scored by finding the mean of items in that particular subscale and the IES-R score is the sum of the three subscales.

2.4.4 The Age Universal I-E Scale-12

The *Age Universal I-E Scale-12* is a revision of Allport and Ross's version of the Religious Orientation scale and was designed by Maltby (1999) to assess intrinsic and extrinsic orientations towards religion. These constructs reflect the degree to which religion is viewed as a personal (intrinsic) or social, either by membership in a particular group or by allowing social status and participation in a social network (extrinsic) (Maltby, 1999). This scale is a 12-item measure of intrinsic and extrinsic dimensions to religiousness, and items fall into one of three categories: intrinsic, extrinsic-personal (religion as a source of comfort) and extrinsic-social (religion as a social gain) (Maltby, 1999). This scale is particularly useful as it is applicable among adults and children, among religious and non religious individuals (Maltby, 1999). Items are scored on a 3 point scale from 1 (Yes), 2 (Not certain) and 3 (No) in order to improve psychometric properties of the scale (Maltby, 1999). High internal reliabilities have been shown with alpha coefficients of .67 for the extrinsic-social dimension and .73 for the extrinsic-

personal dimension (Maltby, 2000). Higher internal reliabilities were reported by Maltby and Day (2000) with their study demonstrating alpha coefficients of .72 (extrinsic-personal), .73 (extrinsic-social) and .82 (intrinsic).

2.4.5 The Spiritual Involvement and Beliefs Scale

The *Spiritual Involvement and Beliefs Scale* (SIBS) by Hatch, Burg, Naberhaus and Hellmich (1998) is a 26-item self report scale and measures the extent to which spirituality and spiritual beliefs exist in and permeate one's life. The authors designed the scale to be widely applicable across religious traditions and to avoid cultural and religious bias. There are 14 positively worded items and 9 negatively worded items that have to be reversed before scoring, the remaining 3 items are frequency items that ask how often individuals engage in particular activities; higher frequency responses have higher scores that are added to the rest of the items (Hatch et al., 1998). A total score is obtained by finding the sum of all the items. The reliability and validity of this item is very good. Hatch et al. (1998) found high internal consistency, with a Cronbach alpha of .92, and strong test retest reliability where r = .92. The scale was also highly correlated with another established spirituality scale (Spiritual Well Being Scale), with a correlation coefficient of .80 (Hatch et al., 1998).

2.4.6 The Multidimensional Scale of Perceived Social Support

The *Multidimensional Scale of Perceived Social Support* (MSPSS) is used to measure levels of perceived support. It is a scale of interest due to its applicability across cultures. Developed by Zimet, Dahlem, Zimet and Farely in 1988, this measure has been widely validated in a range of samples including adolescents, older adults, pregnant women and psychiatric patients (Cheng & Chan, 2004). This 12-item scale assesses support across three sources, these subscales include family (FA), friends (FR) and significant other (SO) (Cheng & Chan, 2004). Scores range from 1 to 7, with high scores indicating high levels of perceived support. The authors claim the scale exhibits good internal and test-retest reliability as well as moderate construct validity. One study demonstrated internal consistency coefficients of .78 for the FA subscale, .76 for the FR subscale and .69 for the SO subscale (Cheng & Chan, 2004).

2.5 Data Analysis

2.5.1 The Role of Religiousness and Spirituality in Trauma and Posttraumatic Stress Symptoms

Hypotheses one and two were analysed using the analysis of variance (ANOVA) technique. Tests for the assumptions required, that is, normal distribution and interval data were considered (Huck, 2008). ANOVA's were used to compare mean scores

across religiousness/spirituality and, trauma and PTSS. The use of ANOVA's would take these comparisons a step further by testing for statistical differences in the mean scores between religiousness/spirituality and trauma/PTSS (IES-R scores) (Huck, 2008).

2.5.2 The Relationship between Religiousness and Spirituality

Hypothesis three sought to determine whether or not a relationship exists between the variables across the entire sample, that is, if religiousness and spirituality are related. Since there was no need for a cause and effect prediction, a correlational statistical procedure was used (Howell, 2004). The data was normally distributed and thus Pearson's correlation was used. High correlations would indicate that they are in fact related whereas low correlations would indicate the adverse.

2.5.3 The Relationship between Religiousness and Social Support

Hypothesis four attempted to test for the mediation of social support on religiousness and levels traumatisation, that is, posttraumatic stress symptoms (PTSS). A variable may "function as a mediator to the extent that it accounts for the relation between the predictor and the criterion" (Baron & Kenny, 1986, p.1176). That is, we may find that religiousness will not have an effect on levels of traumatisation due to high levels of social support. Consequently, it will be social support that in fact has the effect on coping with traumatisation and stress symptoms and not religiousness and its practices. A mediator variable is said to be responsible for the relationship between two main

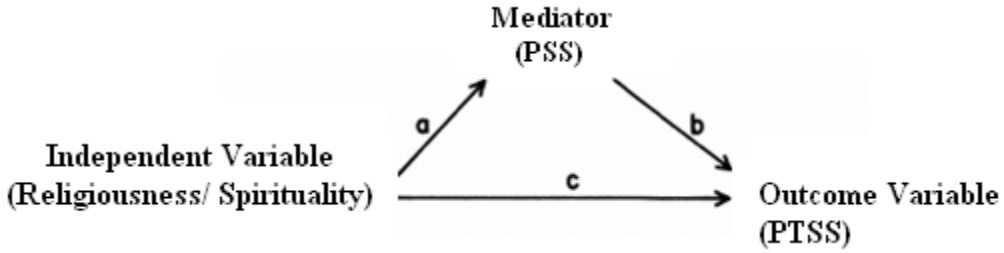
variables not the actual predicted variable. In the absence of the mediator, the relationship between the two main variables will not exist. In other words, with out the presence of social support, religiousness will not have an effect on levels of traumatisation.

Baron and Kenny (1986, p.1173) state that the "mediator function of a third variable, which represents the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest". Judd and Kenny (1981b, as cited in Baron & Kenny, 1986), state that data analysis should occur using multiple regressions, specifically the use of regression models, and specific regression equations should be estimated and correlations tested. Sobel's method, as suggested by Baron and Kenny (1986) was used to test whether or not social support carries the influence of religiousness on levels of reported traumatisation and PTSS. This method provides "an approximate significance test for the indirect effect of the independent variable [religiousness] on the dependent variable [levels of trauma and PTSS] via the mediator [social support]" (Baron & Kenny, 1986, p.1177). The formula used, once multivariate normality has been established is:

$$\sqrt{b^2 s_a^2 + a^2 s_b^2 + s_a^2 s_b^2}$$

Term '*a*' refers to the path from the IV to the mediator and term '*b*' refers to the impact of the mediator. Sobel however, omits the last term which is the standard error of the IV to the mediator and of the mediator to the DV, this term is seen as small and thus

omitting is not much of a problem (Baron and Kenny, 1986). The indirect effect (the mediation), also the '*ab*' term, is then divided by this formula to produce a *z* value, if it is greater than 1.96 in absolute value, we will reject the null hypothesis that the indirect effect is zero (Kenny, 2009). A diagram of the mediation model follows as:



(Baron & Kenny, 1986, p.1176)

Chapter 3: Results

3.1 Introduction

This study investigated the effects of religiousness and spirituality on posttraumatic stress symptoms. The relationships between religiousness/spirituality and trauma and stress symptoms were explored. Traumatisation was not expected to be normally distributed as earlier research indicated that stress and posttraumatic stress symptoms are normal reactions to trauma. Therefore, the distribution of the data approximated that which was expected. In view of this parametric tests were conducted.

3.2 Overall Correlations

An initial correlation procedure was conducted across the main variables, that is, religiousness, spirituality, trauma, the IES (stress symptom scores), and the MSPSS (social support measure) together with its three subscales (friends, family and significant other). The correlation matrix in shown in table 1.

Table 1

Correlation Matrix Across the Variables in the Study

Variable	1	2	3	4	5	6	7	8
1. Religiousness	-	-.49*	-.001	-.06	.154	-.02	.02	-.08
2. Spirituality		-	.05	.16*	.003	.23*	.16	.04
3. Trauma			-	-.03	-.009	-.034	-.03	.43*
4. Family				-	.55	.70	.87*	-.03
5. Friends					-	.69	.84*	-.10
6. Significant Other						-	.92*	-.08
7. MSPSS							-	-.084
8. IES								-

Note. * p < .05

Results indicated that religiousness and spirituality were significantly but negatively correlated (r = -.49, p<.0001). Spirituality was significantly associated the significant other social support subscale (r = .23, p = .0044). However, it was not correlated with the friends' and family subscales of social support, suggesting that individuals high in spirituality value the support given by a significant other. Trauma was significantly correlated with IES scores (PTSS) (r = .43, p<.0001), suggesting that one would invariably experience stress symptoms in the aftermath of a trauma and that in all likelihood, these stressors would increase depending on the severity or impact of the trauma. Religiousness and spirituality were not associated with the IES, whether one experienced a trauma, or whether or not they reported traumatisation; this finding is

contrary to that found in the literature above. It was expected that the social support scale, the MSPSS, was correlated with all its subscales, family (r = .87, p<.0001), friends (r = .84, p<.0001) and significant other (r = .92, p<.0001), indicating reliability with the measure in that it measured what it set out to measure and that social support can be drawn upon by any of these subscales.

3.3 Hypothesis 1: Religiousness Moderates the Relationship between Trauma and PTSS

A two-way ANOVA was conducted to test the main effect and interactions of trauma and religiousness on PTSS. The overall model was significant, $F_{(13,149)} = 3.03$, $p = 0.0006$. However, a non significant trauma by religiousness interaction was found, $F_{(5,149)} = 8.07$, $p = 0.5061$. As such, the main effects of trauma and religiousness were examined. A significant main effect for trauma, $F_{(7,149)} = 4.77$, $p = 0.0001$, was found. Religiousness in itself was not found to be significantly related to PTSS, $F_{(1,149)} = 1.67$, $p = 0.199$ adn as such was not even a factor in this sample. These findings suggests that the number of traumas that one experiences a predictor of PTSS.

Post hoc analyses were performed where a new variable was created using the trauma variable. Important to mention, is that the trauma variable consisted of the total number of traumatic events reported by each particular participant, with an obvious increase of means with increased traumas (see Table 2). However, the small sample sizes in some of

the cells posed the risk of inflated Type II error due to insufficient power. As such, the new variable collapsed the trauma variable into 'no trauma', 'one trauma' and 'multiple traumas' resulting in a categorical variable with three levels. Median splits were also used to compare groups on high versus low levels of religiousness or spirituality and number of traumas. Analyses were rerun with the new trauma variable.

Table 2

Frequency Count of Traumatic Events Reported

Number of Traumas	N	Mean IES*
0	9	18.0
1	42	19.26
2	40	26.63
3	36	33.19
4	15	35.67
5	6	47.33
8	1	48
9	1	70

Note. (*) IES scores represent posttraumatic stress symptoms

The overall model, of trauma and religiousness on PTSS, was significant, $F_{(5,149)} = 4.54$, $p = 0.0007$. Once again a non significant trauma by religiousness interaction was found, $F_{(2,149)} = 1.25$, $p = 0.2905$. Therefore, the main effects of trauma and religiousness were examined. A significant main effect for trauma, $F_{(2,149)} = 9.30$, $p = 0.0002$, was found,

however, religiousness in itself was not found to be significantly related to PTSS, $F_{(1,149)} = 1.58$, $p = 0.2103$. The results indicated that the new trauma variable did not significantly alter the outcomes of religiousness by trauma and PTSS, as the same results were found before and after the post hoc analyses, suggesting once again that religiousness was not a factor in this sample and did not play a significant role in buffering PTSS.

3.4 Hypothesis 2: Spirituality Moderates the Relationship between Trauma and PTSS

A two way ANOVA was conducted to test the main effects and interactions of trauma and spirituality on PTSS. Prior to the post hoc analyses with the new trauma variable, the overall model was significant, $F_{(13,149)} = 3.26$, $p = 0.0003$. However, a non significant trauma by spirituality interaction was found $F_{(5,149)} = 1.68$, $p = 0.1445$. As such, the main effects of trauma and spirituality were examined. A significant main effect for trauma, $F_{(7,149)} = 4.80$, $p < .0001$, was found. Spirituality in itself was not found to be significantly related to PTSS, $F_{(1,149)} = 0.43$, $p = 0.5150$.

As with hypothesis one, analyses were rerun using the new trauma variable in order to reduce the risk of making a Type II error. Results revealed that the overall model, of trauma and spirituality on PTSS, was significant, $F_{(5,149)} = 5.12$, $p = 0.0002$. In addition, a significant trauma by spirituality interaction was found, $F_{(2,149)} = 3.62$, $p = 0.0292$ (see

Figure 1), suggesting that there was a significant relationship between spirituality and PTSS.

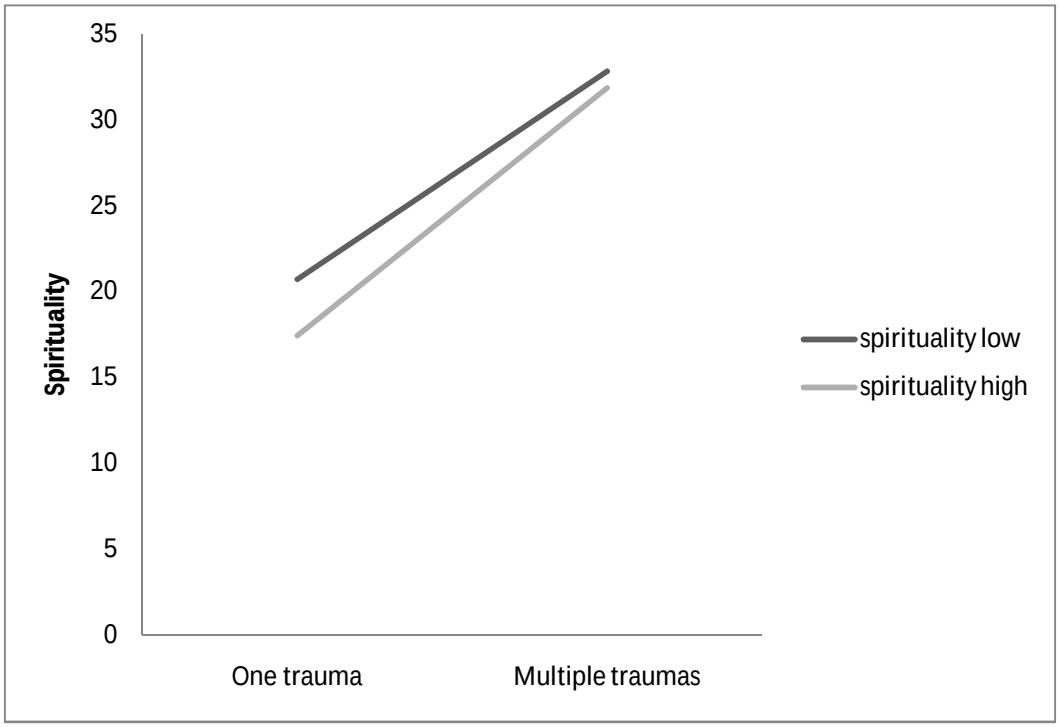


Figure 1. Trauma by Spirituality Interaction

Post hoc analyses were then conducted using Tukey Honestly Significant Differences (HSD) to ascertain which comparison groups were most significant in terms of the new trauma variable and levels of spirituality. Results (see Table 2), suggest that spirituality buffers best when there is one trauma and not when there are multiple traumas.

Table 2

Comparison of Means between Number of Traumas and Levels of Spirituality

		One (*N*)	Multiple (*N*)
Spirituality	**Low**	20.74 (23)	32.88 (40)
	High	17.47 (19)*****	31.90 (59)*****

Note. **(*) Indicates significant comparison groups as indicated by Post-hoc Tukey HSD test**

3.5 Hypothesis 3: There is a Significant Relationship between Religiousness and Spirituality

Pearson's correlation analysis was used to determine whether or not there was a significant relationship between religiousness and spirituality. Religiousness and spirituality were both assessed across the sample. Results showed that there was indeed a significant, negative and moderate relationship between the two variables (r = -.49, p<.0001). These results suggest that individuals' high in spirituality tend to be lower in religiousness, and vice versa, suggesting that perhaps the two are mutually exclusive.

3.6 Hypothesis 4: Religiousness is Mediated by Social Support

As discussed in the previous sections, it is important to establish the true relationship between religiousness and PTSS. In order to do so, a regression analyses was conducted to establish if religiousness was mediated by social support in its relation to trauma and

PTSS. A regression analysis was run in order to obtain the standard error and parameter estimates of religiousness and the MSPSS (social support). The regression weight for the relationship between the independent variable and the mediator was r^2 = -.28361 and the standard error of the relationship between the independent variable and the mediator was .272996. The regression weight for the relationship between the mediator variable and the dependent variable was r^2 = -.10209 and the standard error of the relationship between the mediator variable and the dependent variable was .10100.

These regression weights were then keyed into the Sobel test calculator to establish whether the mediator variable (social support) significantly carried the influence of the independent variable (religiousness) to the dependent variable (IES). That is, whether the indirect effect of the independent variable on the dependent variable through the mediator variable was significant. Kenny (2009) suggested that if the z statistic is greater than 1.96 in absolute value, the null hypothesis, that the indirect effect is zero, should be rejected. The Sobel test statistic was .73 with z = .469. Therefore, we failed to reject the null hypothesis (z = .469 < 1) concluding that the indirect effect was equal to zero and thus no mediation effect occurred.

Chapter 4: Discussion

The aim of the study was to investigate whether religiousness and spirituality moderate the relationship between experiencing a traumatic event and whether or not an individual will report traumatisation in terms of PTSS. Research indicates that certain factors buffer the effects of PTSS and that religiousness and spirituality have been identified as such factors. This area of study is partial in a South African context and thus the current study endeavoured to delve deeper into the subject matter. In addition, religiousness and spirituality were analysed in order to describe the nature of their relationship as this has been of much debate in past and current literature. Social support was also accounted for by the study in order to conclude that religiousness had the main effect on trauma and PTSS. The results were presented in the preceding chapter and their interpretations and meanings will be discussed in detail in this chapter.

4.1 The Relationship between Religiousness, Trauma and PTSS

The present study found that PTSS was most associated with the number of traumatic events experienced. Religiousness was not found to be predictive of PTSS. On re-examining the data, after creating the new trauma variable, it was observed that 66% of the sample experienced multiple traumas. Despite this fact however, the results remained constant. Religiousness was not significantly linked to trauma or PTSS indicating that religiousness does not buffer the development of PTSS. Taken together, the above

findings suggest that PTSS are likely to develop and religiousness is not a potential buffer of PTSS.

These findings are both different and similar to what the literature suggests. Cornah (2006) and Bussing (2008) both found religiousness, in general, to be positive contributors to mental health and well being, while a review of literature conducted by Chen and Koenig (2006) found that religiousness was indeed a positive factor in dealing with trauma. Studies revealed that increased religiousness was associated with decreased levels of PTSD in family members of drunken driving victims (Sprang & Mcneil, 1998 as cited in Chen & Koenig, 2006) and that battered women who had high levels of intrinsic religiousness scored lower on the IES, thus they presented with lower levels of PTSS (Astin et al., 1993 as cited in Chen & Koenig, 2006). However, Chen and Koenig (2006) also found literature that suggested that higher levels of religiousness were associated with higher PTSS, as assessed by the IES, suggesting that religiousness may not always act to buffer the effects of trauma and PTSS as its moderating effects may be a function of individuals' preferences and the trauma itself. The findings of research studies have thus produced mixed results, as seen in Chen and Koenig (2006), which may be a product of using religiousness and spirituality interchangeably. These mixed findings could possibly have been due to differences in the operationalisation of religiousness and spirituality, as the present study found, they are empirically different constructs and perhaps effects that have been found have been for spirituality and not religiousness.

4.2 The Relationship between Spirituality, Trauma and PTSS

Hypothesis two examined the moderating effects of spirituality on trauma and PTSS. Initial results revealed that the overall model was significant but that a non significant interaction was found for spirituality by trauma. Spirituality itself was also found to be non significant, however the number of traumatic events that one was exposed to was significant indicating once again that we can invariably expect that PTSS will occur in the after math of a trauma and that the severity of the trauma will have a direct impact on the number of and severity of the stress symptoms. Subsequent to post hoc analyses with the new trauma variable, results were very different. A significant overall model was found, as well as a significant interaction of spirituality by trauma. This suggested that spirituality was indeed an important factor for dealing with trauma and PTSS. Specifically, spirituality seems to act as a buffer for the development of PTSS, but only when an individual experiences one trauma. With multiple traumas, there is no difference in PTSS between spiritual and non spiritual individuals. Multiple traumas thus represent a significant risk factor for the development of chronic and debilitating PTSD. This has serious implications for South Africans at large as multiple trauma exposure is a common occurrence.

The effects of spirituality as a potential source for dealing with trauma are consistent with the literature. Bussing et al. (2008) found that terminally ill patients with high levels of spirituality had better life satisfaction compared to patients with low levels of spirituality. In addition, Humphreys (2000 as cited in Sigmund, 2003) found that female victims of

domestic abuse who had high levels of spirituality had fewer emotional and physical responses. Krejci et al. (2004) found that sexual trauma victims who scored higher on their spirituality measure had lower stress symptoms, while Lee & Waters (2003) found that students who where high in spirituality reported less trauma (as cited in Chen & Koenig, 2996), reiterating the beneficial results of spirituality found in this study.

In addition, the spiritual meanings and assumptions that individuals have, plays an important role in the relationship between spirituality and PTSS. Spiritual beliefs develop a belief in individuals' that their life has meaning and that they have some control over their fate (Werner, 1984 as cited in Davis, Kerr & Kupius, 2003). Perhaps experiencing more than one trauma starts to shatter these spiritual assumptions, leading spirituality to be ineffective as a buffer against PTSS. Interestingly, gender also appears to be a variable that might need to be covaried. There appears to be a large gender effect in terms of spirituality, as highlighted by Davis et al. (2003), who found that male adolescents with higher spiritual well being tended to have lower levels of anxiety and that spiritual well being and female gender were found to be the best predictors of anxiety.

4.3 The Relationship between Religiousness and Spirituality

Hypothesis three sought to establish the nature of the relationship between religiousness and spirituality. There are vast amounts of literature that suggest that religiousness and

spirituality are the same constructs and differ only in definition and use (Hyman & Handal, 2006; Zinnbauer et al., 1997). However, other literature and researchers debate that these two construct are mutually exclusive and to regard them as equivalent is an error in judgement (Argyle & Beit-Hallahmi, 1975; Hyman & Handal, 2006; Koenig et al., 2001; Love, 2001). The results suggested that religiousness and spirituality, as operationalised in this study, were significantly related indicating that they are qualitatively different from each other, and that individuals higher in spirituality tend to be lower in religiousness, while those higher in religiousness tend to be lower in spirituality. This suggested that religiousness and spirituality may be mutually exclusive constructs and may be separate bodies of knowledge and meaning, with a unique set of definitions, meanings and contexts. Although having a similar under current in terms of importance and meaning in one's life, these constructs are practiced and understood in different ways across individuals. The literature suggested that they both provide a source of social support and networking among individuals and they seem to provide a goal and comfort of seeking a higher purpose in life. However, religiousness was not significantly related to social support in the current study, while spirituality was significantly related to the social support provided by a significant other. This reiterates the conclusion that these may be two separate constructs and that one can occur in the absence of the other, lending support to the view that one can be spiritual without being religious.

The results are consistent with the majority of current research that suggest that religiousness and spirituality are mutually exclusive (Hyman & Handal, 2006;

Pargament, 1997). However, conflicting results have been found. Hyman and Handal (2006) suggest that although these constructs may be defined differently, they are nonetheless related concepts and that there is substantial evidence to advocate that religiousness and spirituality may be the same construct. Zinnbauer et al. (1997) however, claims that the distinction between these constructs comes from their differing definitions and that even though they may describe different concepts, they are not fully independent. The debate therefore, exists in part due to the fact that there is a lack of consensus with regard to the definitions of these terms which in turn gives rise to the debate about whether or not these are two distinct constructs. However, with the statement that one can be spiritual but not religious (Bryant et al., 2003) it does seem plausible that these two constructs can be related without classifying them as one, thus still maintaining their mutual exclusivity as proposed by the results.

4.4 The Mediating Effects of Social Support

Hypothesis four examined whether or not social support acted as a mediator in the relationship between religiousness and trauma and PTSS. The Sobel test calculator was used to establish whether this was the case. The findings suggested that no such mediation relationship existed in this sample. In other words, social support did not account for relationship between religiousness and PTSS. This suggests that the relationship between religiousness and PTSS is a direct one. Social support can therefore be described as a coping mechanism one employs in the face of trauma and PTSS. This

finding is consistent with literature in this area as described by Jones (2004) who claimed that a review of his literature failed to find a mediating role for social support when religiousness was examined.

The fact that religiousness and social support were not associated with each other suggests that these two factors are independent of each other and that one can exist or occur in the absence of the other. Thus, one can be religious without the intention of social support and social support can be experienced with out one having to be religious.

Although religiousness was not significantly linked to social support, spirituality was found to be significantly related to social support. This indicates that finding comfort from a significant loved one involves elements of spirituality when coping with trauma and PTSS, and that perhaps this relation is important in terms of shared spiritual views held by the individual and his or her significant other. This study did not account for the relationship between spirituality and social support as this was beyond the scope and aims of the study, future research would do well to take this into consideration.

4.5 Limitations of the Study

There are various aspects in research design and methods used in the data collection and statistical analyses that could have potentially limited, and have had implications in the overall findings of the study. These are discussed below.

The sample considered for the study only included economics undergraduate students of the University of the Witwatersrand. Therefore, the generalisability of the finding may be limited to such a sample due to the fact that the sample did not represent the general population. Sampling methods were chosen in terms of greater class sizes to ensure a greater number of participants and thus the sample may not be considered as random. The sampling techniques used may therefore have had various implications on research design aspects, in terms of population and ecological validity with regard to who the findings could be applied to and the extent to which they could be generalised.

The general limitations of using quantitative research methods do not exclude this study. Although such quantitative research is a valuable resource in being able to record reliable information that can be replicated and generalised, it does not allow for the exploration of unique and in depth responses that is warranted by qualitative analyses. Such responses would be valuable in a study of this nature as it involves highly personal experiences that need to be articulated wholly.

As with any self report instruments, there are implications in terms social desirability and patterned responses. These limit the study in that they are not true reflections of the experiences that an individual may have had and thus the findings may be compromised.

In terms of statistical analysis, median splits were calculated to compare high versus low scores for religiousness and spirituality. The use of median splits reduces statistical

power primarily due to the reduction in the inherent variability of the predictor and it can also exaggerate the differences between observations and minimise the differences in others when this might not be the case (MacCallum, Zhang, Preacher & Rucker, 2002). Overall, this is not particularly ideal for analysis, however this technique was only used to allow for the comparison of individuals who experienced one trauma with those who experienced multiple traumas, thus it should have not impacted the results in any way. Future research with larger samples would be ideal to avoid such issues arising.

4.6 Possibilities for Future Research

It is apparent from the results that certain factors may predict and moderate trauma and PTSS. This study only considered whether or not religiousness and spirituality are factors in dealing with trauma. Future research exploring additional factors would be beneficial for intervention purposes. In addition, insight into posttraumatic growth would be valuable by delving into how and why it is that this buffer is an important factor when dealing with trauma and how this might be related to posttraumatic growth processes.

Studies conducted on religiousness independently, may perhaps produce clearer results than this study did. The effects of religiousness as a moderator may thus be analysed and researched more thoroughly by exploring many differing avenues.

Future research should also continue to investigate the differences between religiousness and spirituality, both conceptually and psychometrically in order to gain a better understanding of these constructs and their relation to one another. Past research and the results from this study suggest that it is possible to be religious without being spiritual and spiritual without being religious. While many individuals accept the idea that religion can exist independently of spirituality, the same may not be true for being spiritual without religion (Hyman & Handal, 2006). Therefore, future research should investigate whether spirituality can exist independently of religion.

A lack of consensus between researchers with regard to the definitions, relations and concepts of religiousness and spirituality seems to exacerbate the lack of clarification in this area. Further research into these constructs would help to clarify these issues. Future research should also focus on operationalising religiousness and spirituality separately, and not use these constructs interchangeably. This would avoid mixed results allowing for a clearer understanding of the idiosyncrasies of these constructs, while also making clear that effects found are a product of the distinct construct.

Gender was seen to have had a significant role in the Davis et al. (2003) study suggesting that it is an important factor that warrants further reflection. The inclusion of gender as a covariate should be taken into consideration in future research.

Further research in the area of social support as a mediator would be beneficial with regard to the benefits of religiousness as a way of dealing with trauma. Such research

should focus on social support and religiousness as the main aim of study as this was only a secondary aim of this study.

In addition, it was beyond the scope of the present study to analyse the relationship between spirituality and social support. Future research should perhaps explore this relationship further as the results of the present study suggested a significant relationship between the two constructs.

The current depicted a very obvious increase in PTSS as a function of the number of traumas experienced. People with three or more traumas are above the proposed cut off point for possible PTSD on the IES-R. This multiple traumatisation makes South Africa a unique trauma context as multiple traumas are a more common occurrence here. Future research needs to explore multiple traumatisations as it presents the greatest risk for mental health in the aftermath of trauma.

4.7 Conclusion

This study explored the moderating effects of religiousness and spirituality on trauma and PTSS as research indicated that these factors may potentially buffer the negative effects of trauma (Bussing et al., 2008; Idler et al., 2001; Seybold & Hill, 2001; Sigmund, 2003). The results indicated that religiousness did not act as a moderating factor in the study but that spirituality did. Overall, spirituality had beneficial effects for individuals who had high levels of spirituality and was most significant at moderating trauma and PTSS when one trauma was involved. It should be noted that traumatic experiences were found to affect all individuals regardless of whether one was religious or spiritual. It is in the aftermath of trauma that religiousness or spirituality may function as moderators. It appears that religiousness and spirituality may act as coping mechanisms, perhaps in the form of spiritual practices or social support, or even a combination of both. In this case, religion was not a factor that buffered PTSS, however spirituality was. Thus, the conclusion that one can be spiritual but not religious may be a correct one in terms of these results. Religiousness and spirituality were found to be mutually exclusive, however further research would be beneficial to clarify their definitions and meanings in order for each to be used in the correct context and form. The study highlighted the importance of investigating factors that serve to buffer the impact of trauma and PTSS. Further research into this area, as well as religiousness, spirituality and posttraumatic growth would be advantageous for trauma victims.

References

Allers, E. (2008). *The Burden of Disease Conference.* South Africa.

Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology, 5,* 432-433.

American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders.* 3rd ed. Washington, DC: American Psychiatric Association.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders.* 4th ed. Washington, DC: American Psychiatric Association.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR.* Washington, DC: American Psychiatric Association.

Argyle, M., & Beit-Hallahmi, B. (1975). *The social psychology of religion.* London: Routledge.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Briere, J. (1997). *Psychological assessment of adult posttraumatic states.* Washington D.C.: American Psychological Association.

Bryant, A. N., Choi, J. Y., & Yasuno, M. (2003). Understanding the Religious and Spiritual Dimensions of Students' Lives in the First Year of College. *Journal of College Student Development, 44,* 723-745.

Bussing, A., Fischer, J., Ostermann, T., & Matthiessen, P. F. (2008). Reliance on God's Help, Depression and Fatigue in Female Cancer Patients. *The International Journal of Psychiatry in Medicine, 38,* 357-372.

Carey, P.D., Stein, D.J., Zungu-Dirwayi, N.M.A., & Seedat, S. (2003). Trauma and Posttraumatic Stress Disorder in an Urban Xhosa Primary Care Population: Prevalence, Comorbidity, and Service Use Patterns. *The Journal of Nervous and Mental Disease, 191,* 230-236.

Cheng, S., & Chan, A. C. M. (2004). The multidimensional scale of perceived social support: dimensionality and age and gender differences in adolescents. *Personality and Individual Differences, 37,* 1359-1369.

Chen, Y. Y., & Koenig, H. G. (2006). Traumatic Stress and Religion: Is there a Relationship? A Review of Empirical. *Journal of Religion and Health, 45,* 371-381.

Compton, W. C. (2005). *An Introduction to Positive Psychology.* USA: Thompson Wadsworth.

Cornah, D. (2006). *The impact of spirituality on mental health: a review of the literature.* Mental Health Foundation.

Davis, L T, Kerr, A R & Robinson Kurpius, E S. (2003), Meaning, Purpose, and Religiosity in At-Risk Youth: The Relationship between Anxiety and Spirituality, *Journal of Psychology and Theology*, *31*.

Dorn, C., & Novoa, M. (2004). *What you should know about trauma.* A Cooperation Project of the Gesellschaft zur Unterstützung von Gefolterten und Verfolgten e. V. and Beschäftigung und Bildung e.V. in the EQUAL –Development Partnership "Qualifizierungsoffensive für Asylbewerber/innen und Flüchtlinge in Hamburg", Retrieved from http://www.gla.ac.uk/rg/etraum03.pdf.

Ellison, C. G. (1994). Religion, the life stress paradigm, and the study of depression. In J. S. Levin (Ed.), *Religion in aging and health: Theoretical foundations and methodological frontiers* (pp. 78-121). Thousand Oaks: Sage.

Fontana, A., & Rosenheck, R. (2004). Trauma, change in strength of religious faith, and mental health service use among veterans treated for PTSD. *Journal of Nervous and Mental Disease, 192,* 579-584.

Friedman, M. J. (2003). *Posttraumatic stress disorder: the latest assessment and treatment strategies*. Kansas City: Compact Clinicals.

Galea, S., Nandi, A., & Vlahov, D. (2005). The Epidemiology of Post-Traumatic Stress Disorder after Disasters. *Epidemiologic Reviews, 27,* 78-91.

Green, J. E., Gardner, F. M., & Kippen, S. A. (2009). Healing of the Soul: The role of spirituality in recovery from mental illness. *International Journal of Psychosocial Rehabilitation, 13,* 65-75.

Hatch, R. L., Burg, M. A., Naberhaus, D. S., & Hellmich, L. K. (1998**).** The Spiritual Involvement and Beliefs Scale. Development and testing of a new instrument. *Journal of Family Practice, 46,* 476-486.

Heim, G., & Buhler, K. E. (2006). Psychological trauma and fixed ideas in Pierre Janet's conception of dissociative disorders. *American Journal of Psychotherapy, 60,* 111-129.

Horowitz, M. J. (1999). Introduction. In M. J. Horowitz (Ed.), *Essential papers on posttraumatic stress disorder* (pp. 1-18). New York: New York University Press.

Horowitz, M., Wilner, M., & Alvarez, W. (1979). Impact of Events Scale: a measure of subjective stress. *Psychosomatic Medicine, 41,* 209-218.

Howell, D. C. (2004). *Fundamental Statistics for the Behavioural Sciences* (5th ed.). Australia: Thompson Brooks/Cole.

Huck, S. W. (2008). *Reading Statistics and Research* (5th ed.). United States of America: Pearson Education, Inc.

Hyman, P., & Handal, C. J. (2006). Definitions and Evaluation of Religion and Spirituality Items by Religious Professionals: A Pilot Study. *Journal of Religion and Health, 45,* 264-282.

Idler, E. L., Musick, M. A., Ellison, C. G., George, L. K., Krause, N., Ory, M. G., et al. (2001). Measuring multiple dimensions of religion and spirituality for health research. *GSS Topical Report, 33,* 1-33.

Jones, J. W. (2004). Religion, Health, and the Psychology of Religion: How the Research on Religion and Health Helps Us Understand Religion. *Journal of Religion and Health, 43,* 317-328.

Jones, E., & Wessely, S. (2007). A paradigm shift in the conceptualisation of psychological trauma in the 20th century. *Journal of Anxiety Disorders, 21,* 164-175.

Joseph, S., Williams, R., & Yule, W. (1997). *Understanding posttraumatic stress.* England: John Wiley & Sons, Ltd.

Kenny, D. A. (2009). *Estimating and testing mediation. Paper presented at the University of Connecticut.* United States of America. Retrieved from http://davidakenny.net/p5130/mediationsem.ppt.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health.* New York: Oxford: Oxford University Press.

Love, P. G. (2001). Spirituality and student development: theoretical connections. In M. A. Jablonski (Ed.), *The implications of student spirituality for student affairs practice* (pp. 7-16). San Francisco: Jessey-Bass.

MacCullum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. (2002). On the Practice of Dichotomization of Quantitative Variable. *Psychological Methods, 7,* 19-40.

Maltby, J. (1999). The internal structure of a derived, revised, and amended measure of the Religious Orientation Scale: The 'Age-Universal' I-E scale 12. *Social Behaviour and Personality, 27,* 407-412.

Maltby, J. (2002). The Age Universal I-E Scale-12 and Orientation Toward Religion: Confirmatory Factor Analysis. *The Journal of Psychology, 136,* 555-560.

Maltby, J. (2005). Protecting the sacred and expressions of rituality: examining the relationship between extrinsic dimensions of religiosity and unhealthy guilt. *Psychology and Psychotherapy: Theory, Research and Practice, 78*, 77–93.

Maltby, J., & Day, L. (2000). Depressive symptoms and religious orientation: examining the relationship between religiosity and depression within the context of other correlates of depression. *Personality and Individual Differences, 28*, 383-393.

McFarlane, A. C. (2003). Early reactions to traumatic events: The diversity of diagnostic formulations. In R. Orner & U. Schnyder (Eds.), *Reconstructing early intervention after trauma* (pp. 45-56). New York: Oxford University Press.

Moreira-Almeida, A., Neto, F. L., & Koenig, H. G. (2006). Religiousness and mental health: a review. *Revista Brasileira De Psiquiatria, 28*, 242-250.

Mueser, K. T., Bolton, E., Carty, P. C., Bradley, M. J., Ahlgren, K. F., DiStaso, D. R., et al. (2007). The Trauma Recovery Group: A cognitive behavioural program for post-traumatic stress disorder in persons with severe mental illness. *Community Mental Health Journal*, 1-15.

Norris, F. H. (1990). Screening for traumatic stress: a scale of use in the general population. *Journal of Applied Social Psychology, 20*, 1704-1718.

Norris, F. H., & Hamblen, J. L. (2004). Standardized self-report measures of civilian trauma and PTSD. In J.P. Wilson, T.M. Keane & T. Martin (Eds.), *Assessing psychological trauma and PTSD* (pp. 63-102). New York: Guilford Press.

Pargament, K. I. (1997). *The psychology of religion and coping.* New York: Guilford Press.

Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of Behavioural Research: methods and data analysis* (2nd ed.). United States of America: McGraw-Hill Companies, Inc.

Rosenthal, R., & Rosnow, R. L. (2005). *Beginning Behavioural Research: A Conceptual primer* (5th ed.). London: Pearson Prentice Hall.

Ross, E., & Deverell, A. (2004). *Psychosocial approaches to health, illness and disability: a reader for health care professionals*. Pretoria: Van Schaiks Publishers.

Saucier, G., & Skrzypinska, K. (2006). Spiritual but not Religious? Evidence for Two Independent Dispositions. *Journal of Personality, 74,* 1257-1292.

Schorr, Y. H. (2005). *Quality of life after exposure to trauma: moving beyond symptom assessment and exploring resilience factors* (Doctoral dissertation, University of Massachusetts). Available from ProQuest Dissertations & Theses database. (UMI No. 3205035)

Seedat, S., le Roux, C., & Stein, D. J. (2003). Prevalence and characteristics of trauma and post-traumatic stress symptoms in operational members of the South African National Defence Force. *Military Medicine, 1,* 71-75.

Seybold. K. S., & Hill, P. C. (2001). The Role of Religion and Spirituality in Mental and Physical Health. *Current Directions in Psychological Science, 10*, 21-24

Sigmund, J. A. (2003). Spirituality and Trauma: The Role of Clergy in the Treatment of Posttraumatic Stress Disorder. *Journal of Religion and Health, 42,* 221-229.

Smith, D. K., Leve, L. D., & Chamberlain, P. (2006). Adolescent girls' offending and health-risking behaviour: the predictive role of trauma. *Child Maltreatment Online, 11,* 346-353.

South African Institute for Traumatic Stress. (2000). *Posttraumatic Stress Disorder: A Guide for the Frontline.* South Africa: PTSD Alliance.

Swinton, J. (2001). *Spirituality and Mental Health Care.* London: Jessica Kingsley Publishers.

Vis, J., & Brownlee, K. (2008). Hope and Meaning During Times of Tragedy and Loss: Appreciating the Influence of Meaning in the Aftermath of Trauma. *International Journal of Psychosocial Rehabilitation, 13,* 39-49.

Weiss, D., & Marmar, C. (1997). The Impact of Events Scale Revised. In J. Wilson & T. Keane (Eds.), *Assessing psychological trauma and PTSD* (pp. 399-411). New York: Guildford.

Zimet, G.D., Dahlem, N.W., Zimet, S.G. & Farley, G.K. (1988). The Multidimensional Scale of Perceived Social Support. Journal of Personality Assessment, 52, 30-41.

Zinnbauer, B. J., Pargament, K. I., Mark, B. C., Rye, S., Butter, E. M., Belavich, T. G., et al. (1997). Religion and Spirituality: Unfuzzying the Fuzzy. *Journal for the Scientific Study of Religion, 36,* 549-564.

Appendices:

Appendix A: Participant Information Letter

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

School of Human and Community Development
Private Bag 3, Wits 2050
Johannesburg, South Africa
Tel: (011) 717-4500 Fax: (011) 717-4559

Hi, my name is ***Yushika Govender***, and I am conducting research for the purposes of obtaining a Masters degree in Research Psychology at the University of the Witwatersrand. My area of interest lies within the topic of trauma and coping. Dealing with trauma is seen as a challenge for some while others may overcome these challenges and lead a fulfilling life. In light of this, this study aims to explore the ways in which people make meaning of different challenges that they encounter, such as trauma. I would like to invite you to participate in this study.

Participation in this research will entail completing the attached questionnaire. The questionnaire will take approximately 15 - 20 minutes to complete. Participation is voluntary, and no student will be advantaged or disadvantaged in any way for choosing to complete or not complete the questionnaire. While questions are asked about your personal circumstances, no identifying information, such as your name or student number is asked for, and as such you will remain anonymous. Your completed questionnaire will not be seen by any person in this university at any time, and will only be processed by myself. Your responses will only be looked at in relation to all other responses.

If you choose to participate in the study please complete the attached questionnaire as carefully and honestly as possible. Once you have completed your questionnaire please hand it back to me. This will ensure that no one will have access to the completed questionnaires except me.

Due to the fact that the research is looking at your thoughts on how you have made meaning of different challenges, you may or may not experience some mild distress at some of the questions. Should you feel any apprehension due to answering these questions please contact the Counselling and Careers Development Unit at Wits on 011 717 9135, alternatively you can contact the Trauma Clinic at the CSVR in Braamfontein on 011 403 5102.

Your participation in this study would be greatly appreciated. This research will contribute to a larger body of knowledge on coping and the ways in which meaning making processes relate to how people cope. This may inform health professionals on how best to incorporate these processes in interventions with people who have experienced life-altering challenges such as trauma. Should you be interested in the outcomes of this study please email me at the address below early next year and a summary of the results will be sent to you.

Thank you for considering taking part in this research. Please detach and keep this sheet

Kind Regards

Yushika Govender
(Researcher)
Yushika.Govender@students.wits.ac.za

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(Supervisor)
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Appendix B: Participant Consent Letter

I am willing to participate in this study and am aware of the following:

- By filling in this questionnaire, I am giving my consent to partake in the study
- Participation in this study is voluntary.
- No information that may identify me will be included in the research report, and my responses will remain confidential.

Appendix C: Demographic Questionnaire

(Please mark the option that applies to you, where appropriate)

1. Age: ☐

2. Gender:

MALE	**FEMALE**

3. Ethnicity:

BLACK	**COLOURED**	**INDIAN**	**WHITE**	**OTHER**

If Other, Please specify: _____
(This specific response is required for statistical purposes only)

4. Religious Affiliation:

CHRISTIANITY	**HINDUISM**	**ISLAM**	**JUDIASM**
NO RELIGIOUS AFFILIATION	**TRADITIONAL AFRICAN RELIGION**		
OTHER			

If Other, Please specify: _____
(This specific response is required for statistical purposes only)

Appendix D: Traumatic Stress Schedule

Please read the statements below and answer the questions by choosing the answer of your choice. You are required to place a cross (x) over the chosen answer. Write in your answer for question 18.

1	Did anyone ever take or attempt to take something from you by force or threat of force, such as in a robbery, mugging, smash n grab or holdup?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
2	Did anyone ever beat you up or attack you?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
3	Did anyone ever make you have sex by using force or threatening to harm you? This includes any type of unwanted sexual activity.	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
4	Did a very close friend or a close family member ever die because of an accident, homicide, or suicide?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
5	Have you ever been hijacked or someone very close to you been hijacked?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
6	Were you ever in a motor vehicle accident serious enough to cause injury to one or more passengers?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
7	Did you ever serve in combat?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
8	Did you ever suffer injury or extensive property damage because of fire?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
9	Did you ever suffer injury or property damage because of severe weather or either a natural or manmade disaster?	no	yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago

Appendix E: Impact of Events Scale Revised

Instructions: The following is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you *during the past 7 days* with respect to the disaster. How much were you distressed or bothered by these difficulties?						
		Not at all	**A little bit**	**Moderately**	**Quite a bit**	**Extremely**
1	Any reminder brought back feelings about it.	0	1	2	3	4
2	I had trouble staying asleep.	0	1	2	3	4
3	Other things kept making me think about it.	0	1	2	3	4
4	I felt irritable and angry.	0	1	2	3	4
5	I avoided letting myself get upset when I thought about it or was reminded of it.	0	1	2	3	4
6	I thought about it when I didn't mean to.	0	1	2	3	4
7	I felt as if it hadn't happened or wasn't real.	0	1	2	3	4
8	I stayed away from reminders about it.	0	1	2	3	4
9	Pictures about it popped into my mind.	0	1	2	3	4
10	I was jumpy and easily startled.	0	1	2	3	4
11	I tried not to think about it.	0	1	2	3	4
12	I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0	1	2	3	4

13	My feelings about it were kind of numb.	0	1	2	3	4
14	I found myself acting or feeling like I was back at that time.	0	1	2	3	4
15	I had trouble falling asleep.	0	1	2	3	4
16	I had waves of strong feelings about it.	0	1	2	3	4
17	I tried to remove it from my memory.	0	1	2	3	4
18	I had trouble concentrating.	0	1	2	3	4
19	Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.	0	1	2	3	4
20	I had dreams about it.	0	1	2	3	4
21	I felt watchful and on guard.	0	1	2	3	4
22	I tried not to talk about it.	0	1	2	3	4

Appendix F: The Age Universal I-E Scale-12

Please answer the following by marking the option that applies to you

		Yes	**Not Certain**	**No**
1	I try hard to live all my life according to my religious beliefs	1	2	3
2	What religion offers me most is comfort in times of trouble and sorrow	1	2	3
3	I pray mainly to gain relief and protection	1	2	3
4	I go to church because it helps me make friends	1	2	3
5	It is important to me to spend time in private thought and prayer	1	2	3
6	I enjoy reading about my religion	1	2	3
7	I have often had a strong sense of God's presence	1	2	3
8	I go to church mostly to spend time with my friends	1	2	3
9	My whole approach to life is based on my religion	1	2	3
10	My religion is important because it answers many questions about the meaning of life	1	2	3
11	I go to church mainly because I enjoy seeing people I know there	1	2	3
12	Prayer is for peace and happiness	1	2	3

Appendix G: Spiritual Involvement and Beliefs Scale

Please answer the following questions by checking your response.		**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1	In the future, science will be able to explain everything.	1	2	3	4	5
2	I can find meaning in times of hardship.	1	2	3	4	5
3	A person can be fulfilled without pursuing an active spiritual life.	1	2	3	4	5
4	I am thankful for all that has happened to me.	1	2	3	4	5
5	Spiritual activities have not helped me become closer to other people.	1	2	3	4	5
6	Some experiences can be understood only through one's spiritual beliefs.	1	2	3	4	5
7	A spiritual force influences the events in my life.	1	2	3	4	5
8	My life has a purpose	1	2	3	4	5
9	Prayers do not really change what happens	1	2	3	4	5
10	Participating in spiritual activities helps me forgive other people	1	2	3	4	5
11	My spiritual beliefs continue to evolve	1	2	3	4	5
12	I believe there is a power greater than myself	1	2	3	4	5
13	I probably will not re-examine my spiritual beliefs	1	2	3	4	5
14	My spiritual life fulfils me in ways that material possessions do not	1	2	3	4	5
15	Spiritual activities have not helped me develop my identity	1	2	3	4	5
16	Meditation does not help me feel more in touch with my inner spirit	1	2	3	4	5
17	I have a personal relationship with a power greater than myself	1	2	3	4	5

18	I have felt pressured to accept spiritual beliefs that I do not agree with	1	2	3	4	5
19	Spiritual activities help me draw closer to a power greater than myself	1	2	3	4	5
Please indicate how often you do the following:		**Always**	**Usually**	**Sometimes**	**Rarely**	**Never**
20	When I wrong someone, I make an effort to apologise.	1	2	3	4	5
21	When I am ashamed of something I have done, I tell	1	2	3	4	5
22	I solve my problems without using spiritual resources.	1	2	3	4	5
23	I examine my actions to see if they reflect my values.	1	2	3	4	5
Please indicate how often you do the following:		**10 or more times**	**7-9 times**	**4-6 times**	**1-3 times**	**0 times**
24	During the last WEEK, I prayed. . . (check one)	1	2	3	4	5
25	During the last WEEK, I meditated...(check one)	1	2	3	4	5
		more than 15 times	**11-15 times**	**6-10 times**	**1-5 times**	**0 times**
26	Last MONTH, I participated in spiritual activities with at least one other person... (check one)	1	2	3	4	5

Appendix H: Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

		Very Strongly Disagree	**Strongly Disagree**	**Mildly Disagree**	**Neutral**	**Mildly Agree**	**Strongly Agree**	**Very Strongly Agree**
1	There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
3	My family really tries to help me.	1	2	3	4	5	6	7
4	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7
5	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6	My friends really try to help me.	1	2	3	4	5	6	7
7	I can count on my friends when things go wrong.	1	2	3	4	5	6	7
8	I can talk about my problems with my family.	1	2	3	4	5	6	7
9	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7

10	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11	My family is willing to help me make decisions.	1	2	3	4	5	6	7
12	I can talk about my problems with my friends.	1	2	3	4	5	6	7