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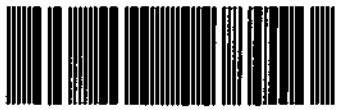

Running head: DEATH ANXIETY RESILIENCE

RESILIENCE AGAINST DEATH ANXIETY IN RELATIONSHIP TO POST-TRAUMATIC STRESS DISORDER AND PSYCHIATRIC CO-MORBIDITY

by

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Abstract

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Resilience against death anxiety in relationship to post-traumatic stress disorder and psychiatric co-morbidity

Research was conducted examining death anxiety from existential, psychodynamic, cognitive and sociological perspectives. The intent was to consider the role of death anxiety on well-being; four studies were conducted to examine how death anxiety influenced PTSD and mental health among people who have experienced a life-threatening event. These studies were conducted using undergraduate university students in Lithuania. The first study used a mixed-method design and in phase 1, participants (N=97) completed self-report questionnaires that gathered information on demographics, death anxiety, trauma and well-being. Results indicated a significant correlation between death anxiety and PTSD, but not psychiatric co-morbidity. Phase 2 attempted to further explore the phenomenological experience of participants with full PTSD, and 6 semi-structured interviews were conducted. IPA analysis found three major themes in response to the life-threatening event; self-efficacy, religious coping and existential attitude. Subsequent studies were then conducted to understand these themes as possible factors of death anxiety resilience in regards to life-threatening events. The second study (N=109) examined the role of self-efficacy and found that it was significantly related to death anxiety and psychiatric co-morbidity, but not PTSD. The third study (N=104) examined religious coping, but did not find evidence to support its significance; however again self-efficacy emerged as significantly related to psychiatric co-morbidity and death anxiety. The fourth study (N=110) looked at the role of existential attitude via posttraumatic growth and sense of coherence. Although posttraumatic growth did influence PTSD, existential attitude was not a significant factor for death anxiety or outcomes. However, self-efficacy again emerged as related to death anxiety and psychiatric co-morbidity. In studies two to four, self-efficacy did not act as a mediating factor and was independently related to death anxiety and psychiatric co-morbidity. Results were discussed in light of theories regarding death anxiety and their application to clinical treatment.

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Mark Hoelterhoff

Author's declaration

At no time during the registration for the degree of Doctor of Philosophy has this author been registered for any other University award without prior agreement of the Graduate Committee. This study was financed with the aid of a studentship from the Faculty of Science. Relevant seminars and conferences were regularly attended; in addition portions of this research inspired the following scholarly output.

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CHAPTER ONE

Daniel Defoe (1726) humorously suggested that the two certain things in life are death and taxes. Death is a fundamental part of existence and yet our experience of it remains somewhat difficult to conceptualise. Life and death are the predominant forces in determining behaviour for the survival of organisms. The paramount idea of evolutionary theory, "fight or flight", is the essential survival mechanism for human beings because this stress response helps determine the seriousness of a threat. Humans have hard wired fears rooted in the amygdale such as fear of heights, dark places, loud noises and certain animals (LeDoux, 1998). However humans also have a fear of death itself which requires deeper analysis, most likely rooted in the prefrontal cortex (Greenberg, Koole & Pyszczynski, 2004). These processes result in biological and psychological alteration by the human being.

However, humans have the unique attribute of self awareness. Self-preservation beyond just day-to-day survival is an absurd concept without awareness. When dangers are identified, our awareness recognizes that we are the ones who are in danger. This result of conscious awareness links dangerous threats to the risk of losing one's life, furthering the likelihood of survival. This self-awareness of one's own danger transcends beyond everyday survival. That is, we are also aware of our own mortality, which at the same time creates a consistent source of anxiety for us. Research shows that even mundane exposure to death prompts is sufficient to trigger death anxiety (Greenberg, Koole & Pyszczynski, 2004). Such death anxiety sets the basis for this thesis.

In this chapter death anxiety will be examined from several frameworks in an attempt to understand it better. The frameworks will be based on existential, Freudian, cognitive-behavioural, Becker's sociological perspective and Terror management theory. These perspectives were chosen not only because they address death anxiety, but they also provide an important range of perspectives.

Existential perspective

Death has been the topic of speculation for both artists and scientists alike throughout human history. Awareness and subsequent anxiety surrounding death has been of particular interest to both existential philosophical and psychological investigators. Existential philosophy is concerned mostly with our state of being as humans. Therefore, an important concern for existentialists is to reflect on how humans perceive a state of non-being. Existentialism would suggest that human beings must face their own mortality if they wish to live fully. One such existential philosopher, Martin Heidegger, addresses the existential need in his book *Being and Time* (1962). Heidegger (1962) insists that one can only have an authentic existence when temporality is confronted. This unique human awareness is an understanding that the very nature of being is finite and temporal. As Heidegger (1962) said: "As soon as man comes to life, he is at once old enough to die" (p.289).

Heidegger asserts that this awareness of death allows for a more meaningful existence. He insists that those who would deny and avoid death due to fear and insecurity live inauthentically. He refers to this type of inauthentic existence as they-self , which is a being influenced by the crowd rather than its potential (Craig, 2009; Heidegger). There are difficulties that exist with authenticity, namely the paradox of being authentic while equally being in the world (Craig, 2009). In contrast to authenticity, Heidegger speaks of indifference towards death as a tranquilisation that helps to avoid facing the inevitability of death (Heidegger, 1962). Heidegger refuses this as an authentic existence, and instead endorses courage to face death, thus allowing freedom from the anxiety death can produce. In some sense, Heidegger would embrace death anxiety as a normal part of meaningful existence. While death is the threat on non-existence, it's that realisation that

provides grounding for meaningful existence. One that does not find meaning in this dynamic is under threat from being defined by that fear of death. In this vein, facing death allows people to be alive. Death anxiety is part of normal existence when it is an impetus for individuals to live fully. However, denying death may only serve to cause underlying death anxiety to persist, and encourage people to live in inauthentic ways. Heidegger's philosophy provides a framework for understanding death anxiety as an opportunity for meaningful authentic existence (Gelven, 1970; Tomer, 1994).

A foundational philosopher in existential thought is Søren Kierkegaard. Kierkegaard describes the self-awareness of existence as an opportunity for both joy and fear. Awareness of life and death can then serve as motivation to pursue potentialities and create an uplifting sense of joy; yet, additionally, it can fill an individual with a concurrent realisation that all things must come to an end (Kierkegaard, 1973).

The duality to life and death presents an existential crisis in that people are driven to fulfil their potentialities when facing up to the awareness that their existence is finite, i.e. their own death. Being able to fulfil one's potentialities creates a great sense of joy, while continuous awareness of one's mortality creates terror and, indeed, death anxiety. Death anxiety then would be touching upon awareness of mortality alongside one's struggle not to pass up the opportunity to embrace life fully, i.e. live a life by fulfilling one's potentialities. Thus, avoiding the potential dread and terror of life and death anxiety is to rob oneself of the advantages of a joyful life. Kierkegaard's ideas lead to the conclusion that if one is unwilling to embrace both the joy of life along with the terror of death, that life is not being lived authentically. Much like Heidegger, Kierkegaard calls people to a life of authentic existence. What emerges, then, is a picture of death anxiety as an opportunity for that kind of authenticity, but also an opportunity for inauthenticity.

The existential philosophical concept of death anxiety has created a theoretical framework for existential psychologists like Irving Yalom. Yalom (2008) suggests that

death anxiety is a fundamental cause to psychopathology. Drawing from existential philosophy, Yalom proposes a direct link to an awareness of death, and its subsequent fear, to the development of mental health difficulties. Indeed, existentialist Sartre concludes that death limits one's ability to self-actualise, however one who understands his/her meaning in life will be less anxious about death (Sartre, 1943). Yalom admonishes psychologists to understand this link between death and mental health difficulties, as it provides a framework for developing clinical interventions. Keeping this link in mind clinically, in order to reduce the damage of death anxiety, people must confront death directly. Irving Yalom writes:

> Self-awareness is a supreme gift, a treasure as precious as life. This is what makes us human. But it comes with a costly price: the wound of mortality. Our existence is forever shadowed by the knowledge that we will grow, blossom, and, inevitably, diminish and die. (Yalom, 2008, pg 2)

This "wound of mortality" must then create a conscious state of fear about one's own demise. Yalom (2008) proposes that death anxiety develops across the lifespan, even at an early age. For example, when confronted with death, parents may try to shield their children from the reality of death and protect them from death anxiety using euphemistic language such as "grandpa is sleeping now".

Yalom makes an interesting suggestion that death anxiety not only exists in the realm of adulthood, but is a problem throughout human lifespan. Could death anxiety start at such an early age? In a 1969 study, Bowlby (2005) states that human infants see their physiological and psychological needs as a matter of life or death. Parental intervention is necessary to meet the infant's needs and avoid death; consequently, the infant is prone to anxiety regarding dependence on parental care. According to Bowlby (2005), this anxiety surrounding life and death survival based on parental action provides the motivation for attachment. Is this perhaps the basis from which death anxiety is derived as theorised by Yalom?

If death anxiety is a necessary step in the developmental process, Yalom (2008) fears that adolescents may engage in risk-taking behaviours to deal with an underlying death anxiety that has not been properly dealt with. The problem is compounded by the well-intentioned efforts of their parents to help them avoid the topic of death (Yalom, 2008). This avoidance of death which develops in childhood continues through adolescence and into adulthood, creating a life-long pattern of avoiding death anxiety. Yalom (2008) hypothesises that in adulthood, death anxiety often manifests in relational struggles and maladaptive behaviours. One could speculate that an individual who faces life threatening events, and then is unable to face the issue of death, may experience significant psychological and social problems. This idea is corroborated by research such as Port, Engdahl, Frazier and Eberly (2004) which found that death acceptance was significantly related to PTSD symptomology more so than negative life events. In other words, as Yalom is saying, facing death is more important than the external factors in a person's life. If this is true, many of the mental health issues that clinicians observe, while there is no apparent link to death anxiety, actually stem from a deep-rooted life-long pattern of avoiding death, rather than confronting it directly. Yalom creates a framework for understanding psychopathology which has death anxiety at the centre of well-being. How people face death anxiety is the avenue towards mental health or mental difficulties. This perspective of death anxiety as an opportunity for meaningful existence, as believed by Heidegger, Kierkegaard and Yalom, is the essential lynch pin in the existentialists' view.

Existentialism asserts that death anxiety exists and, in the perspective of Yalom, that death anxiety is related to overall mental health (Adams, 2010; Godley, 1995). However, it also touches upon the ability for a person to shift between two levels of awareness. Firstly, there is a subconscious level of awareness to which an individual feels the angst of death anxiety, yet chooses to avoid it. The second is a conscious level providing the opportunity to directly face death anxiety, allowing the potential of becoming

authentic and avoiding mental health difficulties. Death anxiety's existence, its relation to mental health functioning, and an ability to oscillate between two levels of awareness, are fundamental in creating a working and testable model.

Freudian perspective on death anxiety

Yalom's model of psychopathology as a result of death anxiety begs the question whether fears about one's mortality are truly a fundamental dilemma within the human condition? This existentialist perspective of death anxiety as a source of pathology is not shared by all. From a psychoanalytic orientation, death anxiety is not a causal factor of psychopathology, but a symptom of it. Sigmund Freud (1953) does not take the same perspective on death anxiety; in his view, the unconscious is not concerned with death because it's not something that has been subjectively experienced:

> Our own death is indeed quite unimaginable, and whenever we make the attempt to imagine it we really survive as spectators. At bottom nobody believes in his own death, or to put the same thing in a different way, in the unconscious every one of us is convinced of his own immortality. (pp. 304–305).

In addition, the ultimate source of psychopathology in Freudian theory is unconscious conflict. Therefore, death anxiety must not be a fundamental etiological force as it is not a primary concern of the unconscious. Instead, Freud (1953) saw death anxiety as a defence mechanism implemented to deal with unconscious conflicts. Freud (1953) did agree that patients do manifest a fear of death, which he labelled thanatophobia. However, although this death anxiety is observed and reported by patients, the actual fear of death is merely a coping mechanism for some other unconscious concern (Howarth, 2001).

Ergo, from Freud's perspective, death anxiety is not a precursor to psychopathology, but a symptom of unconscious conflict. Clinically speaking, death

anxiety is a symptom in which an underlying conflict is created. For example, a patient reports a fear of dying and requests treatment for said problem. Yet after further psychoanalysis, it is revealed that this death anxiety is not really about death at all. Instead, this patient is actually struggling with the pain of losing a spouse in a divorce. The "death" is actually the end of a relationship and, in this example, a fear of death is a defence mechanism for a fear of abandonment (Howarth, 2001). So, from the Freudian perspective, consciously experiencing death anxiety is much more manageable for the patient that delving into the unconscious source of distress: a failed marriage. Freud provides a working model of death anxiety (albeit hard to falsify) that is quite damning to Yalom's reliance on death anxiety as an etiological framework for psychiatric co-morbidity. Death anxiety is not the cause, but merely a symptom, of psychopathology.

This symptom versus cause dilemma is theoretically difficult to resolve either way. But these viewpoints are reflective of the theoretical orientations of the psychoanalytic and existential perspectives. An existentialist could counter that, in the above case, the marriage failed because the person was not willing to live authentically. By definition, living authentically means facing death anxiety to better embrace life and meaning. Therefore, in some sense, the divorce is a symptom of death anxiety. At this point, there is no clear theoretical justification for either perspective; however, this thesis will explore some studies that have attempted to identify the role of death anxiety, regardless of the direction.

As with existentialism, Freudian theory acknowledges that death anxiety exists albeit linked to an unconscious conflict. Therefore, whether it's conscious or not, death anxiety is related to psychological difficulties. This affirms the second important aspect of death anxiety as being linked to mental health status. Thirdly, it recognises the ability for a person to shift between two levels of awareness. In fact, early research into death anxiety was done primarily through projective measure attempting to capture this unconscious experience (Feifel, 1956, 1959). A patient thus oscillates in their awareness of death

anxiety. So, along with existentialism, the Freudian perspective also supports death anxiety's existence, relation to mental health and ability to oscillate between two levels of awareness.

Death anxiety from a cognitive-behavioural approach

To add to the existentialist and psychoanalytic viewpoints, it is important to include the cognitive-behavioural perspective on death anxiety. This view is fundamentally based on the idea that death anxiety is wholly integrated with beliefs about oneself (Kelly, 1955; Reimer, 2007). For example, personal construct theory states that in regards to death anxiety, the extent to which death is able to be understood and lie outside existing belief structures ultimately influences the level of death anxiety (Robinson & Wood, 1984). Some within the cognitive-behavioural framework have examined death anxiety as within the category of, or in close proximity to, health anxiety (Furer & Walker, 2008). It is a problematic response to issues of health and well-being. Death anxiety is understood as a normal experience, similar to any other type of anxiety (Furer & Walker, 2008). However, death anxiety becomes maladaptive when it interferes with normal functioning. The cognitive perspective would then focus on effective coping with death; managing the emotions of fear about death and dying (Furer & Walker, 2008). For example, avoidance of death-related activities, such as funerals and hospitals, as well as avoiding planning for the future, could potentially become a complicated and intrusive force in one's life. If avoidance of situations related to one's fear of death become significant and disabling, death anxiety now becomes an issue of psychopathology (Furer & Walker, 2008). The cognitive fear of death is present in many health-related issues, akin to other aspects of anxiety (Furer & Walker, 2008). The cognitive perspective sees death anxiety within a broader spectrum of health anxiety and, in fact, can be treated clinically as such. For example, Furer and Walker (2008) suggest clinical treatment that includes exposure to

death themes, reduction of safety behaviours, cognitive reappraisal, life goal focus and relapse prevention as methods of effectively coping with death. This model of death anxiety as a form of health anxiety becomes more manageable without having the major existential crisis. In other words, death anxiety is a factor of health-related issues, not a preeminent condition of human nature.

Does this theory diminish the foundational existential nature of death anxiety as the source of mental health problems? One could argue that death anxiety simply becomes an aspect of health anxiety. Conversely, one could debate that health anxiety is really an aspect of worrying about issues of mortality. If death anxiety is common in individuals with hypochondriasis, fear of death and dying may be the central reason as to why people experience concerns related to health problems (Furer & Walker, 2008). The cognitive behavioural perspective adds insight into the relationship of death anxiety to anxiety as a whole. For example, worry about mortality becomes an integral aspect of the broader diagnoses of generalised anxiety disorder (GAD) and panic disorder. Furer, Walker, Chartier and Stein (1997) found patients with panic disorder reported significantly higher anxiety about death than did patients with a diagnosis of social anxiety disorder. Starcevic, Fallon, Uhlenhuth and Pathak (1994) found that patients with GAD had concerns for both their own death and/or the death of a family member. Clients suffering from posttraumatic stress disorder (PTSD) as a whole tend to have high concern for safety and health. Studies have shown a positive relationship between posttraumatic stress and death anxiety (Chung et al., 2000; Martz, 2004). From a cognitive perspective, underlying many anxiety disorders is a basic sense of worry; this worry can thus manifest itself in death anxiety. This idea is somewhat similar to the Freudian idea that death anxiety is related to unconscious anxiety. However, instead of seeing death anxiety as a defence mechanism, death anxiety is uniquely defined within a broader spectrum of anxiety themes.

The cognitive perspective has clinical implications in the treatment of death anxiety. There is very little research on the controlled treatment of death anxiety per se, however, attempts have been made in the treatment of health anxieties. For example Hiebert, Furer and Walker (2005) examined cognitive behavioural therapy (CBT) with a clinical population of patients with hypochandriasis. Death concerns were addressed via exposure to situations in an attempt to increase acceptance of the reality of death (Hiebert, Furer, McPhail, & Walker, 2005). The final analysis of the CBT interventions showed a significant decrease in death anxiety and hypochondriacal symptoms for the CBT group condition (Heibertet al., 2005; Furer & Walker, 2008). If death anxiety has become maladaptive, it could be seen as an important clinical issue to address. Furer and Walker (2008) describe avoidance as one of the biggest problems with death anxiety. Therefore, controlled exposure to death-related situations may provide a useful treatment option. This type of approach within CBT is reflective of the cognitive perspective that death anxiety is ultimately a form of health anxiety, or perhaps more generally, an aspect of overall anxiety, and thus should be treatable in the same way as other anxiety issues.

Models of death anxiety as defined by existential, Freudian, and cognitive-behavioural theories, all agree that death anxiety does, in fact, exist. The cognitive-behavioural perspective likens death anxiety to health anxiety, however, identifies the idea as a real phenomenon. In addition, this perspective supports the relationship between death anxiety and mental health in that death anxiety can become maladaptive and in need of clinical management. The cognitive-behavioural approach also describes the necessity of moving between levels of awareness to address this anxiety. In treatment, individuals are encouraged to be aware and in control of their own death anxiety; a view that one can oscillate in their awareness of death anxiety.

Sociological perspective

Ernest Becker (1973) describes the fundamental problem of death anxiety from an existential viewpoint, but with an application to sociological issues, in his book *The Denial of Death.* Becker reaffirms the existential perspective of death by acknowledging death anxiety as a real phenomenon. He explores possible applications of death anxiety by providing a sociological framework for how a human actively denies death. Becker asserts death anxiety is an enduring sense of concern for human beings in everyday life, and attempts to connect a variety of fears (e.g. terrorism, illness) to an underlying fear of death (Becker, 1973). Becker would counter the psychoanalytic perspective and identify death anxiety as a precursor to psychological and sociological dysfunction, rather than a symptom. In his words,

> To live a whole lifetime with the fate of death haunting one's dreams and even the most sun filled days-that's something else...I believe that those who speculate that a full apprehension of man's condition would drive him insane are right. (Becker, 1973, p. 27)

Becker theorises that people transform their underlying death anxiety into smaller more manageable fears. In addition, people use daily rituals and behaviours in an attempt to control and deny death (Becker, 1973). Yet these fragile attempts ultimately do not control death anxiety; especially when people are reminded of their own mortality as a result of tragedy and overt events. It is virtually impossible to avoid death completely; therefore, these reminders are present and frequent. If the need to deny death is crucial and yet there are reminders of death in everyday life, how, then, can people cope with the potentially ever-present death anxiety?

From a sociological perspective, Becker suggests that human beings need larger and more powerful systems that help maintain a consistent denial of death. He states that society and its institutions serve to strengthen an individual's own defence against death anxiety (Becker, 1973). An anthropological investigation into belief systems and ritualistic practices identifies tools that help members of a society deny their own mortality. Keeping

with the existentialist proposition, these larger frameworks function to reduce death anxiety in its individual members. Society's ritualistic behaviours provide an outlet for death anxiety that would alternatively cause significant impairment for the individual. One such example is religion; a system of ritualistic activities that reinforce the idea that death is not final. Whether it's the Christian belief in heaven or the Hindu idea of reincarnation, many religious systems exist to tell their followers that the will live on in some way. Is this, then, a delusion that helps people with their death anxiety? Further examination of many cultural frameworks would demonstrate a marriage of societal and individual attempts to deny death and allow humans to live in a delusion that death is not real.

Becker expands upon the following mechanisms that allow people to maintain sanity in the face of death: the religious, the romantic and the creative (Becker, 1973). As mentioned earlier, religion is a human device that invents a deity who will not only protect people, but will free them from death itself. In the face of great suffering, humanity has created God or gods as a personification of being saved from death (Becker, 1973). Becker also suggested that religious mechanisms for denying death are not as prevalent as they once were historically due to an increasingly secular society. Secondly, Becker presents the romantic solution as a mechanism for coping with death anxiety. Romantic expressions in literature, music and cinema promote "love" as an enduring feature that is eternal and, much like religion has the power to save. Becker (1973) talks of love becoming the central solution to all of humanity's problems because it is a useful defence mechanism. Finally, Becker proposes the creative solution as a means to eternity. Whether it's a piece of art or literature, or perhaps an invention, a product that reflects the creator's persona can last longer than the individual. Therefore, the creation itself allows a sense of immortality (Becker, 1973). In this digital age, the ability to leave a presence behind is even more prevalent. On-line resources, such as Facebook, now have profile pages for people that have died. Their Facebook accounts are memorialised to allow the

now-deceased user to carry on indefinitely (Kelly, 2009). Despite the unique social commentary, this concept that creation allows one to live beyond the grave is Becker's (1973) final mechanism for denying death. Becker has identified these three ways in which humanity tries to deny its own mortality, however, these are merely illusions of immortality.

In terms of mental health, Becker suggests that those who struggle with mental health issues have fewer defences against death anxiety than the typically functioning population (Becker, 1973). Higher functioning individuals usually do not suffer the same maladies, due to a better ability to keep their fear of death from overwhelming them. This may indicate that deluding one's self from facing one's own death may actually serve a functional purpose. On the surface, societal tools for managing death may provide a protective factor. Becker affirms this, and yet asks whether we would be better served by acknowledging death and dealing with it in a more direct manner. Becker's ideas about death anxiety have inspired the development of psychological theories, and research has been carried out to test the role of death anxiety in cognition and behaviour.

Although originally seen as contrary to Freud's ideas on death anxiety, Firestone and Catlett (2009) expand Becker's assertion within a psychoanalytic perspective, stating that denying the inevitability of death results in neuroticism. In line with classic Freudian defence mechanisms, death anxiety is a form of denial and can be overcome (Firestone & Catlett, 2009). Therefore death anxiety, as in any other dysfunction, is a defence mechanism that can be overcome within the context of therapy. It is important to note then that death anxiety can be defined as a dysfunction that must be overcome, not a state of existential being that one must accept. This psychoanalytic focus on death anxiety as a defence against overall anxiety is contrary to the existentialists' perspective. Existentialism, such as Kierkegaard's, suggests that angst is not the same as Freud's view of anxiety because it is an apprehension of the unknown (Kierkegaard, 2008). This existential angst precedes choice or perhaps, in the case of Freudian terminology,

defence. Regardless, whether exploring a Freudian concept or existential concept of death anxiety, one must conclude that a relationship between death anxiety and well-being exists.

Returning to a sociological framework, Becker identifies the existence of death anxiety, and also demonstrates its relationship to mental health functioning. Becker suggests that death anxiety fully reflected could cause mental health difficulties. However, in Becker's perspective, denying death anxiety, and thus ignoring, may also prove detrimental. This again suggests that an individual has the ability to oscillate in his/her awareness of death anxiety. Therefore, Becker's sociological standpoint also confirms the three basic aspects (existence, relationship to mental heath, and levels of awareness) of death anxiety.

Terror Management Theory

A significant contribution to the psychology of death anxiety, based in part on Becker's ideas, is Terror Management Theory (TMT). Becker and TMT share the belief that "positive illusions" help to minimize death anxiety (Taylor, 1983; Taylor & Brown, 1988; Collins, Skokan & Aspinwall, 1989; Greenberg, Solomon, Pyszynski, 1997). TMT assumes that self-awareness of one's own mortality can be a source of existential anxiety. Based on Becker's (1973) ideas, worldview and beliefs can act as a buffer to death anxiety. Two perspectives have emerged from TMT research: the mortality salience hypothesis and the anxiety-buffer hypothesis (Greenberg, Pyszczynski, Rosenblatt, Veeder, & Kirkland, 1990). The mortality salience hypothesis states that cultural worldviews provide a buffer from death anxiety, and that death prompts will increase the need of individuals to strengthen their own worldview. The anxiety-buffer hypothesis argues that self-esteem is the primary buffer which serves to protect humans from death anxiety and to deny mortality (Schimel, Hayes, Williams & Jahrig 2007)

Focusing on the mortality salience hypothesis, research has examined death anxiety and its subsequent effect on the human condition in the form of nationalism. Ochs, Mann and Mathy (1994) found that following an exposure to death thought, German participants sat closer to a German confederate and further away from a Turkish confederate. This line of research within TMT appears to show an interesting connection between death anxiety and nationalism, or perhaps more specifically, a within-group bias as a means to survival. In other words, when faced with reminders of mortality, human beings will favour and draw closer to their own kind; whether this is a coping skill or an explanatory cause of local and global conflict is yet to be fully determined. However, these studies showing the relationship between culture and fear of death provide a compelling argument as to the personal and sociological effects of death awareness.

It is noteworthy to point out that there is a reciprocal process in that when one's nationalism is criticised, death anxiety increases. This would imply that any challenge to worldview would increase the access to thoughts of death. Schimel et al. (2007) conducted research testing death thought accessibility and showed threatening nationalist perspectives increased thoughts of death (Schimel, et al. 2007). This study also showed that death thought accessibility could remain low if these threats to nationalist perspectives were dismissible. Yet when the worldview was challenged with more compelling evidence, there were higher levels of death thought accessibility (Schimel, et al. 2007). Therefore, when people's cognitive frameworks are challenged with conflicting evidence, the result is great access to thoughts of death.

Turning to the anxiety-buffer hypothesis, self-esteem serves as a buffer against death anxiety and denying mortality. In this view, self-esteem is fundamentally a sense of contribution to something bigger than oneself. Robertson, Jay and Welch (1997) suggests that by contributing to something larger and infinite, it allows the individual to feel immortal and thus reduces death anxiety. Self-esteem is then directly related to the individual's

sense of investment into something beyond a finite life. Robertson, et al. (1997) suggest people may choose to see this contribution as living in the memory of their families or even biological continuity through genetics. Alternatively, they may gain this self-esteem through their own creative work and material contributions to society, such as literature or art. This is similar to Becker's concept of creation as a way of denying death; however, the focus is on the self-esteem derived from creation that serves at the actual mechanism for denying death.

TMT is deeply rooted in the existentialist's framework because of the importance it places on existentially motivated processes in human behaviour. If TMT theory is to be summarised, it suggests death anxiety is a distal causal factor for a variety of socially significant motives, in particular those that centre on meaning (e.g. religion & politics) (Greenberg, Koole & Pyszczynski, 2004). It provides a framework that posits the juxtaposition of instinctive self-preservation with the cognitive capacity to be aware of one's own death; this awareness creates death anxiety which can be overwhelming and paralyzing when it is insufficiently managed by cultural beliefs and a rigid sense of symbolic value (Greenberg, et al,, 2004). TMT warns that when the death anxiety buffers are enacted to provide some sense of immortality, they can become problematic socially (Greenberg et al. 2004).

TMT also identifies the existence of death anxiety and does, in fact, show a relationship to mental health difficulties (Greenberg et al. 2004; Tomer, Eliason, & Wong, 2008; Weems, Costa, Dehon & Berman, 2004). TMT addresses general existential anxiety, which is then correlated with both anxiety and depression (Weems et al. 2004). In addition, TMT indicates differing levels of awareness, in their terminology salience of mortality, indicating that death anxiety is subject to different states of awareness (Weems et al. 2004). TMT, therefore, also recognises the three basic factors of death anxiety identified by all of the prior theories, including identification of the existence of death

anxiety, its relation to mental health impairment and identification of different levels of awareness.

Summary

The need for self-preservation creates a necessary avoidance of death. Yet the human capacity for self-awareness creates a sense of anxiety surrounding death. Death anxiety seen from an existential perspective is an opportunity for authentic growth, while also potentially causing mental health difficulties. The Freudian perspective indeed confirms a relationship between death anxiety and mental health functioning, albeit symptomatic of unconscious conflict. Cognitive-behavioural thought would concur that death anxiety is related to the greater umbrella of health anxiety, and its ability to become maladaptive. Becker supports the premise that death anxiety can become destructive both personally and sociologically when it is denied. TMT also shares these concerns and examines the ways in which death anxiety is managed when brought to awareness.

Upon examination of all of these theories, there appears to be agreement on three main points about death anxiety.

1. Death anxiety exists
2. Death anxiety fluctuates within levels of awareness
3. Death anxiety is related to well-being

Using these basic premises about death anxiety, the following chapters will investigate death anxiety further by examining its relationship to well-being in a series of four studies.

CHAPTER TWO

Trauma and death anxiety

Despite the clear differences between the foregoing theories describing death anxiety in Chapter One, they do concur on three crucial issues of death anxiety. Firstly, death anxiety is a type of anxiety that human beings do, in actuality, experience. Secondly, death anxiety can impact one's health and well-being, particularly one's mental health functioning. Thirdly, people seem to oscillate between levels of death awareness. To make the third point more explicit, according to the existentialists, for example, we oscillate between levels of death awareness by living an inauthentic life whereby we avoid or deny the terror of death and switch from time to time to an authentic life whereby we face up to death (i.e. a high level of death awareness) motivating ourselves to pursue potentialities. According to the Freudian approach, we oscillate between levels of death awareness in that we usually experience little terror of death since it is hidden deeply in our unconscious, and yet sometimes find ourselves living with a heightened sense of death terror (although this may actually be a defence mechanism for other painful reasons.) Research has examined both conscious and unconscious levels of death anxiety, yet it has been limited in determining differences between people's level of unconscious death anxiety awareness (Kastenbaum, 2000; Lennon, 1997; Neimeyer, 1997; Tomer, 2000).

The question is whether some people are more prone to death awareness or more sensitive to the notion of death than others? While they may oscillate between levels of death awareness, is it possible that some people tend to dwell on a higher level of death awareness than others? Research shows that, indeed, there are people who are more sensitive to death awareness. For example, traumatic life events have been shown to contribute to greater levels of death anxiety (Florian & Mikulincer, 1997; Florian, Mikulincer & Green, 1993; Tolstikova, Fleming & Chartier, 2005). In other words, following stressful life events, people could develop a hypersensitivity to death anxiety. One could speculate

that this would also bear relevance for people who have developed PTSD following their exposure to traumatic events. After all, trauma is an affront on an organism's desire for survival, sense of self and feeling that the world is safe (Greening, 1990). So at the most basic level, trauma is an attack on life.

Theoretically, this is possible because following a traumatic event people could develop a "traumatic schema" which in turn creates hypersensitivity to death anxiety. Schemas are defined as core assumptions and beliefs that guide people in understanding incoming information (Cahill & Foa, 2007). Traumatic events create information that is incongruent with existing schemas (Cahill & Foa, 2007) or worldview (Janoff-Bulman, 2002). Such information generates intense emotional arousal but cannot be immediately processed at the time of trauma. Iconic representations of this trauma information are stored in memory which cannot easily be assimilated with other stored memories (Brewin et al., 1996). However, people somehow need to integrate and accommodate the new trauma-related information with the old pre-trauma set of information and assimilate it into their schema (Horowitz, 1997; Janoff-Bulman, 2002). This integration requires consistent revision until both sets of information match (Horowitz, 1997). A potential cog in the system is when an individual avoids the trauma-based information, resulting in continued incongruence. However, such incongruence causes a great deal of distress for the people who have experienced the trauma. To prevent emotional exhaustion, people employ an inhibitory mechanism in order to control or regulate the flow of trauma information. If their inhibitory control is weak, people will experience the PTSD symptoms of intrusion (e.g. flashback). If their inhibitory control is too strong, however, they will experience avoidance symptoms (e.g. numbness).

Over time, this process would affect the person to the extent that they develop psychological and neurological hypersensitivity, which becomes an integral part of their psychological processes. These kinds of sensitivities often remain stable over time and

are not easily resolved. These hypersensitized processes can affect other psychological or neurological pathways, leading to the emergence of such psychological reactions as depression and anxiety (Everly, 1995). This hypersensitivity hypothesis echoes the biological memory hypothesis, which holds that our body can somehow memorize the traumatic impact of the life event, which then affects the person's current vulnerability and their biological regulation. The interruption of one's biological regulation would then lead to the manifestation of psychological symptoms (McFarlane & Papay, 1992; Mellman, Randolph, Brawman-Mintzer, Flores & Milanes, 1992; Van der Kolk, Greenberg, Boyd & Krystal, 1985).

The oscillation between the levels of death awareness might be interrupted by the traumatic schema described above in that hypersensitivity embedded within this schema may make death anxiety more prevalent in the experience of a trauma survivor. As a consequence, trauma would likely exacerbate or increase the experience of death anxiety. Individuals who have experienced life threatening events would likely have a heightened sense of death awareness and provide a unique glimpse into death anxiety. In other words, the relationship between PTSD and death anxiety should not be underestimated.

In fact, it has been postulated that death anxiety is manifested in PTSD symptoms, suggesting that death anxiety and PTSD are not two distinct syndromes. Instead, death anxiety is a state phenomenon driven by PTSD symptoms, such as intrusive thoughts on death (Prevost, 1998). Similarly, the two-factor model of death anxiety (Gilliland & Templer, 1986; Lonetto & Templer, 1986) states both general psychological health and life-threatening experiences influence the degree of death anxiety. For the former, people with mental health disorders, such as depression or anxiety, may experience greater degrees of death anxiety. For the latter, people who have experienced life-threatening events may also experience higher death anxiety. Although these two psychological processes are distinctly different from each other, they can be interrelated in that after

exposure to life-threatening events, people may increase the level of death anxiety and develop mental health problems, such as PTSD symptoms, which in turn would further exacerbate death anxiety (Chung, Dennis, Easthope, Werrett, & Farmer, 2005)

The PTSD diagnosis entails experiencing an event involving the threat of death or serious injury and the response to that event involves fear, helplessness and/or horror. In addition, the PTSD diagnosis is relevant when individuals experience persistent symptoms of re-experiencing, avoidance and hyperarousal for more than one month and these symptoms impair their social, occupational or other important areas of functioning (APA, 1994).

The link between death anxiety and PTSD has been documented in previous studies (Barak, Achiron, Rotstein, Elizur & Noy, 1998; Chamberlain, 2008; Edmondson, 2009; Lifton & Olson, 1976; Lonetto & Templer, 1979; Lonetto & Templer, 1986; Martz, 2004; Prevost, 1998; Safren, Gershuny & Hendrickson, 2003). For example, life-threatening events may affect people characterised by their concern for mortality, seeing a dead body or even contracting cancer (Lonetto et al, 1979; 1980). In certain cases, victims of natural disasters manifest death anxiety as evidenced by memories and images of the disaster (Lifton & Olson, 1976). Further research examined whether spinal cord injuries increase death anxiety and in turn affect the development of PTSD. A cross-sectional study found that death denial and awareness significantly predicted PTSD stress reactions for participants with spinal cord injuries (Martz, 2004). Death awareness predicted all three clusters of re-experiencing, avoidance and hyper-arousal while death denial was associated with hyper-arousal (Martz, 2004).

Several studies have looked at the relationship between death anxiety and PTSD following life-threatening illnesses. For example, research revealed that PTSD patients with HIV showed significant association between death anxiety and PTSD symptoms. Death anxiety was associated with the Posttraumatic Diagnostic Scale's (PDS) specific subscales of re-experiencing, avoidance and arousal; in addition, death anxiety was

significantly associated with PTSD severity even after controlling for psychiatric co-morbidity and social support (Gershuny & Hendriksen, 2003). Edmondson (2009) found HIV patients who were reminded of their own mortality in a group of PTSD patients showed the greatest increase in death related thoughts. Safren, Gershuny, & Hendriksen (2003) also found an association between death anxiety and PTSD symptoms in patients with HIV, even after controlling for depression.

Interestingly, one study has demonstrated the link between death anxiety and PTSD following an illness with impending terminal symptoms. Patients who were aware of the future development of mesothelioma related to asbestos exposure did suffer from PTSD. The emergence of PTSD was thought to have been facilitated by the anticipation of death. In other words, according to the researchers, the actual trauma is the knowledge of future death. Death anxiety need not be the result of an immediate trauma (Barak, Archicron, Rotstein, Elizur & Noy, 1998). According to these researchers, the relationship between death anxiety and PTSD reactions should be addressed clinically. Similarly, death anxiety has been shown to be associated with PTSD among people who have experienced trauma indirectly, i.e. secondary trauma. Children of Holocaust survivors tended to have greater scores of death anxiety than a non-clinical population (Baranowski, Young, Johnson-Douglas, Williams-Keeler, & McCarrey, 1998).

While the foregoing studies have established the link between PTSD and death anxiety, other psychological difficulties also play a role. For example, fear of death has been associated with higher levels of anxiety and anxious behaviours (Cox, 1996; Cox, Fuentes, Borger & Taylor, 2001; Florian & Mikulincer, 1993; Strachan, Schimel, Greenberg, Solomon, Pyszcynski & Arndt, 2007). Death anxiety has also been found to be associated with depression in trauma victims (Templer, Lavoie, Chalgujan & Thomas-Dobson, 1990). Among patients with terminal diseases such as cancer and HIV, death anxiety has been associated with depression and anxiety (Hintze, Templer, Cappalletty, &

Federick, 1993; Sinha & Nigan, 1993). In addition to patients with HIV, caregivers also displayed a high level of death anxiety associated with depression (Gular, 1995). Focusing on victims exposed to technological disasters (a train or plane crash), a recent study also shows that death anxiety was associated with psychological problems such as anxiety and depression, as well as the threat perception of the disasters (Chung et al., 2005).

Given the findings of the studies above, one is inclined to think that the greater the severity of PTSD, the greater the level of death anxiety. However, research suggests that this is not the case. Some studies suggest that victims of near death experiences actually have less death anxiety (Gallup & Proctor, 1982). Noyes (1980) found that victims of life-threatening trauma, for example, reported a reduction of death fear; resignation to death was reported to bring peace and tranquillity. Similarly, Thompson, Chung and Rosser (1995) found that victims of PTSD resulting from a boating disaster had reported when they gave up struggling in the water, there was sense of calmness and curiosity towards death. Similarly, PTSD following a technological disaster was not associated with death anxiety either (Chung, Werret, Easthope, Farmer & Chung, 2002). These studies run counter to the idea that death anxiety and PTSD are positively correlated. Survivors are claiming that as a result of these traumatic events, people feel closer and perhaps more comfortable with death (Chung, Chung, & Easthope, 2000).

Similarly, Lucas (1974) examined death anxiety and concluded serious physical illness does not necessarily lead to heightened death anxiety. For example, patients with cancer (Dougherty, Templer & Brown, 1986; Gibbs & Archterberg, 1978) and a life-threatening cardiac arrest experience (Sabom, 1983) reported a lower level of death anxiety. These life threatening experiences do not appear to raise death anxiety, but in some cases alleviate it. Clearly, further studies are needed to help us understand further the controversial relationship between trauma and death anxiety.

It is difficult to ascertain the reason for the above contradictory evidence. This could result from the different measures used in the studies to measure death anxiety (e.g. death anxiety scale vs. multidimensional fear of death scale) or from the different research designs (e.g. clinical interviews vs. cross-sectional surveys) and sample size. The contradictory evidence could also result from the different types of participants investigated in the studies, be they patients with life-threatening illnesses or trauma victims involved in technological disasters. Of course, the contradictory evidence could simply result from the complexity of the relationship between trauma and death anxiety. Perhaps the actual "acceptance" of one's mortality allows the person to move beyond their anxiety.

Despite the controversy, these studies have provided evidence of an emerging relationship between death anxiety and post-traumatic stress disorder symptoms and psychiatric co-morbidity. Yet, as was mentioned earlier, further studies are necessary to help us understand this complex relationship. This thesis will include a series of studies on a chosen population of people who have experienced life-threatening events by examining the relationship between death anxiety, PTSD and psychiatric co-morbidity. As this relationship is examined, other factors will also be taken in account to explore whether they mediate the foregoing relationship. The rationale for considering these variables will be provided.

Study 1

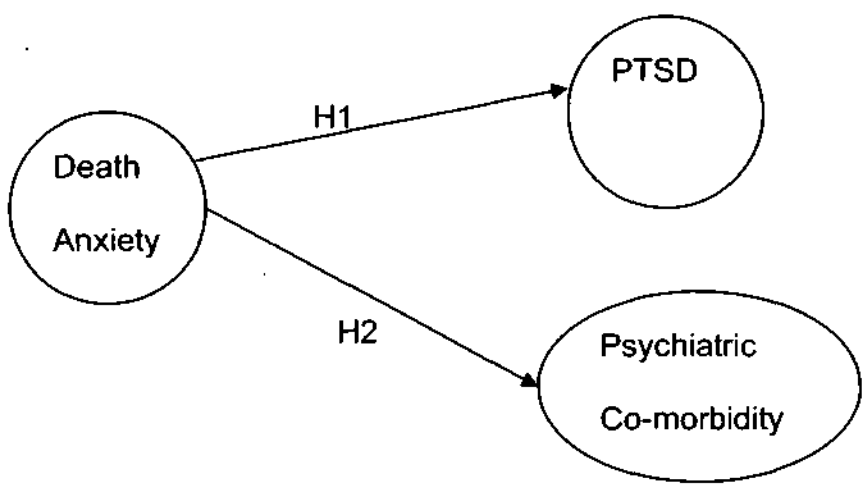
Study 1 adopted a mixed method design with two aims to investigate. First was to verify the previous studies by examining quantitatively whether there was a relationship between death anxiety, PTSD and psychiatric co-morbidity among a group of university students in Lithuania exposed to a whole range of different life-threatening experiences. Although there seems to be strong evidence in literature supporting this link, it's important to revisit this relationship for the following reasons. Firstly, this relationship has not been

investigated among northern and eastern European students. Secondly, if the relationship is not supported, it's worth investigating as to why it is the case among this population given the substantial amount of evidence supporting this relationship. Thirdly, in previous research, each study focuses on one type of trauma (e.g. HIV or plane crash) and this study will include a wide range of life-threatening events and whether the type of life-threatening event is an important factor influencing the relationship. In phase 1 of this study, it was hypothesized that:

1) Death anxiety would be significantly associated with PTSD

2) Death anxiety would be significantly associated with psychiatric co-morbidity.

Figure 1



Notes: H1 & H2 are hypothesis 1 to 2

Using a qualitative approach, the second phase was to explore the subjective experience of participants who had experienced life-threatening events and how they understood death anxiety in relation to the events. The main reason for doing this is that qualitative research exploring this relationship is limited. The findings from the qualitative study should shed light onto the findings of the first aim. Additionally, the voice of the people who have experienced life-threatening events will help inform what factors to consider in subsequent studies.

Phase 1: quantitative investigation

Participants

Ninety seven university students (M=39, F=58) with an average age of 20.17 (SD=2.19) were recruited from a university in Lithuania for the current study. Almost all (96.9%) of the students were single. Over half of them (51.5%) were Lithuanians and the rest were mostly from Northern and Eastern Europe (37.6%). Over half (59.8%) were a lower level year (years 1 and 2) group at the time of the study.

Procedure

Prior to recruitment, significant time was taken to create both Lithuanian and Russian versions of the questionnaires. This was carefully done by developing two translation teams comprised of members of the university translation club. Two teams of 4 students were given as a task translating questionnaires into either Lithuanian or Russian languages. They were supervised directly by this researcher. Upon creation of the questionnaires, they were reviewed by member of the university linguistics department for accuracy. The questionnaires were then back translated into English and compared to the original assessments. This was carried out for both Lithuanian and Russian; the translation and back-translation process, although timely, was necessary to improve the accuracy of representing the original English questionnaires. The questionnaires were available in English, Lithuanian and Russian. Although English is the language of instruction, the researcher intended that participants could choose to take the questionnaires in the language in which they were most comfortable. This was done in an attempt to minimise the effects of language on the overall results.

Prior to participant recruitment, the study was submitted to the university International Review Board for approval. The study was given clearance to be conducted after all ethical and procedural issues were considered. Upon gaining ethics approval,

participants were recruited from social science students during a module lecture with the tutor's permission. To secure credits for that module, students engaged in different academic activities, one of which was to participate in a research project. Students also had the option not to engage in any of these activities.

The informed consent was a standard form explaining the risks/benefits/confidentiality procedures/voluntary nature of the research. The participants were informed that their names would be kept confidential and any identifying information would be removed in subsequent reports. The participants were informed that they were entitled to withdraw from the study at any point during the self-administered survey. In the informed consent, it was made clear that their lack of participation did not have any bearing on the overall mark or status as a student. It should be noted that there was full participation by the students and no one opted for the essay or non-participation. This researcher gave out the self-administered questionnaires during the lecture and was available to participants to clarify unfamiliar terms. Then the student volunteers collected the assessments and returned them to this researcher. After the data collection, this researcher explained the theory being tested as an additional supplement to the module material by coming to the next scheduled lecture and describing the nature of the research and answering any questions.

In this study, the questionnaires consisted of:

1. Participant demographics
2. Posttraumatic Stress Diagnostic Scale (PDS)
3. General Health Questionnaire-28 (GHQ-28)
4. Death Anxiety Scale (DAS)

Participants who indicated at the beginning of the demographic questionnaire that they had never experienced a life-threatening event were assigned to the control group. If

participants answered "no" to having a traumatic event, they were asked to bypass the PDS. They were still asked to complete the assessments on the DAS and the GHQ-28.

Measures

1) Demographics information: Information gathered identified the following characteristics:

- Age
- Gender
- Year level
- Marital status
- National identity

2) The Posttraumatic Stress Diagnostic Scale (PDS) (Foa, 1995) assesses post-traumatic stress disorder symptoms resulting from experiencing a traumatic event, according to DSM-IV criteria. Participants were classified into the following groups: 'no PTSD' (not meeting the diagnostic criteria) and 'full PTSD' (meeting all the symptom criteria for re-experiencing, avoidance and hyperarousal along with helplessness, terror and an impact upon daily function). In part I, certain information was gathered about the trauma itself. Participants are asked to identify whether they have experienced any past life-threatening events including natural disasters, accidents, physical or sexual assault, combat or exposure to a war zone, sudden violent or unexpected death of someone close, and life-threatening injury. Questions were asked on trauma exposure characteristics (if yes); number of events, most severe trauma, how long ago trauma happened, physically injured, someone else injured, was life in danger, someone else's life in danger, feel helpless, feel terrified?

Part II assesses PTSD symptoms resulting from having experienced the most life-threatening experience. It is composed of the 17 questions contained in the DSM-IV

diagnostic criteria and generates three subscales: re-experiencing, avoidance and hyperarousal. Participants were asked to rate the severity of the symptoms according to the rating scale: 0=not at all, 1=once a week or less/once in a while, 2=2 to 4 times a week/half the time, 3=5 or more times a week/almost always. Excellent internal consistency (alpha = 0.97), and test-retest reliability over a 2 to 3 day period (0.96) have been recorded. This is known to be strongly correlated with other measures of PTSD such as the Mississippi Scale (0.93) and the Impact of Event Scale (0.90). This scale has shown good reliability, validity and good agreement with the Structured Clinical Interview for Diagnosis (kappa=0.65, agreement=82%, sensitivity=0.89 and specificity=0.75).

3) The General Health Questionnaire-28 (GHQ-28) (Goldberg & Hillier, 1979) measures general psychological morbidity and global dysfunction. The mean scores of the GHQ-28 were based on the analyses of the rating scale of 1-2-3-4. The questionnaire yields four subscales: somatic problems, anxiety, social dysfunction and depression. The GHQ-28 has shown a sensitivity value of 88% at a specificity of 84.2% and an overall misclassification rate of 14.5%.

4) The Death Anxiety Scale *(DAS)* is self-report instrument for measuring death anxiety which consists of 15 true or false items. Templer's 15 item Death Anxiety Scale, first published in 1970, has been used extensively and has been translated into many different languages. It has been shown to have good reliability and internal consistency (Templar, 1970). The questionnaire has a test-retest reliability of 0.83, and an internal consistency coefficient of 0.73.

Data Analysis Plan

Descriptive statistics were used to describe the demographic information of the participants. T-tests, Chi-Square and multivariate analysis of variance were used to compare the life-threatening event and control groups in terms of the differences of mean and percentage scores. Correlation coefficients including point biserial correlation (r_{pb}) were used to establish the relationship between demographic variables and outcome variables. Point biserial correlation was used when one of the variables in the correlational analysis was dichotomous. Hierarchical Multiple Regression was used to establish the relationship between Death Anxiety and outcome measures.

Examination of the assumptions and diagnostics related to multiple linear analysis was conducted. Due to non-normality, the PDS (avoidance, arousal, and PTSD total score) were reflected and subjected to a square root transformation. In addition, three subscales of the GHQ-28 (somatic, anxiety, social dysfunction) were reflected and subjected to a logarithmic transformation. No outliers were detected during the exploration of diagnostics (Mahalanobis ≥ 3 SD). Following exploration and transformation, assumptions relating to multivariate normality, linearity and homoscedasticity were met. Regression imputation was used in order to address the missing data. Although there are problems with single imputation methods for significant proportions of data, when less than one percent of missing responses are imputed, as in this study, there is little distortion (Schafer & Graham, 2002). In this study, less that 1% of the missing data were imputed.

Results

Before reporting the results, the internal consistency of the items of the PDS, GHQ-28 and DAS were assessed using item alpha reliability. For the PDS the results show good reliability for the three subscales of Re-experiencing (α=0.867), Avoidance (α=0.789) and Arousal (α=0.856). The results also show good reliability for the four subscales of the GHQ-28 (Somatic α=0.764; Anxiety α=0.798; Social Dysfunction α= 0.692; Depression α=0.886). The DAS shows moderately good reliability (α=0.563).

Forty-six (47.4%) participants of the whole sample reported experiencing a life-threatening event and the remaining (52.6%) did not experience a life-threatening event (the control). Out of the life-threatening group, over a third (38%) experienced one event, while over a quarter (26.2%) experienced at least two events. The remaining participants experienced three or more events. Using the diagnostic criteria based on the PDS, 24 people (24.7%) met the diagnostic criteria for full PTSD and equally 24 people (24.7%) did not meet the criteria for PTSD. Table 2.1 shows the demographic information of the PTSD, no-PTSD and the control groups.

Table 2.1 Demographic Details

	PTSD Group		No PTSD Group		Control	
	Mean	SD	Mean	SD	Mean	SD
Age	20.83	2.11	20.83	1.73	19.5	2.27
	N	%	N	%	N	%
Male	11	45.8	10	41.7	18	36.7
Female	13	54.2	14	58.3	31	63.3
Level						
Year 1	7	29.2	9	37.5	27	55.1
Year 2	4	16.7	2	8.3	9	18.4
Year 3	3	12.5	3	12.5	6	12.2
Year 4	10	41.7	10	41.7	7	14.3
Marital Status						
Single	23	95.8	22	91.7	49	100
Married	1	4.2				
Co-habitating			2	8.3		
Country passport from						
Lithuania	13	54.2	16	66.7	21	42.9
Latvia	2	8.3	1	4.2	1	2.0
Belarus	1	4.2	1	4.2	7	14.3
Russia	2	8.3	1	4.2	4	8.2
Ukraine	4	16.7	1	4.2	10	20.4
USA	1	4.2	4	16.7		
Other	1	4.2			6	12.2

There were no significant differences between groups in terms of the proportion of males and females participating in the study (χ^2 =0.58, df=2, ns), marital status (Fisher's exact test χ^2 =3.87, df=2, ns) and ethnicity (χ^2 =3.74, df=2, ns). However, the groups differed in age [F(2,94)=4.59, p<0.05] with the PTSD group being significantly older than the control group (P<0.05). There was also a significant difference between group in the proportion of upper level and lower level students participating in the studies (χ^2 =7.70, df=2, p<0.05).

Comparing the life-threatening groups, on average, the PTSD group experienced more life-threatening events than the no-PTSD group; however there was no significant difference between them (t=1.96, df=32, ns). In addition, the full PSTD group on average experienced the life-threatening event which bothered them the most almost three years ago while the no-PTSD group experienced this event just over four years ago. However, there were no significant differences between groups (t=-1.43, df=32, ns). Turning attention to the individual significant events, the odd ratio calculation shows that the PTSD group were seven times more likely to have attempted suicide than the no- PTSD group (OR=7.14, 95% CI:1.35-37.74).

Table 2.2 Life-threatening event which bothered the most

	PTSD Group		No PTSD Group	
Life threatening events	Number	%	Number	%
Serious accident	3	12.5	6	25
Natural disaster	1	4.1	0	0
Physical assault by family member or someone you know	2	8.3	3	12.5
Physical assault by a stranger	4	16.6	6	25
Sexual assault	2	8.3	1	4.2
Life-threatening illness	2	8.3	4	16.7
Attempted suicide	10	41.6	2	8.4
	Mean	SD	Mean	SD
Onset of the event (in months)	35.20	24.50	51.13	45.46
Number of life-threatening events	2.85	1.82	1.95	1.07

Note: 2 missing data in No PTSD Group

Table 2.3 describes the means and standard deviation of psychiatric co-morbidity and death anxiety of the three groups. The results showed that the three groups did not differ significantly in somatic problems, [$F(2,89)=0.77$, ns], anxiety [$F(2,89)=0.63$, ns] and social dysfunction [$F(2,89)=3.08$, $p=0.051$]. However, they differed significantly in depression [$F(2,89)=3.97$, $p<0.05$]. Post Hoc (LSD) analysis showed that the full PTSD reported a higher severity on depression than the no-PTSD group ($p<0.01$) and the control group ($p<0.05$). In terms of death anxiety, there was no significant difference between groups [$F(2,89)=2.34$, ns]

Table 2.3 Mean scores and standard deviations for GHQ-28 and DAS

	PTSD Group		No PTSD Group		Control	
	Mean	STD	Mean	STD	Mean	STD
GHQ-28						
Somatic	14.65	3.41	13.95	4.15	14.66	3.50
Anxiety	15.69	4.00	12.95	3.37	13.14	3.96
Social Dysfunction	15.17	3.18	14.39	2.16	15.85	3.40
Depression	14.21	5.92	9.91	3.13	11.10	4.21
DAS						
Total	8.00	2.65	6.29	1.94	7.39	2.92

Prior to the regression analysis of establishing the relationship between death anxiety, PTSD and psychiatric co-morbidity, the "victim variables" (i.e. all the demographic variables, the number and type of life-threatening events and time of onset) needed to be controlled for since research shows that they have been related to PTSD outcome (Freidman, Keane & Resick, 2007; Vogt, King & King, 2007). To this end, correlation coefficients were carried out to see which demographic variables were related to outcome. In the regression analysis, the variables that were significantly correlated with outcome were entered into the regression model. Table 4 shows that there were no significant correlations between the demographic variables with outcomes. Therefore these variables were not entered into the regression model (see table 4).

Table 2.4 Correlation coefficients between demographic variables and PTSD & Psychiatric Co-morbidity

	PTSD	Psychiatric Co-morbidity
Age	0.165	-0.093
Gender[a]	0.129	0.033
Year level[a,b]	0.076	-0.122
Marital Status[a,b]	-0.084	0.054
What country is your passport from[a,b]	-0.086	-0.049
Number of life-threatening events	0.164	0.215
Type of life-threatening events [a b]	0.083	-0.031
Onset of life-threatening events	-0.276	-0.006

[a] point biserial correlations (r_{pb})

[b] Dummy variables: year level = lower vs. upper; marital status= single vs. not single; What country is your passport= Lithuania vs. Other; Type of life-threatening event=assault vs. non-assault

Regression results show that death anxiety was significantly associated with re-experiencing [$F(1,40)=8.29$, $p<0.01$] and accounted for 15% of the variance (adjusted R^2 = 0.151). Similarly, death anxiety was significantly associated with avoidance [$F(1,40)=7.54$, $p<0.01$] and accounted for 14% of the variance (adjusted R^2 = 0.138). In addition, death anxiety was significantly associated with arousal [$F(1,40)=14.93$, $p<0.001$] and accounted for 25% of the variance (adjusted R^2 = 0.254). However death anxiety was not associated

with psychiatric co-morbidity [F(1,42)=3.30, ns] and explained only 5% of the variance (adjusted R^2 =0.051). (See table 5)

Table 2.5 Death Anxiety associated with PTSD symptoms and Psychiatric Co-morbidity using hierarchical multiple regression

Death Anxiety			
	B	SE B	B
Re-experiencing	0.155	0.054	0.415*
Avoidance	0.185	0.067	0.398*
Arousal	0.238	0.062	0.521*
Psychiatric Co-morbidity	0.086	0.047	0.270

* p<0.01

Phase 2: Qualitative exploration

Using a qualitative approach, the second aim of this study was to explore the subjective experience of participants who had life-threatening events and how they understood death anxiety in relation to the events. Previous qualitative research exploring this relationship is limited (Sanner, 1994; Tolstikova, Fleming, & Chartier (2005). The findings from the qualitative study should shed light onto the findings of the phase 1. Additionally, giving voice to people with life threatening events can help inform what factors to consider in subsequent studies.

Method

Participants

Six people (3 male, 3 female) were recruited for the study. Selection criteria were as follows:

a) Participant experienced at least 1 life-threatening event
b) Participant from the phase 1 who had had diagnosis of full PTSD
c) Young adults of similar ages
d) Lithuanian nationality
e) Good level of English proficiency as established by university criteria; satisfactory TOEFL score and admission interview assessing English proficiency

Assessment of PTSD was made through the results of the PDS scale in the phase 1. All participants were white with age ranging from 19-21 years old and single. In addition to demographic information, information was gathered on the type of life-threatening event which bothered them the most. See table 6 for more information.

Table 6. Demographic and life-threatening event (LTE) information

Participant	Age	Gender	Year level	How long ago months	LTE description
1	19	M	1	13	Serious accident: Involved in a car accident, went through windshield.
2	19	F	1	15	Life-threatening illness: Underwent emergency surgery for brain cancer
3	20	M	3	36	Serious accident: Witnessed explosion of gas main and emergency response to the victims
4	21	F	2	19	Physical assault by a stranger: attacked in own home during attempted burglary
5	20	F	3	24	Physical assault by a stranger: attacked on street resulting in permanent physical damage
6	21	M	4	28	Life-threatening illness: throat deformity resulting in blocked air passage, often resulting in emergency hospitalisation

In this interview an attempt was made to uncover the participant's experience of death anxiety related to the life-threatening event. Death anxiety is a term used to

conceptualize the fear generated by an awareness that life has been threatened (Abdel-Khalek, 2005). All participants did reflect death awareness and some apprehension generated by the life-threatening event. For example, one participant said:

> I was paralysed in that moment with fear, am I going to die tonight? Even as I talk about it...this attack...I still can feel that horror, it's just so weird that is still alive in there.

During the interviews, participants were asked to describe the life-threatening event. In this description of the event, participants were aware of having feelings of fear and anxiousness about death. They acknowledged feeling scared about almost dying during the traumatic event and saw a connection between death anxiety and said event.

> I flew through the windshield and landed in the field. When I laid there I thought...I thought I passed on. But eventually, you know you're not dead. Sometimes I imagine myself lying there, as if dead. I know I'm alive, but I could have died.

> He had his hand around my neck, I really thought this is it, it's all over. I was so afraid and sometimes I get afraid again, when I imagine that day. Even though I know no one is going to kill me.

Procedure

Following completion of the phase 1 data analysis, it was identified that 48 participants that experienced a life-threatening event, 24 met the diagnostic criteria for full PSTD, and 13 of those 24 were of Lithuanian nationality. They were contacted via e-mail and asked if they would be willing to participate in an interview to further examine their experience of the life-threatening event. Out of those 13, 6 participants were available for interviews, 2 were unavailable and 5 did not respond to the invitation. The participants were offered 20 Litas for their time and paid at the end of the interview. This researcher met with the participants to conduct semi-structured interviews to discuss what the research would involve and allow them to ask any questions. Through both verbal and written notice, participants were reminded that they did not have to take part of this research and if they did not wish to, it wouldn't affect their academic standing in any way. They were informed that they could terminate the interview at any time. Participants were told that all of the information was confidential and no identifying information would be used. All of the 6 participants chose to be interviewed on campus and signed the consent form before the interview. All of the participants were interviewed by this researcher and conducted in English. Interviews were based on a semi-structured schedule which asked general questions of the participants about their experience of the life-threatening events; their subjective understanding of death and if there is a connection between the two. Interviews were audio-taped on digital recorders and transcribed verbatim.

For this study, it was decided that Interpretative Phenomenological Analysis (IPA) should be used. IPA as it is very effective at capturing individual phenomenological experiences. The selection criteria were chosen to support homogeneity, which is in line with qualitative research practice (Smith & Osborn, 2003). The sample size of 6 participants, as supported in current IPA research, is enough to generate valid themes capturing the experiences of the participants. (Smith, 2008; Smith, Flowers & Larkin 2009). This investigation is trying to understand the

frame of reference the participants use to understand their trauma and explores the subjective processes involved in trying to make sense of it. IPA allows exploration of meaning through analysing the statements of participants and eliciting key themes. As with most qualitative procedures, IPA involves a double hermeneutic in that it recognises that the researcher's own experiences and meaning is part of the knowledge exchange. However, this can also be a benefit in that the researcher is also attempting to make sense of how the participant understands trauma (Smith et al., 1999).

After the semi-structured interviews were conducted and recorded, transcripts were created and then read repeatedly in order to first note initial observations and points of interest. Then themes were collected into sub-ordinate themes through interpretation and analysis. These sub-ordinate themes were then examined across participants and clustered according to larger 'super-ordinate' themes, excluding marginal ones. In order to check the validity of the analysis, the participants were contacted and asked to provide feedback. They were given transcripts of their interview and summary of themes. The participants did not offer any contradictory or additional information, but did confirm the themes generated. Some of the transcripts and all the themes were also independently examined by the thesis supervisor, and there was agreement over the themes after some lengthy discussion was held between the supervisor and this researcher. Thus, once participants and supervisor confirmed the analysis, the super-ordinate themes were deemed to be appropriate.

An important note of reflexivity, this researcher acknowledges that certain prejudices as an American from a different cultural background and age to the participants may affect the understanding of results. In addition, as an instructor at the university, a certain power differential and being an insider in this particular academic community could impact the dialogue between this researcher and the participants. Gender difference could have limited the level of vulnerability for female participants and in turn the understanding

from this researcher. Finally, this researcher has also experienced life-threatening events which may have influenced the conclusions due to personal bias and beliefs. Of course, an attempt to minimise these biases were made by having the themes reviewed and confirmed by the participants and by the thesis supervisor

The semi-structured interview consisted of three main questions:

1. Can you describe what happened during the event you indentified in your questionnaire and describe your experience of that event?
2. How do you understand the notion of death and how do you feel about death?
3. Do you see any relationship between your understanding of death and the life-threatening event?

Analysis

Using IPA, three themes from the interviews with participants were identified. Table 7 provides a summary of the super-ordinate and sub-ordinate themes.

Table 2.7 Themes

Super-ordinate themes	Sub-ordinate themes
Self-efficacy	1. Choosing control 2. Rising above the life-threatening event
Religious coping	1. Faith 2. Religious behaviour
Existential attitude	1. Finding meaning in life-threatening events 2. Responsibility to others

1. Super-ordinate theme: Self-efficacy

a. **Sub-ordinate theme: Choosing control**

When participants were asked about their experience of the life threatening event and their understanding of death, some participants revealed that although they were experiencing a great deal of fear and anxiety about death during the event, instead of allowing themselves to be completely engulfed by it, they made a conscious choice that they had to gain control over the extremely stressful situation, as one participant said:

> When the explosion happened, I ran over to help a guy who was hurt. I was scared there would be another explosion, the smell of gas was all...it was everywhere. But this man, his legs were on fire and I put them out. Threw dirt...threw sand on him. I saw <name withheld> helping this woman and I knew we had to stay. I could have died right there. But it's like...in those times you choose. Life is about

> choices...even hard choices. Choose to live you die, care or hate. Choose to be like moral...human.

Another participant also made a conscious choice to himself that he was going to survive and come through this life threatening experience. During the car accident, he recalled telling himself:

> It's just like the bad moment has come. In those moments I still think OK, no, I'm gonna make it, it's gonna be fine, it's always gonna get better. Someone has to create this for themselves.

It has become apparent that through the interview, this desire to gain control over one's situation is a theme that has played out in their lives even after the event. Most participants talked about their desire to gain control and re-direct their energy toward moving beyond the life-threatening event and looking past it. Instead of dwelling on the negative or painful effects resulting from the life threatening event, they tried to rise above it by gaining control over their lives.

b. **Sub-ordinate theme: rising above the life-threatening event, living for the future and creating goals**

Indeed, in the interviews, most participants talked about their desire to rise above the life threatening event and live for the future rather than being static and dwelling on the past hurt or trauma. As one participant said:

> When he...did that (sexual assault) to me, it was...it hurt me. I thought he was going to kill me. But then you wake up from it, it's like a bad dream. But why think of nightmares when you're awake. Think of tomorrow, what I should do, what I want.

One could argue that thinking about the fact that a better future awaits them was one way for them to manage their distress resulting from the life-threatening event. As a result, when most participants spoke about traumatic experiences openly, the language that they used tended not to be about the distress associated with the event but tended to be of optimism and hope i.e. being hopeful about their future.

> I have dreams I have hopes, these bad things can be hurting or pain. But you can't stop dreaming, stop living your dreams.

As participants look forward and live for the future, they were also thinking in terms of seeking future goals. This theme was common across most participants:

> Like, I want to achieve in life. My studies, my past experience, so everything kind for a specific purpose. To find out what I want from life. What I dream about and what I want to achieve.

> When I'm engaging and I've a lot of things on my list that I wanna do that will provide order to my life.

> I have a very individualistic approach to life and what I plan, for example at this time I want to focus on my career goals. For example I always try to have some goal in

> life, a purpose. To think what am I going to do in 1 or 2 years? I need to have some purpose, maybe to know I have some alternatives....always to go somewhere.

There was a sense that they did not want the life threatening event to interfere with their goals in life. This focus on goals and an unwavering commitment to them navigated the aspects of moving beyond traumatic experiences and not to fear them.

> I know the cancer can come back and kill me. So what then to do...wait? I want to finish college and open a business. I can't sit and wait to die. I have too much I want to.,. too much I like to have.

> It goes from... well, it just changes life. Because you have so many things scheduled and then you have this illness, so you have to cancel everything. But those things were important...I don't want to cancel them, so I keep them in my mind.

Accompanying this desire to create and hold onto goals in life, most participants reflected confidence in their ability to fulfil them through intentional action.

> I have my plans or my desires. I know what I want out of life and will make it happen, for just not myself but then with my career and my whole orientation to things.

It is not unreasonable to say that the foregoing themes imply a strong sense of self-efficacy among these participants. Seemingly, they possess a belief in their ability to confront challenges, achieve goals and manage stressful circumstances or effects, such

as death anxiety, resulting from the life-threatening circumstances. They believe in the mastery over life-threatening experiences and self-directed goal behaviour. These ideas reflect some of the characteristics of people with strong self-efficacy.

2) **Super-ordinate theme: Religious coping**

a. Sub-ordinate theme: Faith

When participants were talking about their experience with the life threatening events and/or possible death, another theme that came up frequently was the notion of faith. Some participants reported that faith was an important part of framing the possibility of death following the event, as one participant said:

> If you don't have belief, faith what else do you hang on to?

Furthermore, for some participants, having a strong faith is a way to help them cope with their experience of the life-threatening event.

> There is a saying...I don't know...I don't know what the future holds, but I know who holds the future." My faith is about just forgetting this awful thing that happened to me. Not to worry. I have for what to worry? I have to believe that's its all okay, even when that's hard.

Even for people who were not particularly religious, putting one's faith in a spiritual being was important to them or imperative in terms of helping them cope with the effect of the life-threatening event.

> I think that whatever could happen with this illness, I'll go to a better side. I don't have any ideologies of heaven or hell. I think its many ways God is sort of--- I'm not too religious but I have enormous and wide way of thinking that God is forgiving.

b. Sub-ordinate: Religious behaviour

For most of the participants, having faith was not simply a philosophical idea. Instead, having faith meant initiating intentional action or behaviour. For example, one participant said:

> I know I could have died, but death... I'm not scared. Sometimes when I worry, I need to go to church, um, to talk about it for ten minutes, to share about that a little bit. But I'm not focusing on it, my meaning in life is to follow Jesus and serve him. Through those times [referring to time surrounding the life-threatening event] it was really hard to live. Through those times, believing in God and trying to do his will. That helps me to go through it.

> Death, life...living. For me it's to do good for other people, and not to myself but for other people. And also being a Christian is to give glory to God for all the gifts he has given me and use all them the same for serving other people and for giving glory to him. Everything I have is not mine so I use what I have got.

"Serving" God or giving glory to God by serving others imply both a dynamic and action-oriented response to death anxiety and coping with the life-threatening event. That is, the focus should be on serving him or doing his will rather than dwelling on the life-threatening event and worrying about the possible death. In other words, engaging in such dynamic

and action-oriented response is a form of religious coping, i.e. coping with the effect resulting from the life-threatening event and death anxiety.

Through the interview, it became apparent that faith and religious coping behaviour were not exclusive for people with a religious faith such as Christians. The non-religious participant also desired to have faith, although he was having an ambivalent attitude toward the notion of God as he said:

> I do think about almost dying. I'm an atheist, I don't believe in life after death. But at that moment, I really wish there would be a heaven. Or even if I die, going to other life after death. I wish I could believe in God, but it just goes against my logic.

One could argue that this is not surprising since life-threatening events could heighten one's awareness of divine providence and God's existence.

> When it happened, I thought where God is? Why did he make this happen?

> Bad things happened to everybody, as I am not righteous, but it doesn't matter…I know that these things just happened…it's not God's fault.

3) Super-ordinate theme: Existential attitude

a. Sub-ordinate theme: finding meaning in life-threatening events

When participants talked about their experience with life threatening event and the notion of death, in addition to spiritual issues, participants also talked about existential issues. The word "existential" implies someone in "existence", someone "existing," living for the present, the here and now, as one participant said:

> I'm gonna enjoy every moment. Every time I talk to someone now... I know that I'm gonna remember this moment, I'm gonna record it in my memory. Since that happened, I have started to appreciate things more.

As they live in this here and now experience, they also experienced traumatic growth, namely that the event had changed them in a positive way. So one participant said:

> When I remember the accident, I started remembering good things right away rather than the bad things. So it's never like...like ahh it's out of the closet, just remembered the good things that happened, never went back to the evil things.

As part of these positive changes, they found themselves focusing on the good rather than the bad, becoming more appreciative in terms of what they have, valuing their lives more and re-adjusting some of their life values. For example, participants said:

> It [trauma] definitely made me appreciate what I have, but I've been appreciating good things, part of your demons fade away at some point. Life isn't casual otherwise it becomes un-necessary.

> There were so many painful things in life you never know what is going to happen next, I'm starting to appreciate everything.

> Maybe just that I'm more aware of death, that it can happen. But I am also aware of life. What will be important about my life?

> When you realize that you are temporarily on this earth, you have to readjust your values. It's so...fleeting, so fast. Make it count for something.

Furthermore, they found themselves wanting to create a meaningful life for themselves. Perhaps, finding meaning is a way to facilitate managing the emotion around the life-threatening events and death anxiety. Thinking about and wishing to live a meaningful life became their priority rather than dwelling on or worrying about death. After all, the threat of death is not something that they could have avoided.

> When something happens that like this, something awful. I wonder about the purpose of life, why is this all here, what is this existence?

> Is it necessarily that I would die? Sure, it [trauma] might happen again. So I'm trying to take, to lead a meaningful life right now because other day might not be.

> I think because I could have died from [the trauma] meaning connect and I need to a person that is purpose driven. In any aspect I think, the person will try to do, like to act according to integrity. And if I understand being useful and bringing the integrity would always bring a meaning of life

> Having the meaning of life is important because if we do not have the meaning of life then I think the life goes in vain and there is no sense of belonging, but when we have the meaning of life and we try to grow and live according to the rules that we set for ourselves, then it helps. It helps to lead a healthy life in all the aspects.

> I think the meaning of life is in life itself. And in finding something interesting... I still think that there is always a reason to live.

Some participants expressed concern over the consequence of not living a meaningful life before they died:

> I want my life to be meaningful and I would be very frustrated if what I did, I thought it was meaningful, but it was unworthy. Then I would get anxious thinking that I lived my life in vain.

b. Sub-ordinate theme: responsibility to others

When participants were discussing the life-threatening events, they were well aware of death as a possible consequence. They were able to manage the distress of this by focusing more on themselves and being responsible for taking care of others.

> Because I almost died I realised that before it happened, like uh...I got into conflicts with...um...most everybody. I kind of refused to do what they say. But then I thought I can't be a child anymore, I want to do something different. I had a lot of relationships sort of broken.

> Yeah, I think especially with traumatic events that I've described, I do see the connection to the possibility of my death. If I die, I leave a trail to influence my relatives and when I see them hurt, when I see them taking wrong paths, when I see them suffer because of the wrong choices ...I kind of take responsibility.

> I feel responsibility for my little brother, to take care of my relatives. If I die or they die, family is important to me, friends, and then people I associate with.

> After the accident, I knew I should build relationships, like if you know you are a person who is ruining relationship you still should try, to fix it. Or at least you should try to find something or someone you will enjoy.

In addition, there was a reflection on the consequences of death on their relationships:

> I'm not scared that I'm going to die, but it scares me more that other people will feel empty...vacant after I die. My parents would not be able to deal with it. It reminded me to value them and talk to them. Sometimes they bother me on the phone....all the time calling asking me if I'm ok. They bother me when they... point out my scar, talk about it. But they love me and I want them to know it....that I care about them.

From the statements above, a positive change is valuing relationships and making sure that do not leave behind "broken" ties with friends and family. In addition, they feel the responsibility to enjoy life and the relationships they have.

> Life is to be enjoyed, not just lived. Don't waste time complaining about your family, enjoy them.

> I don't have any end point where I have to be before I die, but I enjoy living.

Discussion

The aim of phase 1 was to examine that relationship between death anxiety with both PTSD and psychiatric co-morbidity. According to results, the first hypothesis was

supported. In other words, death anxiety is significantly related to PTSD as supported by previous research (Edmondson, 2009; Gershuny & Hendriksen, 2003; Martz, 2004). However, the second hypothesis that death anxiety is related to psychiatric co-morbidity was not supported. Some previous research has supported that relationship; however, the connection is inconsistent (Abdel-Khalek, 1986; Chung, 2000; Gallop & Proctor, 1982; Sinha & Nigan, 1993; Templer et al., 1990). Reflecting on the results of phase one, it was assumed other factors might influence the relationship of death anxiety to both PTSD and psychiatric co-morbidity (e.g. demographics). However mediating variables have not been consistently determined by previous studies (Bremner, Southwick, Johnson, Yehuda, & Charney, 1993; Ray & Najman; 1974). In order to explore this further, phase 2 was conducted to illuminate the results of phase 1. What emerges is a developing model of death anxiety based on resilience. The main overarching message from the participants is that they have risen above the life-threatening event, and have chosen not to be overcome by death anxiety. This resilience is based on their identification of three coping strategies: self-efficacy, religious coping and existential attitude.

Both phase 1 and phase 2 results show that participants who have experienced PTSD have experienced death anxiety. However, mental health difficulties are not prominent in the sample. Studies identifying themes of resilience and hardiness find that these coping mechanism function as independent mediators of post-traumatic recovery supporting this central theme in a belief in one's own ability to exercise control over traumatic adversity (Almedom, 2005; Benight & Bandura, 2004; Harvey, 1996; Kobasa, 1979; Rutter, 1985; Stumpfer, 1995; Tedeschi & Calhoun, 1995). In addition, this fortitude serves to help one cope with death anxiety and mediate its affect on PTSD (Furer & Walker, 2008). They may experience death anxiety as a result of their traumatic experiences; however, these protective factors allow them to cope and move beyond their trauma.

Interestingly, the PTSD group did not have significantly higher psychiatric co-morbidity compared to control group. One could expect a negative aftermath from life-threatening events; however, according to the data, the participants had an equivalent level of mental health functioning. Studies have suggested that death anxiety may actually be a manifestation of past trauma, the effects of which have not been properly dealt with (Chung, Chung , & Easthope, 2000). Therefore, as phase 2 has highlighted, this sample population appears highly resilient; the connection of death anxiety to psychiatric co-morbidity is not evident. These themes present in the qualitative phase should also reflect the psychological reaction of the larger sample.

The themes that have emerged in phase 2 of this study reflect both cognitive and existential approaches to death anxiety. It is also reflective of the sociological approach in the idea that faith/religion may serve as a protective factor. Participants report an ability to choose control and rise above the life-threatening event. This self-efficacy approach to coping with death anxiety is reflective of the cognitive approach. From a cognitive perspective, anxiety, in general, can thus manifest itself in death anxiety. Therefore self-efficacious strategies appear to be utilised by the participants to manage this anxiety. When participants are thinking about death anxiety, choosing to have control and rise above the death anxiety is a prominent feature in their own sense of resilience.

Both religious coping and existential attitude reflect a general existential approach to death anxiety. For example, death anxiety as managed by faith and religious behaviour would be reflective of Kierkegaard's approach to death anxiety. In our state of despair, without complete relation to God, the participants would never truly escape death anxiety (Kierkegaard, 2009). Therefore, religious coping would serve as a necessary means to escape and it would make sense that participants bring up issues of faith and religious behaviour as a method to escape death anxiety. In addition, finding meaning in the life threatening event is reflective of the existential perspective, as described earlier.

It begs the question why a Freudian perspective of death anxiety is not represented in the participants themes. Indeed, one could find clues leading to the conclusion that the participants' statements reflect a type of Freudian denial and repression. In other words death anxiety as repressed in the unconscious would be congruent with the earlier stated integrative 2 factor concept of avoidance. Could these difference levels of awareness be explained from a Freudian perspective? One could speculate that resilience against death anxiety is merely an approach to suppress death anxiety entirely. Although this may be true, it is not true to the experience presented by the participants. Previous research supports that even if this was a denial of death anxiety, it is not akin to the sort or neurotic denial described by Freud (Ray & Najman, 1974). Regardless, death anxiety is still related to PTSD and the themes of self-efficacy, religious coping and existential attitude still work as coping with death anxiety.

An important point of discussion is that of culture. Northern and Eastern European cultures have been largely underrepresented in previous research on death anxiety. Although this provides the impetus for this research, it is unclear as to how the concept of death anxiety can be understood in this cultural context. More specifically, language is a potential weakness in both phases of this research. Despite the best attempts to translate the assessments in a way that is both accurate and understandable to the general reader, certain variations in language could influence the results due to the linguistic competency of the translators and their knowledge of cultural nuances. Collecting data in one language and presenting the findings in another involves translation related decisions that may impact the validity of the results (Birbili, 2000). In addition, the phase 2 the interviews were conducted in English and not Lithuanian or Russian. It could be criticised that the interviews should be conducted in their native language to capture the true phenomenological experience (Birbili, 2000). However, practically this was not feasible. First of all, this researcher does not speak Lithuania or Russian and would not be able to

analyze the statements of the participants. Having a native speaker to conduct the interviews was considered, however the issue of translation to English would still be a problem. It was decided that instead of allowing a single translator to transform Lithuanian or Russian statements into English, let the participants choose their own words since they previously demonstrated proficiency in the English language. Despite best attempts to minimize the influence of language, the resources that were available to this research lends a sense of caution about the results of the study.

Another potential limitation with this study is the issue of age. The participant sample was based on university students and thus does not reflect participants from across the life-span. Additional studies could have been based on a wider sampling of the general population; however, due to certain pragmatic issues, this was not realistic. Having access to an English speaking population would have proved extremely difficult if studies were conducted outside the university atmosphere. However, the consequence is that these results may not be generalisable to the wider population due to the limitations of age diversity and that a university population may in and of itself be a limiting factor due to the fact that they are students who have a strong motivation to seek higher education, better themselves, etc. So, the question is did their trauma motivate them to pursue a better life for themselves or were they already higher functioning to begin with? It is important to keep these questions in mind when considering the results.

Another consideration is in regards to the sample which may have influenced the lack of significant differences between the trauma and control groups in the GHQ sub-scales. University students experience a higher level of stress than the general population due to the transition to higher education and pressures of coursework which in turn affects emotional welfare (Cohen, Kamarck, & Mermelstein, 1983; Sargent, Crocker & Luhaten, 2006). International students also tend to suffer from psychological distress due to the implications of living in a new culture (Cross, 1995). However, that being said, earlier

studies have shown demographic variables including both academic and cultural issues have not been significant variables in death anxiety (Abdel-Khalek, 2002; Al-sabwah & Abdel-Khalek, 2005). Since the role of these academic stressors is unclear, these stressors will be considered in the next study to see if situational factors such as stress from coursework, independent living, and homesickness are significant.

Conclusion

Death anxiety is indeed a real phenomenon and one that is experienced by those who have experienced life-threatening events. However, people respond by activating different modes of coping with and resilience towards it. This death anxiety resilience model should be further explored in light of PTSD. Since death anxiety is positively related to PSTD symptoms, this population sample is a useful source for further exploration. Interestingly, there is no evident relationship between death anxiety and mental health impairment, which suggests two distinct psychological reactions: death anxiety to PTSD, and death anxiety to psychiatric co-morbidity. This dynamic needs more examination, and themes from the semi-structured interview provide useful avenues of investigation to develop this concept of death anxiety resilience in relation to life-threatening events. In the subsequent chapters, each study will examine the three modes of resilience, self-efficacy, religious coping and existential attitudes, as mediating factors for death anxiety with PTSD and psychiatric co-morbidity. Study 2 will focus specifically on resilience against death anxiety via self-efficacy.

CHAPTER THREE

Introduction

Self-efficacy is an idea that addresses issues of control and the belief in oneself as having the strengths and resources to handle problems that may arise (Bandura, 1997). In other words, an individual must believe he/she is competent to deal with whatever comes their way. Self-efficacy relies on a belief in one's capability to successfully engage in a course of action to satisfy the situational demands (McAuley, 1992; Parson et al., 2000). Therefore, self-efficacy is ultimately a judgement of confidence, a judgement that rests on four sources of information: performance, learning, social persuasion and emotional arousal (Bandura, 1997). These components create a sense of mastery over experience, which can be bolstered through successful completion of challenging tasks.

In regards to performance, this is accomplished with prolonged and consistent application of cognitive-behavioural self-regulatory tools that execute effective strategies. Learning vicariously through others gives the individual a chance to reference the performance outcomes of others. In other words, if others can do it, the observer asserts that they should be able to perform similarly. This is reinforced via verbal persuasion which serves as an efficacy appraisal and external validation. Positive appraisals then strengthen one's self-efficacy if they are deemed credible and specific to the relevant behavioural domain. Finally, emotional arousal in response to a stressful situation is the final confirmation of self-efficacy. The degree to which one experiences aversive physiological arousal influences judgements of self-efficacy.

> Somatic indicators of personal efficacy are especially relevant in domains that involve physical accomplishments, health functioning and coping with stressors. (Bandura, 1997, p. 106)

In Bandura's social cognitive theory, perceived self-efficacy to exercise control over potential threats plays a central role in anxiety arousal. Threat is a relational property

reflecting the match between perceived coping capabilities and potentially life-threatening aspects of the environment. People who believe they can exercise control over potential threats do not engage in apprehensive thinking and are not perturbed by them. But those who believe they cannot manage threatening events that might occur experience high levels of anxiety arousal.

By examining the relationship perceived between self-efficacy and anxiety arousal, research shows perceived coping "inefficacy" is accompanied by high levels of subjective distress, autonomic arousal and catecholamine secretion (Bandura, 1997). That is not to say high self-efficacy means that environmental events are always completely under personal control; most human activities contain some potential risks. However, the exercise of control over anxiety arousal requires not only development of behavioural coping efficacy, but also efficacy in controlling dysfunctional apprehensive and intrusive thoughts. It is not terrifying cognitions *per se* but the perceived self-inefficacy to turn them off that is the major source of anxiety. Analyses of the causal structure of self-protective behaviour show that anxiety arousal and avoidant behaviour are mainly co-effects of perceived coping inefficacy (Bandura, 1988, 1997). This idea is a key concept to keep in mind when examining the intrusive negative thinking and anxiety arousal of PTSD.

As seen in the previous study, the important role of self-efficacy is a common theme in defining the participants experience in regards to trauma and death. It would seem that having a self-identity in which one feels that they have a choice and the resources to manage life are an important aspect of their experience. This belief points to a connection between sense of self and death anxiety. Currently, there is limited literature that could propose a model of resilience (based in part on self-efficacy) which would mediate death anxiety with PTSD and psychiatric co-morbidity. Previous literature predominantly focuses on death as a specific fear or state of anxiety and as something that should be grieved (Becker, 1973; Kübler-Ross, 1969; Lonetto & Templer, 1986; Schulz, 1978). However,

previous research has identified components that will help develop a framework in which to understand the interaction.

People's self-efficacy, then, includes a sense of competency in relation to death; low competency results in high death anxiety and vice versa (Bugen, 1980; Robbins, 1994). For example hospice care typically focuses on education regarding communication, emotional support and effective strategies on managing death. The emphasis is coping with death itself. Self-efficacy then becomes an issue of control or at least a perceived level of control over the end of one's life. People are afraid of death despite whether or not that awareness fluctuates. Having more self-control to reduce death anxiety controls awareness, but not necessarily the unconscious feelings of threat that often manifest biologically, i.e., increased heart rate, breathing and other measures of stress. Thus death anxiety is understood as being controlled by death competency, in other words a death self-efficacy (Godkin, Krant & Doster, 1984; Herman & Branscomb, 1973; Robbins, 1994).

Previous studies have found self-efficacy to be an important proactive "agentic" factor in post-traumatic recovery. Agentic refers to intentionally being an agent of change through one's actions. Self-efficacy plays a proactive role in adaptation to extremely stressful events and thus influences the development of PTSD (Bandura, 1997; Benight & Bandura, 2004). Studies in traumatisation found that lower perceived self-efficacy was significantly correlated to increased PTSD symptoms of intrusive thoughts and adaptational difficulties (Solomon, Benbenishty & Mikulincer, 1991; Solomon, Weisenberg, Schwartzwald & Mikulincer, 1988). Treatment of veterans had been shown to benefit from an emphasis on improving self-efficacy in people suffering from chronic posttraumatic stress (Freuh, Turner, Beidel, Mirabella & Jones, 1996). Indeed traumatised adolescents with PTSD exhibit lower self-efficacy than traumatised adolescents without PTSD and

control. The latter group exhibits moderately high self-efficacy (Saigh, Mroueh, Zimmerman, Zimmerman &Fairbank, 1998).

These studies indicate self-efficacy functions as a renewed belief in successful coping following a trauma that in turn alleviates posttraumatic stress reactions and behavioural difficulties (Williams & Falbo, 1996; Benight & Bandura, 2004). Emphasising coping within self-efficacy has been shown to reduce aversive thoughts and avoidance even when controlling for social support, resource loss and optimistic orientation (Benight, Ironson & Durham, 1999; Lazarus & Folkman, 1984). Again self-efficacy is successful in that it is literally a belief or expectation of success. This perception of controllability fosters resilience against traumatic stressors and the perception of controllability from traumatic stress actually decreases the biological reactivity of survivors (Bandura, 1997; Maiier, Laudenslager & Ryan, 1985). In other words self-efficacy functions as a protective factor against the development of PTSD (Benight & Bandura, 2004; Benight, Swift, Sanger, Smith & Zepplin, 1999). Thus self-efficacy should be considered a key mediator on whether life-threatening events produce enduring post-traumatic stress.

Research indicates that neither social support, optimism nor the improvement of resources alone provide protection from PTSD. However, in combination with the mechanism of self-efficacy, resilience against traumatic stress is strengthened with the addition of these resources thus reducing the severity of PTSD symptomology (Benight & Bandura, 2004; Benight, Freyaldenhoven, Hughes, Ruiz, Zoschke, & Lovallo, 2000; Cheever & Hardin, 1999; Wilner & Alvarez, 1979).

This resilience also influences overall mental health because studies show that those who display a sense of resilience with a strong commitment to self, vigorousness to life and an internal locus of control express less health concerns overall (Kobasa, 1979). Self-efficacy has been consistently linked with well-being and improved psycho-social functioning (Bandura, 1997; Benight & Bandura, 2004; Chamberlain, 2008). Specifically in

regards to anxiety, self-efficacy has been shown to help individuals exert more control over their anxious thought processes (Fry, 2003; Tomer & Eliason, 2000). Self-efficacy serves as a buffer against anxiety and strengthens a person's sense of control over the unknown (Bandura, 1993, 2000). Individuals with weak self-efficacy suffer from both anxiety and depression in that they respond erratically, pessimistically and passively to the challenges they face. They succumb to mental health difficulties due to low self-appraisal, life satisfaction and emotional regulation (Carroll, 1995; Fry, 2001; Lawton, 2001; Smith, Kohn, Savage-Stevens, Finch, Ingate & Lim, 2000). In the social cognitive framework, depression is specifically attributed to hopelessness. Research indicates low self-efficacy influences interpersonal conflict, emotional instability and hopelessness, characterising depression (Bandura, 1997; Seligman & Csikszentmihalyi, 2000; Fry, 2003). Research indicates that self-efficacy accounts for 21% of variance in scores of depression (Zeiss, Gallagher-Thompson, Lovett, Rose, & McKibbin, 1999).

In summary, self-efficacy is not just a predictor of PTSD and psychiatric co-morbidity. Indeed, self-efficacy is an agentic perspective within the social cognitive theory that provides a construct on how to motivate and enable people to build resilience against post-traumatic stress (Bandua, 1997, 2002; Bandura, Adams, Hardy & Howells, 1980; Kazdin, 1978; Ozer & Bandura, 1990; Solomon, Weisenberg, Schwarzwald & Mikulincer, 1988). Self-efficacy is ultimately a cognitive framework which improves psychosocial functioning, enabling mastery of experience and thus producing demonstrable personal change.

The social cognitive model of death anxiety, as reviewed in Chapter One, focuses on this type of perceived self-efficacy. People perceive or believe that they have the ability to prepare for death and the issues surrounding death. This issue of perceived control correlates with the anxiety around death. A review of death anxiety literature shows self-efficacy is both a predictor and mediator of death anxiety (Tomer & Eliason, 1996, 2000;

Fry, 2003). This appears to work within the social cognitive framework as self-efficacy beliefs.

People with low levels of self-efficacy are more likely to report high levels of death anxiety (Cheng, 1997; Wu, Tang, & Kwok, 2002). People's beliefs about their own self-efficacy are linked to various determinants of death anxiety. Indeed, a related review has found that people who are anxious about death also show a tendency towards hampered belief in self-ability and mental health difficulties (Lonetto & Templer, 1986). Death anxiety is consistently found to correlate negatively with difficulties in perceptions of self (Aronow, Rauchway, Peller, & DeVito,1980; Davis, Bremer, Anderson, & Tramill,1983; Nelson,1978). For example, in a study conducted on people living in areas of high military conflict, there was indeed increased death anxiety, however higher self-efficacy was associated with lower death anxiety (Pon, 2009).

Results from the previous study highlighted the role of self-efficacy for the participants. This sense of control over life-threatening events was a crucial factor in their ability to cope with death anxiety. This corroborates with previous studies where self-efficacy was found to moderate internal states, such as emotions, thoughts, and physical reactions. Studies examining the association between death anxiety and locus of control, found that higher levels of death anxiety was related to a low level of internality and an external locus of control (Hayslip & Stewart, 1987; Patton & Freitag, 1977; Wallston, 1992). Aging, then, relates to death anxiety because as perceived self-efficacy increases, death anxiety should decrease. Death anxiety is high in young people but then gradually decreases during middle adulthood, and remains the lowest in older adults (Gesser,Wong, & Reker, 1987; Thorson & Powell,1994; Robbins, 1990). Some researchers, however, have found a negative correlation between age and death anxiety (Neimeyer, 1985; Templer, 1971; Thorson & Powell, 1994). That being said, age in and of itself is not the determining factor. Previous studies have found sense of control to be instrumental in

coping with life threatening events, and death anxiety increased participants desire to generate a strong sense of goal achievement (Chung et al., 2002; Kasser & Sheldon, 2000; Kobasa, 1979). Self-efficacy is activated as a way to suppress death anxiety regardless of its oscillating state of awareness. Considering results from previous research, then, one can speculate that self-efficacy is the key factor, not necessarily aging, in understanding death anxiety.

The role of self-efficacy with regard to death anxiety appears to tap into a range of skills, beliefs and attitudes about self and death. If self-efficacy serves as a protective or coping factor in death anxiety and life-threatening events, it is important to examine the relationship between self-efficacy and PTSD. If self-efficacy is a self-appraisal of coping abilities, then in relationship to trauma, it should also serve to determine the threat analysis of traumatic environments and subsequent judgements on lethality (Bandura, 1997; Benight & Bandura, 2004). Self-efficacy is a focal mediator of post-traumatic recovery and enables a protective function of belief in one's own ability to exercise control over the adverse effects of trauma (Benight & Bandura, 2004). This perceived coping mechanism helps people navigate their traumatic experiences. It is even suggested that a lack of self-efficacy contributes to the development of PTSD and psychiatric co-morbidity; self-efficacy serves as the foundation for human agency and affects one's perceived ability to control life's events (Benight & Bandura, 2004).

Self-efficacy is fundamental in navigating stress reactions and influences the quality of coping with threatening events. This relationship between perceived coping and potentially harmful aspects of environmental threats directly influences the level of psychiatric co-morbidity. The converging evidence indicates the predictive generality of self-efficacy to PTSD, even after controlling for anxiety, depression, hostility, phobias, obsessions and somatisation (Bandura, 1997; Benight & Bandura, 2004; Chamberlain, 2008). A study of post-surgical implantation of the ICD examined the relationship between

depression, anxiety, PTSD and death anxiety and personal coping style. The findings indicated that patients with high dispositional optimism had fewer anxiety and depressive symptoms; optimism being at the core of self-efficacy (Bandura, 1997; Chamberlain, 2008).

Self-efficacy is an independent contribution within the constellations of potential determinants of PTSD (Benight & Bandura, 2004). The belief that one can manage life-threatening situations of a traumatic nature results in intentional problem-solving, which in turn reduces the stress of trauma (Bandura, 1988; Williams, 1990). In other words, strong self-efficacy shapes cognitive appraisals of threat which, in turn, activates strategic problem-solving and thus better recovery from traumatic stress, resulting in improved well-being.

At this stage it is important to propose a theoretical model in light of the previously mentioned research. Based on the social-cognitive theory of post-traumatic recovery, the agentic adaptation model can be used to demonstrate the mediational role of self-efficacy between death anxiety and PTSD/psychiatric co-morbidity. This theory has its roots in an agentic perspective that views people as self-organising, proactive, self-reflecting and self-regulating, not just as reactive organisms shaped by traumatic forces or driven by inner pathology (Bandura, 1997). This agentic model has been applied to PTSD symptomology. This agentic model would then assert that death anxiety is a result of the reduction of resources that relates self-efficacy thus impacting PTSD.

The proposed model suggests that a "loss of resources" results from the impact of a life-threatening event which challenges both physiological and psychological resources. Second, this loss of resources then triggers self-efficacy as a coping strategy. Thirdly, depending on the level of self-efficacy, PTSD symptoms will either be manageable or result in clinically high symptoms of hyperarousal, intrusion and avoidance (Benight & Bandura, 2004; Cheever & Hardin, 1999; Horowitz, Wilner & Alvarez, 1979). Therefore, it

can be theorised that the agentic model can also be applied to death anxiety in a similar fashion to PTSD. Death anxiety from a life-threatening event creates a loss of resources. As stated earlier, people fluctuate in their level of awareness of death anxiety; however, the life threatening event brings the death anxiety to the forefront of consciousness. The death anxiety is then akin to the lack or loss of resources in the adaptation model of PTSD (Cheever & Hardin, 1999; Foa, 1997). In the agentic process, self-efficacy would be triggered as a coping resource for the individuals. Therefore, a person's ability to remain resilient against death anxiety in the face of a life-threatening event would be mediated by self-efficacy.

The agentic model as applied to the experience of death anxiety is a relevant and slightly modified model of the social cognitive perspective on PTSD. The reason it has been adapted for the purpose of studying death anxiety is that literature suggests death anxiety has a negative effect of psychological resources (Cozzolino, 2004; Fortner & Neimeyer, 1999; Greenberg, Pyszczynski, & Solomon 1991; Greenberg, et al., 1990; Maxfield, 2006; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989; White & Handal, 1990). According to the literature, death anxiety affects general psychological functioning; therefore, using the agentic model, self-efficacy should act as a mediator. Higher self-efficacy should mediate the effects of death anxiety resulting in lower mental health difficulties. Conversely, lower self-efficacy would be less effective in mediating the impact of death anxiety on mental health. In order to develop this model of death anxiety resilience further, research needs to demonstrate that death anxiety is mediated by self-efficacy and thus has demonstrable effects on PTSD and mental health outcomes.

Previous studies have shown self-efficacy and factors relevant to self-efficacy are significantly related to death anxiety (Aronow, Rauchway, Peller, & DeVito,1980; Cheng, 1997; Davis, Bremer, Anderson, & Tramill,1983; Fry, 2003; Lonetto & Templer, 1986; Nelson, 1978; Pon, 2009; Tang, Wu & Yan, 2002; Tomer & Eliason, 1996, 2000). The

main conclusion from this research is that higher self-efficacy should act as an effective mediator of death anxiety on metal health, thus the rationale for the proposed agentic model of death anxiety resilience.

Aims for study two

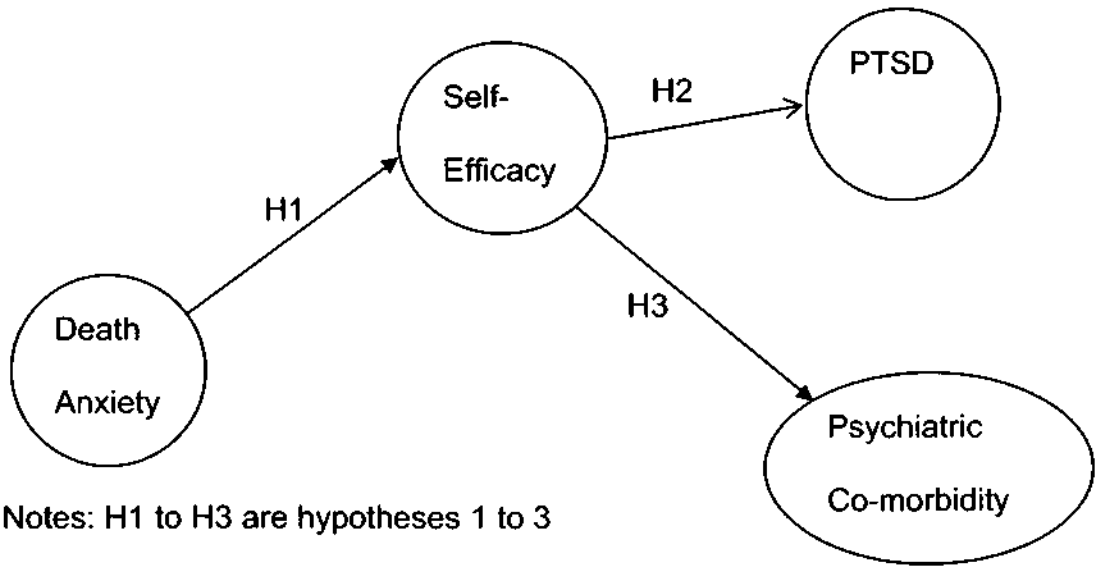
Based on the results of study 1, the aim of study 2 is to explore the relationship between death anxiety, self-efficacy, PTSD and psychiatric co-morbidity. Thus this study will examine three hypotheses

1) Death anxiety is significantly related to self-efficacy

2) Self-efficacy is significantly related to PTSD

3) Self-efficacy is significantly related to psychiatric co-morbidity

The following model will be tested. See figure 1.



Notes: H1 to H3 are hypotheses 1 to 3

Method

Participants

A population of 109 university students participated in the study (M=26, F=83) with an average age of 20.63 (SD=1.86). Almost all (93.6%) of the students were single. Most of the students (66.1%) were Lithuanians and the rest were predominantly from Northern

and Eastern Europe. Over half (62.4%) and were an upper level year group (years 2 and 4) at the time of the study.

Procedure

The procedure in this study was the same procedure described in phase 1 of the first study. In brief, this study obtained ethical approval from the university's Internal Review Board and in cooperation with a module tutor; students from a social science module were recruited for the research. Self-administered questionnaires were given to participants during a lecture following previously described protocols of informed consent. They completed demographic information, Posttraumatic Stress Diagnostic Scale, General Health Questionnaire-28, Death Anxiety Scale and Perceived Self-Efficacy Scale. Participants that had not experienced a life-threatening event formed the control group.

Further details of that procedure can be found in the first study; however it is important to note two important differences. Firstly, the participants in the current study came from a different social science module; therefore, none of the participants from the first study participated in the second study. Secondly, in this study, an additional self-administered questionnaire, the Perceived Self-Efficacy Scale, was used and translated into Lithuanian and Russian. This process was done using the same translation procedure as in phase 1 of the previous study.

Measures

Demographic information was gathered using the same questions as the first study. However, due to findings from the first study relating to psychiatric co-morbidity, it was considered that stress specifically related to university life may be influencing the relationships with psychiatric co-morbidity. Considering that a student population may have significant stressors due to the academic lifestyle, the following variables were included:

- Homesickness

- Stress from independent living
- Comfortable with living arrangements
- First time living without parents
- Coursework deadline within the next 7 days

2) The Posttraumatic Stress Diagnostic Scale (PDS) (Foa, 1995) assesses post-traumatic stress disorder symptoms resulting from experiencing a traumatic event, according to DSM-IV criteria. Participants who had more than one trauma were asked to identify the one they found most traumatic and to complete the questionnaire accordingly. PDS generates three sub-scales: re-experiencing, avoidance and hyperarousal. Further details of this scale can be found in the previous study.

3) The General Health Questionnaire-28 (GHQ-28) (Goldberg & Hillier, 1979) measures general psychological morbidity and global dysfunction. The questionnaire yields four subscales: somatic problems, anxiety, social dysfunction and depression. Further details of this scale can be found in the previous study.

4) The Death Anxiety Scale *(DAS)* is a self-report instrument for measuring death anxiety which consists of 15 true or false items which measure the level of death anxiety. Further details of the scale can be found in the previous study

5) Perceived Self-Efficacy Scale

The scale was created to assess perceived self-efficacy with the aim to predict coping with daily problems, as well as adaptation after experiencing all kinds of stressors (Schwarzer, 1992). The scale is self-administered and scoring responses are made on a 4-point scale and then summed. The responses to all 10 items yield the final composite score with a

range from 10 to 40. The construct of Perceived Self-Efficacy reflects an optimistic self-belief; beliefs that one can perform difficult tasks, and cope with adversity in various domains of human functioning. Perceived self-efficacy facilitates goal-setting, effort investment, persistence in face of barriers and recovery. These ten items are designed to test this construct and each item refers to successful coping and internal-stable attribution. Perceived self-efficacy is an operative construct and is related to subsequent behaviour and, therefore, is relevant for clinical treatment (Schwarzer, 1992). The measure has been used internationally with success for two decades and in samples from 23 nations (Schwarzer, 1992). The scale is uni-dimensional and criterion-related validity is documented in numerous correlation studies where positive coefficients were found with favourable emotions, dispositional optimism, and work satisfaction (Schwarzer, 1992). Negative coefficients were found with depression, anxiety, stress, burnout, and health complaints. It can be taken to predict adaptation after traumatic life changes, but it is also suitable as an indicator of quality of life at any point in time. The Self-Efficacy scale was analysed using item alpha reliability and showed good internal consistency (α=0.843).

Data Analysis Plan

Descriptive statistics were used to describe the demographic information of the participants. T-test, Chi-Square and multivariate analysis variance were used to compare the life-threatening event and control groups in terms of the differences of mean and percentage scores. Correlation coefficients including point biserial correlation (r_{pb}) were used to establish the relationship between demographic variables and outcome variables. Point biserial correlation was used when one of the variables in the correlational analysis was dichotomous. Partial Least Squares (PLS) analysis was used to examine the interrelationship between the constructs in the hypothesized model. The mediation

procedure recommended by Baron and Kenny (1986) and the Sobel test were used to investigate mediational relationships indentified in the final model.

The assumptions and diagnostics related to multiple linear analysis were examined. Three subscales of the GHQ-28 (somatic, anxiety, social dysfunction) were subjected to a logarithmic transformation. When performing regression analysis to examine mediational relationships, one outlier was detected during the exploration of diagnostics (Mahalanobis ≥ 3 SD) and was subsequently removed from the analysis. Following exploration and transformation, assumptions relating to multivariate normality, linearity and homoscedasticity were met. Regression imputation was used in order to address the missing data. In this study, less than 1% of the missing data was imputed which was deemed to be acceptable in literature (Schafer & Graham, 2002).

Results

Similar to Study 1, prior to reporting the results, the internal consistency of the Self-efficacy Scale was examined using item alpha reliability. The results showed good internal consistency (α=0.843). As mentioned earlier, the reliability of the PDS, GHQ-28 and DAS was already addressed in Study 1 and can be found in chapter two. Fifty-two (47.7%) participants reported life-threatening events and 57 (52.3%) did not. Almost a fifth (17.6%) experienced one event while almost half (49%) at least two events. The remaining participants experienced three or more events. According to the diagnostic criteria of the PDS, 24 people (22%) met the diagnostic criteria for full PTSD and 28 (25.6%) did not. Table 1 shows the demographic information of the PTSD, no-PTSD and control groups.

Table 3.1 Demographic details

	PTSD Group		No PTSD Group		Control	
	Mean	SD	Mean	SD	Mean	SD
Age	20.58	1.74	20.35	2.07	20.78	1.75
	N	%	N	%	N	%
Male	2	8.3	10	35.7	14	24.6
Female	22	91.7	18	64.3	43	75.4
Level						
Year 1	4	16.7	9	32.1	17	29.8
Year 2	3	12.5	3	10.7	5	8.8
Year 3	8	33.3	3	10.7	12	21.8
Year 4	9	37.5	13	46.4	23	40.4
Marital Status						
Single	23	95.8	24	85.7	55	96.5
Married	1	4.2	2	7.1	1	1.8
Co-habitating			2	7.1	1	1.8
What country is passport from?						
Lithuania	14	58.3	23	82.1	35	61.4
Latvia						
Belarus	3	12.5			7	12.3
Russia	2	8.3	2	7.1	2	3.5
Ukraine	1	4.2	2	7.1	6	10.5
USA	2	8.3	1	3.6	5	8.8

Other	2	8.4			2	3.6
	Mean	SD	Mean	SD	Mean	SD
Homesickness	3.56	1.71	2.94	0.96	3.40	1.79
Stress from independent living	2.57	1.80	1.91	1.01	2.13	1.37
Comfort with living arrangements	5.21	1.27	6.20	0.76	5.39	1.26
	N	%	N	%	N	%
First time without parent						
No	12	50	20	71.4	42	73.7
Yes	12	50	8	28.6	15	26.3
Deadline in 7 days						
No	17	70.8	22	78.6	51	89.5
Yes	7	29.2	6	21.4	6	10.5

There were no significant differences between groups participating in the study when considering age [F(2,73)=1.75, ns] , gender (Fisher's exact test χ^2 =5.44, df=2, ns), year level (χ^2 =1.08, df=2, ns), marital status (Fisher's exact test χ^2 =3.36, df=2, ns), nationality, (χ^2 =4.42, df=2, ns), the degree of homesickness [F(2,73)=0.82,ns], stress from independent living [F(2,73)=1.75, ns], how comfortable they were with living arrangements [F(2,73=2.45, ns], first time living without parents (χ^2 =4.56, df=2, ns), and a coursework deadline in 7 days (Fisher's exact test χ^2 =0.21, df=2, ns).

Comparing the life-threatening groups, there were no significant differences between the full PTSD and no-PTSD group regarding the number of events (t=1.48, df=49, ns). In addition, both the full PTSD group and no-PTSD group on average experienced the life-threatening event which bothered them the most just over four years ago; this was not a significant difference (t=0.26, df=50, ns). Focusing on individual events, the frequencies of experiencing specific life-threatening events between groups were quite similar.

Table 3.2 Life-threatening event which bothered the most

	PTSD Group		No PTSD Group	
Life threatening events	Number	%	Number	%
Serious accident	6	25.0	8	28.6
Physical assault by family member or someone you know	5	20.8	5	17.8
Physical assault by a stranger	5	20.8	9	32.1
Sexual assault	1	4.2	0	0
Life-threatening illness	7	29.2	6	21.5
	Mean	SD	Mean	SD
Onset of the event (in months)	55.37	52.16	51.50	54.12
Number of life-threatening events	2.73	1.35	2.21	1.16

Table 3 describes the means and standard deviations of psychiatric co-morbidity, death anxiety, and self-efficacy. The results showed significance between the three groups

for anxiety [F (2,105)=3.42, p<0.05]. Post Hoc (LSD) analysis showed that the full PTSD had higher levels of anxiety than the no- PTSD group (p<0.05). There was also a significant difference between the three groups for social dysfunction [F (2,105)=6.14, p<0.01] , full PTSD higher in severity than no-PTSD (p<0.01) and control (p<0.01) (Post Hoc LSD). In addition there was a significant difference in depression [F (2, 105)=6.44, p<0.01], full PTSD was higher in severity than no-PTSD (p<0.01) and control (p<0.01) (Post Hoc LSD). However, there were no significant differences for somatic problems [F (2, 105)=3.00, ns]. In terms of death anxiety, there was no significant difference between PTSD, no-PTSD and control [F (2,105)=3.03, ns]. Turning to self-efficacy, there was no significant difference between the three groups as well [F (2,105)=1.75, ns].

Table 3.3 Mean and standard deviations for DAS, SE, and GHQ-28

	PTSD Group		No PTSD Group		Control	
	Mean	STD	Mean	STD	Mean	STD
GHQ-28						
Somatic	17.16	4.39	14.78	3.24	15.43	3.65
Anxiety	16.79	5.38	13.46	3.28	15.61	4.94
Social Dysfunction	17.33	2.89	14.85	2.12	15.57	2.66
Depression	13.41	5.31	9.60	2.91	10.56	3.64
DAS						
Total	8.70	2.88	6.96	2.78	7.61	2.28
Self-efficacy						
Total	30.68	5.23	33.13	3.11	30.80	3.98

Prior to the PLS analysis of establishing the relationship between death anxiety, self-efficacy, PTSD and psychiatric co-morbidity, in line with Study 1, the demographic variables needed to be controlled. To this end, correlation coefficients including point biserial correlations (r_{bp}) were carried out to see which demographic variables were related to outcome. The results show that gender was the only significant variable associated with PTSD. Unfortunately, due to the fact that PLS analysis requires multiple indicators for each construct, the current research could not develop the construct of demographic information with gender being the only indicator. Ergo, gender was not included in the PLS analysis, however PTSD scores were compared between males and females; results showed female participants reported more PTSD symptoms than males (female mean=4.08, sd=1.59 vs. Male m=2.38, sd=1.59, t=-2.98, df= 45, $p<0.01$). (see table 4).

Table 3.4 Correlation coefficients between demographic variables and PTSD & Psychiatric Co-morbidity

	PTSD	Psychiatric Co-morbidity
Age	0.032	0.146
Gender	0.406*	0.172
Year level	0.135	0.144
Marital Status[a]	-0.046	-0.135
What country is your passport from[a]	0.152	0.106
Homesickness	0.068	0.024
First time without parent	0.062	-0.057
Stress from independent living	0.317	0.190
Comfort with living arrangements	-0.296	-0.126
Deadline in 7 days	0.033	0.102

[a] point biserial correlations (r_{pb})

[b] Dummy variables: year level = lower vs. upper; marital status= single vs. not single; What country is your passport= Lithuania vs. Other

p<.01

To test the hypothesized model of the relationships between death anxiety, self-efficacy, PTSD and psychiatric co-morbidity, we carried out partial least squares (PLS) analysis using PLS-Graph 3.00 (Chin, 2001; Chin & Newsted, 1999). PLS is an alternative to standard structural equation modelling (SEM). PLS models, like SEM models, incorporate latent variables (constructs) with multiple indicators. One of the advantages of PLS over SEM, and a major factor in choosing it for the current work, is that, in contrast to

SEM which requires a large sample size, it can be used with modest sample sizes even for relatively complex models. Arguably, the sample size in this study was too small for SEM.

Unlike SEM, PLS makes no distributional assumptions and models may incorporate formative, as well as reflective, indicators. Having multiple indicators of the construct would increase the reliability of what the construct represents. PLS generates outer and inner model estimates. The outer model estimates refer to the loadings or weights for each indicator and show how strongly it relates to the construct. The inner model estimates refer to the linear relationship between constructs by means of regression coefficients. PLS does not generate a test of model fit but provides estimates of path coefficients for the paths in the model and tests of whether these path coefficients differ significantly from zero. The tests were carried out using bootstrap re-sampling to generate t statistics. Two hundred bootstrap samples were produced.

Less than 1% of responses were missing due to participants omitting questionnaire items. PLS have no procedures for dealing with incomplete observations so regression imputation was used to replace the missing data. Regression imputation has been shown to be a valid method in dealing with missing data (Schafer & Graham, 2002). It should be noted that PLS analysis requires multiple indicators for each construct. Therefore in situations were there are not specific subscales, multiple indicators needed to be created. In order to provide multiple indicators for death anxiety and self-efficacy, 3 item and 2 item parcels were computed respectively. Death anxiety indicators were created by using questions that reflected three types; fear of dying, death caused by external circumstances and thinking about death. The indicators of self-efficacy were created by taking the items from the scale and dividing them into two items: SE1, SE2.

Table 5 shows the estimated loadings of the scale items death anxiety (afraid to die, thoughts of death, & external death), self-efficacy (self-efficacy 1 and self-efficacy 2), PTSD (Intrusion, avoidance & hyperarousal) and psychiatric co-morbidity (somatic

problems, anxiety, social dysfunction & depression). Reflective indicators with loadings that were not significantly different from zero were removed to ensure construct validity. Accordingly, the indicator of thinking about death was dropped from the PLS analysis. The correlation matrix for the indicators used in the modelling is given in table 6. The final structural model can be seen in Figure 2. The resulting path coefficients for relationships between constructs are shown in the figure which also indicates their significance. Unlike SEM, PLS analysis does not tell us the degree of model-fit. Instead, it examines predictive capability of the model characterized by the presence of strong construct loadings (>0.60), standardized path coefficients (>0.20) and at least moderate R^2 values. Most of the construct loadings were strong. The path coefficients of the significant paths were also strong (see later) and the average R^2 of the overall model was 0.0626 (average communality=0.5306, average redundancy=0.0381). Death anxiety was significantly associated with self-efficacy (B=-0.2700, SE=0.1571, $p<0.05$) which was in turn associated with psychiatric co-morbidity (B=-0.3760, SE=0.1299, $p<0.05$).

Table 3.5 Loadings and weights of Indicators on the constructs (latent variables)

Latent variable	Indicator[a]	SE	Loading
Death Anxiety	Afraid to die	0.3633	0.7199*
	Thoughts of death	0.3477	0.5543†
	External death	0.3829	0.8183*
Self-efficacy	Self-efficacy 1	0.1235	0.8835**
	Self-efficacy2	0.2582	0.8354*
PTSD	Intrusion	0.1491	0.9149**
	Avoidance	0.1401	0.9718**
	Hyperarousal	0.0992	0.8812**
Psychiatric co-morbidity	Somatic problems	0.2155	0.6385*
	Anxiety	0.0937	0.8683**
	Social dysfunction	0.1207	0.8343**
	Depression	0.1283	0.8008**

[a]All indicators are reflective indicators.

*p<0.05; **p<0.001; Significance levels are based on bootstrapped standard errors

† Dropped items

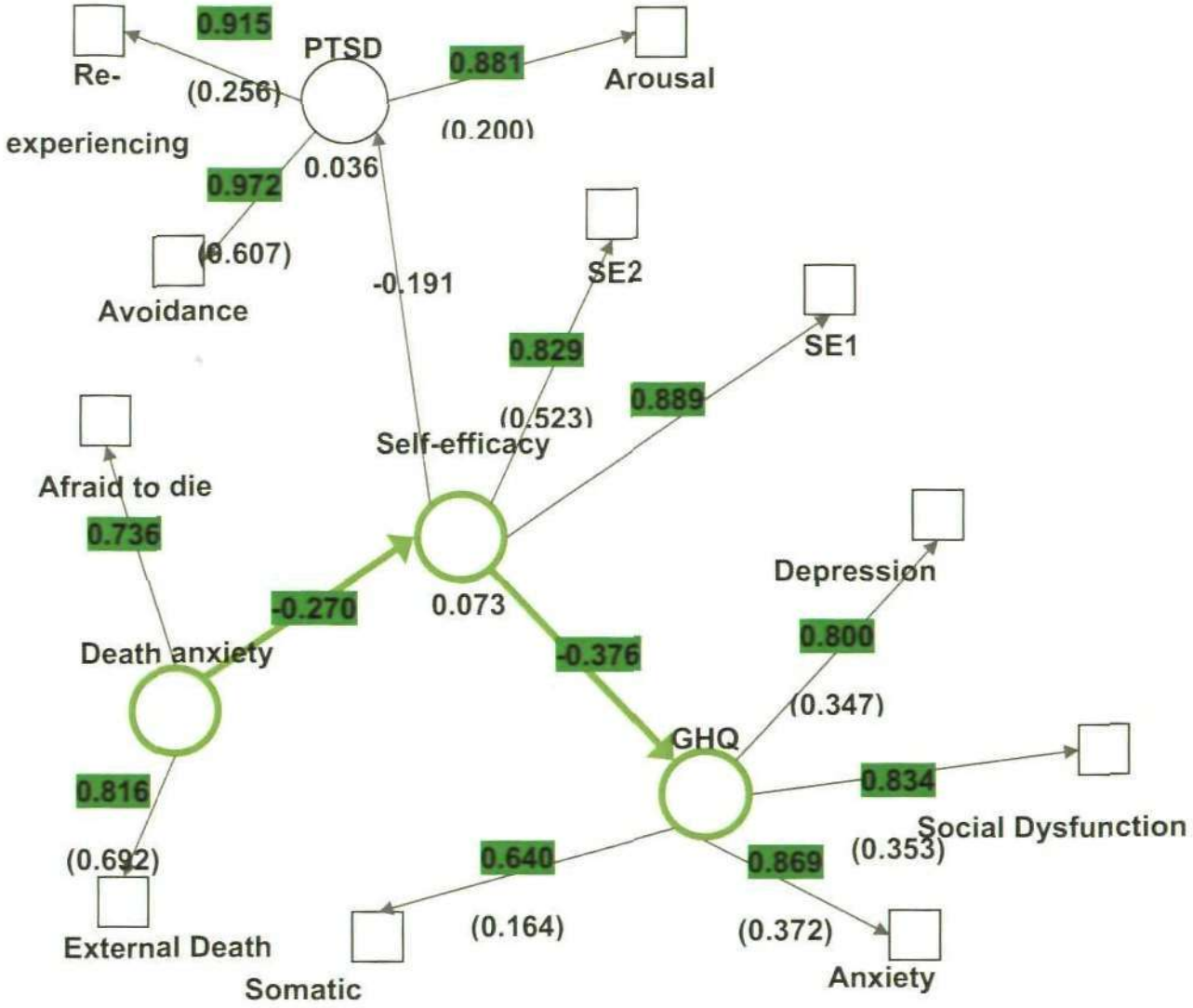


Figure 3.2 PLS path model

Table 6. Estimated correlations between the transformed variables used in the PLS model

	Afraid Die	Thought Death	Ext Death	Soma	Anx	SocDys	Dep	Intru	Avoid	Arou	SE1	SE2
Afraid Die	1.0	0.246	0.208	0.087	0.055	0.296*	0.195	0.206	0.185	0.036	-0.253	-0.330*
Thought Death		1.0	0.442**	-0.020	0.293*	0.129	0.183	0.169	0.366*	0.250	-0.052	-0.147
Ext Death			1.0	0.119	0.210	0.103	0.126	0.043	0.198	0.208	-0.336*	-0.122
Soma				1.0	0.605**	0.442**	0.290*	0.343*	0.205	0.419**	-0.282	0.031
Anx					1.0	0.581**	0.562**	0.364*	0.305*	0.427**	-0.472**	-0.180
SocDys						1.0	0.569**	0.260	0.263	0.292*	-0.311	-0.417*
Dep							1.0	0.456**	0.474**	0.346*	-0.378	-0.405*
Intru								1.0	0.755**	0.755*	-0.083	-0.001
Avoid									1.0	0.709**	-0.282	-0.221
Arou										1.0	-0.024	-0.030
SE1											1.0	0.585**
SE2												1.0

AfraidDie=feeling that you were going to die, ThoughtDeath=having thoughts about death, ExtDeath= fear something would kill you,

Soma=somatic problems, Anx=anxiety, Social=social dysfunction, Dep=depression, Intru=intrusion, Avoid=avoidance behaviour, Arou=hyperarousal, SE1= Self efficacy pt 1, SE2=Self-efficacy pt 2

*p<0.05, **p<0.01

Conceptually, the path results suggested that participants' self-efficacy mediated the relationship between death anxiety and psychiatric co-morbidity. To verify this, we examined mediation using the regression procedure recommended by Baron and Kenny (1986). To begin with, the association between the independent variable (IV) and dependent variable (DV) needs to be significantly established. Then, for complete mediation, three conditions need to be met: a) The IV must be significantly associated with the mediator, b) the mediator must be significantly associated with the DV, c) the relationship between the IV and DV becomes non-significant when the mediator is controlled. For partial mediation, the three conditions remain the same except that for condition c, the relationship between the IV and the DV remains significant when the mediator is controlled.

The results showed that death anxiety (IV) was not correlated with psychiatric co-morbidity (DV) (B=0.075, SE B=0.039, Beta=0.265, ns) suggesting that the first condition of the mediation analysis was not met. Given this, the rest of the mediation procedure did not need to be carried out. In other words, self-efficacy was not a mediator between death anxiety and psychiatric co-morbidity. This lack of mediation was confirmed using the Sobel test. The results showed that self-efficacy did not mediate the relationship between death and psychiatric co-morbidity (Z=0.93, ns).

Discussion

The aim of study 2 was to explore the relationship between death anxiety, self-efficacy, PTSD and psychiatric co-morbidity. Further, specifically to look at an agentic model of death anxiety resilience. The results highlight that self-efficacy is related to death anxiety supporting the first hypothesis of this study. This result is consistent with previous research and demonstrates a connection between self-efficacy and death anxiety (Aronow, Rauchway, Peller, & DeVito,1980; Cheng, 1997; Davis, Bremer, Anderson & Tramill,1983; Fry, 2003; Furer & Walker, 2008; Lonetto & Templer, 1986; Nelson, 1978;

Pon, 2009; Tang, Wu & Yan, 2002; Tomer & Eliason, 1996, 2000). In addition, the results confirm the theme of self-efficacy found in phase two of the first study in which participants report the use of self-efficacy in managing death anxiety along with associated life-threatening events.

Surprisingly, self-efficacy was not found to be related to PTSD and the second hypothesis was rejected. This specific finding is different from the results of the study 1, as well as inconsistent with previous research which identifies self-efficacy as related to posttraumatic symptoms (Bandura, 1997; Benight & Bandura, 2004; Rachman, 1980; Williams, 1990). However, some studies have indicated that other factors in combination with self-efficacy demonstrate greater influences on PTSD (Benight, Swift, Sanger, Smith & Zepplein, 1999; Cheung & Sun, 2000; Cutrona & Troutman, 1986). The third hypothesis was supported, however, and self-efficacy influences psychiatric co-morbidity. Although this result was not found in the first study in this paper, other research has shown self-efficacy is correlated positively with mental health (Benight & Bandura, 2004; Bandura, 1997; Grembowski, Patrick, Diehr, Durham, Beresford, Kay & Hecht, 1993).

One strength of this study is that the sample population experienced a range of life-threatening events, whereas many studies have examined very specific types of trauma. Despite other studies' focus on specific populations and subsequent findings, this study has yielded similar results. This indicates that the findings can be seen as somewhat robust in that it is not event or setting specific. While on one hand this may be considered a strength, it may conversely be seen as a weakness. The results of study 2 signify a change from the results found in study 1. In study 2, self-efficacy is related to psychiatric co-morbidity, but not PTSD. This is surprising, considering the previously mentioned literature review on self-efficacy and PSTD. Research shows the association between self-efficacy and PTSD is transient. Self-efficacy is associated with short term adjustment to traumatic events; however, this association tends to diminish over time (Ginzburg,

Solomon, Dekel,& Neria, 2003; Solomon, Benbenishty & Mikulincer, 1991). Yet, other studies suggest that self-efficacy and trauma may not be closely associated. For example, an increase in self-efficacy was not followed by improvement in PTSD symptoms (Weisenberg, Schwarzwald & Solomon,1991; Ferren; 1999)

However, if there are ample studies showing a likely link between self-efficacy and PTSD as previously mentioned, it begs the question as to why the relationship was not evidenced in this study. Going back to trauma types, this may have influenced the results. This is not a study on a specific type of traumatic event, e.g., sexual abuse, PTSD and self-efficacy. Hence the broad nature of trauma types and life-threatening events in this sample may have reduced the strength of the relationship. Additionally, the age of the sample may have influenced the lack of connection of self-efficacy to PTSD. Interestingly, research has been inconsistent on the effects of age on PTSD; some research has shown the severity of PTSD increases with age, while others suggests context for trauma is more significant (Norris, Krzysztof-Kaniasty, Conrad, Inman & Murphy, 2002; Thompson, Norris & Hanacek, 1993).

Interestingly, the connection to psychiatric co-morbidity indicates the strength of relationship to self-efficacy may be symptom specific, but not necessarily specific to PTSD symptoms. In other words, self-efficacy, in actuality, relates more to symptoms of general psychological difficulties & global dysfunction. It can be argued that self-efficacy is more relevant to general psychological difficulties or global dysfunction versus being specific to PTSD. For example, it was found that self-efficacy related to the immediate mental health difficulties from trauma, but not the long-term symptomology of PTSD (Benight, Freyaldenhoven, Hughes, Ruiz, Zoschke, & Lovallo, 2000). How is this plausible? As stated earlier, self-efficacy relates to general anxiety arousal on the whole. Perhaps what should be considered is that self-efficacy regulates a more general sense of health anxiety as stated in the cognitive behavioural literature (Furer & Walker, 2008). This is also

possible because PTSD and psychiatric co-morbidity could be considered as two different syndromes. In any case, in this sample self-efficacy is related to psychiatric co-morbidity. If this continues to be true in the next 2 studies, it provides an interesting dynamic to investigate.

Self-efficacy did affect psychiatric co-morbidity, although not in the way proposed by this researcher. Death anxiety relates to self-efficacy; however, self-efficacy did not mediate the impact of death anxiety on psychiatric co-morbidity. This was surprising because previous studies suggest that death anxiety is positively related to mental health. Ergo, the degree to which mental health problems are exacerbated by death anxiety should be mediated by self-efficacy. Results from study 1 show that, when self-efficacy is not taken into consideration, it appears PTSD is directly influenced by death anxiety. Perhaps what can be said is that although death anxiety directly influences PTSD, self-efficacy improves general mental heath. By decreasing mental health difficulties, in essence, the relationship of death anxiety to PTSD may be indirectly influenced via self-efficacy. Literature shows that when death anxiety is controllable via self-efficacy and the person has less psychiatric co-morbidity, it improves the perceived level of manageability regarding PTSD (Joseph, Williams & Yule, 1997; Rachman, 1980). Conversely, if people have uncontrollable death anxiety due to low self-efficacy and high psychiatric co-morbidity, they will have a more difficult time managing PTSD.

However, in regards to the earlier stated model of death anxiety resilience, it should be noted that self-efficacy was not demonstrated to be a mediator; it does not carry the influence of death anxiety to psychiatric co-morbidity which contradicts the agentic model of death anxiety. Self-efficacy relates to death anxiety independently of self-efficacy relating to psychiatric co-morbidity implying that these are separate psychological processes. It was proposed that self-efficacy is a mediator in the agentic model, but the results from study 2 do not support this. In light of the results that self-efficacy contributes

to death anxiety and contributes to psychiatric co-morbidity, it should be considered that this is an additive, not mediational, model of death anxiety. This does, however, coincide with study 1, because death anxiety was also found not to be related to psychiatric co-morbidity.

This is not inconsistent with Bandura's model of self-efficacy because, in its essence, it is an intrinsic human response to cope with death anxiety and it is an intrinsic human response that also copes with psychiatric co-morbidity (Furer & Walker, 2008). If indeed death anxiety and psychiatric co-morbidity are two different psychological phenomena, even though self-efficacy is related to both, they are different processes. One way to consider the role of self-efficacy is as a "surge protector" that buffers against ordinary psychological reactions so they do not become maladaptive. The results show a negative relationship of self-efficacy to death anxiety and psychiatric co-morbidity. Self-efficacy seems to protect against "normal" emotional affect from becoming maladaptive, without this protection it could develop into psychopathology.

Returning to the subject of PTSD, perhaps it does not demonstrate the same effect because it results from an extraordinary event. According to the results of this study, self-efficacy does not necessarily buffer against the distress related to PTSD. However, the agentic model is not fully contradicted by this study. Perhaps death anxiety and loss of resources are quite different. As stated earlier, this study is based on young adults, not necessarily representing the population used in Bandura's research regarding PTSD. In his model, self-efficacy is something that develops across the lifespan and is related to cognitive development (Bandura, 1993). In other words, the use of self-efficacy specifically with those suffering from PTSD may not be as developed with a younger population.

The previous study touched upon possible academic stressors influencing the sample population. However the results do not support this idea; none of the added demographic information (Homesickness, Stress from independent living, Comfort with

living arrangements, First time living without parents, Coursework deadline within the next seven days) demonstrated significance. Considering limitations of this study, there may be other issues of distress that have not been accounted for that are affecting this sample. These may be factors that exist within the general population. Data from the World Health Organization rank Lithuania as one of the worst standardized death rates from suicide and self-inflicted injury (WHO, 2001). This very high rate of suicide is complex and difficult to determine in its causality, however it does lend itself to speculation on overall mental health difficulties. Mortality from mental disorders (including alcohol dependency) was the highest in Europe in 1995 (WHO, 2001). The registered prevalence of mental diseases among the total population was 4.2% in 1998 and epidemiological studies show that almost 500 000 people may need psychological, psychotherapeutic or psychiatric counselling (WHO, 2001). Obviously, these are generalisations about the people of that region, but should be considered as potential influences on the levels of psychiatric co-morbidity in the sample.

Considering some of the limitations of this study, it is important to note that this is not a longitudinal study; therefore causality cannot be determined from the results. Although it would be beneficial for future research, in this case it was not practical. Due the specifics of the setting and the short-term placement of this researcher, longitudinal follow-up would have been very difficult and labour intensive. Regardless of the benefits of a longitudinal design, the other themes of religious coping and existential attitude needed to be explored. Unfortunately it would not be feasible to do a longitudinal study of all three themes. In addition, due to this being a cross-sectional design, it cannot be established as to whether this is a state or trait phenomenon. This is indeed a limitation in a majority of death anxiety research (Neimeyer, 1994; Tomer, 1994). A cross-sectional study does not allow for this type of discussion. Finally, PLS analysis does not establish causality; it works with regression and associations between variables. In other words, it is correlational and

directional, but not causal. In light of this, the results must be interpreted in light of the aforementioned design limitations.

One final consideration is the cross-cultural implications for self-efficacy. This researcher's anecdotal experience of the culture led to an investigation as to whether self-efficacy is actually more of a western concept. Indeed, literature does show self-efficacy is more congruent with a western focus on self reliance, achievement and mastery (Gekas, 1989). These values may not be as socially desirable in the northern and eastern European context. Future research should explore whether self-efficacy is indeed a universal coping mechanism relevant cross-culturally, specifically for death anxiety and mental health.

Conclusion

This study has demonstrated the role of self-efficacy as influencing both death anxiety and psychiatric co-morbidity, separately. However, the role of self-efficacy between death anxiety and PTSD is complicated. The social cognitive perspective for understanding death anxiety may still be useful. It appears as though self-efficacy switches on for death anxiety and psychiatric co-morbidity, but not for PTSD. The next study will continue to consider self-efficacy, however it will move on to the second mode of death anxiety resilience dealing with religious coping.

CHAPTER FOUR

Introduction

The role of religion is difficult to both understand and quantify when it comes to understanding death anxiety and well-being. A variety of different terms are used when discussing religion, many of which reflect specific approaches to religion and its role in mental health.

In general, religiousness and/or religious orientation would reflect an emphasis on either internal or external modes of religious experience. In mental health literature, this distinction between intrinsic and extrinsic orientations sees the distinction primarily as how religion is used to promote general well-being (Allport, 1979; Gorsuch & McPherson, 1989; Hill & Hood, 2009; Lewis, Maltby & Day, 2005). For example, intrinsic orientation is one in which belief systems are integrated with personal life, whereas extrinsic models tend to be more reflective of how religion provides social cohesion and in-group participation (Genia & Shaw, 1991; Gorsuch, Hunsberger, Spilka & Hood, 2003).

Another commonly used term is religiosity, which is a common term addressing a broad band of beliefs and activities. As a term, religiosity tends to ascertain levels of religiousness between individuals across a spectrum of variables, traditionally examining cognition, affect and behaviour (Gorsuch, Hunsberger, Spilka & Hood, 2003). In other words, two common approaches to religion in the mental health literature are basically looking at type and level of religion for a specific person.

However, it's important to understand the aspects of religions, or perhaps dimensions as related to other mediational factors of mental health. For example, religion provides social cohesion which buffers the effects of stress. Religion provides context and meaning for suffering; religion provides coherence (e.g. cognitive frameworks of optimism to reduce uncertainty) and promotes health-related behaviour (e.g. discouraging smoking & drinking)

(Idler, 1987; Levin & Chatters in Koenig, 1998). The positive effects of religiousness on mental health may be due to the internal locus of control beliefs (e.g. religious behaviours will be rewarded) (McIntosh & Spilka, 1990).Religious dimensions are linked to known mediating mental health pathways; these are separate from religion (Levin and Vanderpool, 1989; Vanderpool, 1996).

Religion could be categorized firstly as a way to commit to a healthy lifestyle (Hamburg, Elliot & Paron, 1982). Religious fellowship is a form of social support which buffers the effects of stress, provides coping resources to stressful environments and pathogenic agents that protect against psychiatric co-morbidity and mortality (House, Landis & Umberson, 1988). Religious rituals influence positive emotions such as hope, forgiveness, empowerment, contentment and love. These emotions have been positively correlated to mental health (Rossi, 1993). Religious belief is linked to a worldview that supports internal locus of control and proactive health-related cognitions related to mental health (Jenkins, 1985; Spector, 1979) Religious faith may be reflective of optimism and the reward expectation that service to God will provide better health and well-being (Taylor, 1989).

Despite the apparent connection of religious dimensions to other mediating variables of mental health, a reliance on religion was reported by the participants in study 1 when discussing their life-threatening events and ensuing death anxiety. In other words, religion is used to cope with death anxiety. As with religious orientation, religious coping must be understand as both internal and external processes. In other words, there is a specific personal expression as well as a more public and social expression of religious coping. Some studies have found that it is not religiosity per se, but an emphasis on either intrinsic or extrinsic ways of religious coping that affects well-being (Lewis, Maltby & Day, 2005). These religious coping strategies could be as simple as internally-focused prayer or an externally-focused action, such as participating in a church support group (Boudreaux,

Catz, Ryan, Amaral-Melendez & Brantley, 1995; Pargament, 2001; Pargament, 1990). In order to understand the role of religious coping, this is best understood as an active coping strategy towards stressful events and not as religiosity or religious orientation. Religious coping is a mediating factor connecting religious orientation to well-being (Pargament, 2001; Pargament, 1990).

Religious coping in its various forms has been used historically and ceremoniously in trauma recovery (Brende & Parson, 1985; Figley & Leventman, 1980; Wilson, 1988; Brende, 1995). Despite the efficacy of religion as a modality of recovery, the use of religion to manage trauma cannot be understated. Trauma literature points to the use of religion as a modality for coping with life-threatening events and managing PTSD. Religious coping behaviours such as prayer to manage the traumatic circumstances are often used for managing traumatic events (Chung, 1995; Frankly, 1988; Henderson & Bostock, 1977; Pargament, 2001; Thompson & Vardaman, 1997). Religious coping as a modality for coping with trauma often focuses on the resolution of guilt and surrender to a higher power (Lee & Lu, 1989; Brende, 1995). Treatment of addictive behaviours in trauma victims often recommends the use of a 12-step model which emphasises spirituality as a method of coping (Bernde, 1995; Soreson, 1985; van der Kolk, 1987). Religious coping is an effective strategy in the treatment of trauma because it tends to emphasize power over victimization, the search for meaning, and control of fear (Bene, 1995). Religious coping specifically addresses death issues concurrent with life-threatening events. Religious coping, along with death anxiety predicted PTSD symptoms of re-experiencing, avoidance and hyper-arousal (Martz, 2004). This is consistent with previous research which supports the relationship between religious coping for trauma survivors and the severity of mental health difficulties (Carver, Scheier, & Weintraub, 1989; Fallot & Heckman, 2005; McClain-Jacobson, Rosenfeld , Kosinski, Pessin, Cimino, & Breitbart, 2004). Considering the potential hypersensitivity to death anxiety, religious coping may function as a mechanism

that disrupts the arousal/intrusion/avoidance cycle. This idea is supported by previous studies that found religious beliefs moderate the effects between exposure and posttraumatic avoidance (Maercker & Herrle, 2003). In addition, exposure to life-threatening experiences is associated with higher levels of death anxiety among non-religious people confirming the role of religious coping on the death anxiety resulting from life-threatening events (Florian &Mikulincer, 1992).

Examinations of religious beliefs in victims of life-threatening events report people with higher levels of religiosity and spirituality adapt with better coping, adjustment, health and overall quality of life versus those with lower levels of religiosity (Glas, 2007; Konstam, Moser & Jong, 2005). Religiousness was also found to buffer against depression associated with well-being, with depression significantly related to low-religiousness (Wink & Larsen, 2005). Religious belief is helpful in coping with mental health difficulties. In examining over 630 data based reports, the relationship between religious behaviour and anxiety was examined and found that the more religious participants showed lower levels of anxiety (Koenig, 2001). Epidemiological studies found that among young people, religious behaviour showed significant relationship with anxiety disorders; more frequent religious behaviour meant less frequency of mental health difficulties (Koenig, Ford, George, Blazer& Meador 1993; Koenig 2001; Maltby & Lewis, 1999).

Religious coping has a reported effect on outcomes of well-being, however the relationship to death anxiety is rather complex. Studies indicate a fragile and often contradictory relationship. Previous studies have found religious coping to be negatively correlated to levels of death anxiety (Aday, 1984; Beg & Zilli, 1982; Gibbs & Achterberg-Lewis, 1978; Harding, Flannelly, Weaver & Costa, 2005; Malinowski, 1948; Suhail & Akram, 2002; Templer, 1972; Templer, Lavoie, Chalgujan & Thomas-Dobson, 1990; Wittkowski & Baumgartner, 1977; Young and Daniels, 1980). These studies tend to focus

on either internally related religious coping (faith, belief etc.) or external religious coping (behaviour, practice, etc...).

In regards to internal religious coping, studies have looked at the strength of religious belief and death anxiety. Modestly religious people have more death anxiety than very religious people. People with lower death anxiety often had stronger religious beliefs and interestingly would downplay the importance of the afterlife in the religious belief system (Alvarado, Templer, Bressler & Thomas-Dobson, 1995). Religious beliefs have been shown to lower death anxiety and lower levels of religiosity predicted greater death anxiety (Brush, 1980; Hui, Bond & Ng, 2007; Young & Daniel, 1980). Lonetto and Templer (1986) would categorize it as "faith" vs. "works" as an important determination in understanding death anxiety; in other words, it was faith that predicted death anxiety not religious behaviour. Similarly, Wittkowski and Baumgartner (1977) conducted research with elderly religious persons and found strength of belief was more important than knowledge of dogma and religious attendance in relationship to death anxiety. In fact, people who agree that the most important aspect of religion is the promise of the afterlife actually had more negative death attitudes (Templer & Ruff, 1971). In all, the conclusion is that it is internal religious coping more then external coping that has a significant relationship to death anxiety (Alvarado, Templer, Bresler & Thomas-Dobson 1995; Rigdon & Epting, 1985).

In the religious coping literature, at times, studies highlight the importance of external religious coping. Participation and involvement in religion has been shown to reduce the levels of death anxiety (Aday, 1984; Templer, 1972; Thorson, & Powell, 1990; Wittkowski & Baumgartner, 1977). Other studies have focused on the interplay between internal and external religious coping in the form of belief. Research indicates that death anxiety is related to levels of religious ambivalence and incongruence between belief and religious behaviour (Wink & Scott, 2005; Glas, 2007). Death anxiety is more pronounced in

those whose beliefs in the afterlife did not match their religious behaviour. When spirituality is operationalised in terms of adherence to "non-institutionalised" religious beliefs and practices, it did not have the same buffering effect on death anxiety as religiousness (Wink & Larsen, 2005). Extrinsic religious coping (e.g. religious behaviour) and intrinsic religious coping (e.g. faith & spirituality) combined provide a means of coping with death anxiety (Glas, 2007). It seems when there is synchronicity between internal and external religious coping, death anxiety is more easily managed.

Yet, surprisingly, some of the literature portrays a picture of religion as either insignificant or detrimental to death anxiety. Religious coping is not always demonstrated as significantly related to death anxiety (Lonetto & Templer, 1986; Ray & Najman, 1974). In fact, some studies found religious subjects showed greater levels of death anxiety than non-religious subjects (Feifel, 1969; Florian & Kravetz 1984; Friedman & Rholes, 2007; Friedman, 2008; Hoelter & Epley, 1979; Leming, 1975; Power & Smith, 2008; Radcliffe-Brown, 1952). Specifically, extrinsic religiosity was significantly related to higher levels of death anxiety (Ardelt, 2008). It could be argued that the nature of some religious practices attribute illness and death to spiritual shortcomings, disobedience or evil, thus increasing death anxiety (Florian et al, 1984; Glas, 2007). Intrinsically oriented religiosity has been shown to have had a positive effect on acceptance of death, yet did not seem to relate to death anxiety (Ardelt, 2008; Beck, 2004).

A significant limitation of the literature on religious coping and death anxiety is its inconsistent nature; it's inconclusive as to whether there is a mediational relationship. Historically, there are two camps in the debate about the effects of religion: one camp believes that religion lessens death anxiety and, conversely, there is the view that religion increases death anxiety (Malinowski, 1948; Radcliffe-Brown, 1952). One way to resolve this has to do with religiosity. In other words, both high and low religious people have lower death anxiety, whereas moderately religious people tend to have higher death anxiety

(Homans, 1941; Leming, 1975; Donovan, 2002). This is considered the curvilinear relationship between death anxiety and religion. This is an interesting theoretical solution to the inconsistencies of death anxiety relationship (Homans, 1941; Leming 1975). Yet despite this theoretical model, the results, as indicated earlier, portray a complex and inconsistent picture of religion and death anxiety.

Assuming that the studies that have shown religious coping to be effective are valid, theoretically religion may serve as death anxiety resilience. It's theorized that religious coping creates a sense of "symbolic immortality" in that religions provide a belief system that allows one to transcend death (Beck, 2004; Becker, 1973; Jonas & Fischer, 2006). Religious faith as a coping mechanism tends to adopt theological beliefs centred on solace and consolation (Beck, 2004). Religious coping can be defined as a way for humans to create "meaning systems" that protect them from the anxiety of death and make life more purposeful (Tomer, Eliason & Wong, 2008). For example, about 77% of the American public believe that heaven exists and 76% feel that they have an excellent chance of residing there some day (Panati, 1996). Heaven is reported as a peaceful place, free of stress, and with ample leisure time, reuniting with friends and family (Panati, 1996). This construction of the afterlife as meaningful and positive might serve as a bolstering of resilience against the anxiety of death. Religious traditions often describe life after death as an opulent paradise or an ethereal existence (Panati, 1996).

Atheists can also create a sense of "symbolic immortality" in some of the ways described by Becker (1973), such as with love and connection with others, creation of family and children, and/or creative expression. Research indicates symbolic immortality has a positive impact on our personal well-being (McAdams & de St. Aubin, 1992). Expanding on this, Veronika and Zuroff (2007) found that symbolic immortality mediated the relationship between generativity and well-being. Theoretically, religious coping should reduce the intensity of death anxiety because the commitment to religion entails the

promise of symbolic immortality (Feifel, 1977; Feifel & Branscomb, 1973; Feifel & Nagy, 1981; Florian & Mikulincer, 2004; Schultz; 1978; Templer, 1972). Religious coping thus serves as a defence against death anxiety by minimizing the consequences of death. This is consistent with TMT's proposal that religious coping is ultimately worldview defence. Religious coping is considered to be effective in managing death anxiety because many times certain belief systems are all encompassing and hard to disprove, thus fairly eternal (Dezutter, Luyckx & Hutsebaut, 2009; Vail, Rothschild, Weise, Solomon, Pyszynski & Greenberg, 2010). As Becker suggested, symbolic immortality does not actually solve the problem of death, but it allows connection to something that will live on after death, which in turn reduces death anxiety (Drolet, 1990; Florian & Mikulincer, 1998; Lifton,1996).

At this stage it is important to propose a theoretical model in light of the previously mentioned research. Using the framework of symbolic immortality as espoused by Becker (1973), a model for death anxiety resilience can be created by formulating a model of death anxiety resilience based on religious coping. This model can be used to demonstrate the meditational role of religious coping between death anxiety, PTSD and psychiatric co-morbidity. In this proposed model, one would have an experience and awareness of mortality resulting from a life-threatening event. This reminder of mortality then leads to a heightened awareness of death anxiety which then increases mental health difficulties. In response, religious coping is implemented to create a sense of symbolic immortality. This results in a reduction of death anxiety which in turn reduces mental health difficulties. The goal of this study is to demonstrate the relationship between religious coping and death anxiety, PTSD and psychiatric co-morbidity.

Although the focus of this study is to look at both self-efficacy and religious coping; therefore they will be studied together. The already demonstrated relationship between death anxiety and self-efficacy, and self-efficacy to psychiatric co-morbidity should not be forgotten. On the surface, it may appear that self-efficacy is in direct opposition to religious

coping (e.g., personal control vs. supernatural agency). However, most religious systems do not preclude a sense of personal agency and view human beings as intentional beings with perceptions, goals, emotions and actions (Young & Morris, 2004). In regards to death anxiety, previous research shows both self-efficacy and religious coping are significantly correlated to death anxiety (Daaleman & Dobbs, 2010). In terms of life-threatening events, specifically, religious coping not only mitigates PTSD, but mediates death anxiety in the sense that religious systems facilitate a way to cope with the loss of personal control. In this vein, religious coping is an alternate mode of resilience when self-efficacy is not possible (Kay, Gaucher, Napier, Callan, & Laurin 2008; Pierce, Cohen, Chambers, & Meade, 2007). Conversely, when religious coping is challenged, there is an increase of personal control.

In theory, then, religious coping serves as a second mode of resilience, which it may be used instead of, or in addition to, self-efficacy. Previous research found that religious coping is used when other solution-focused attempts are impossible, resulting in improved mental health and lowered levels of death anxiety (McClain-Jacobson, Rosenfeld, Kosinski, Pessin, Cimino & Breitbart, 2004). This symbiotic relationship between personal control and religious coping suggest that although they are separate modes of resilience, one mode may replace the other (Kay et al., 2008).

The purpose of this study is to shed light on the link between death anxiety and outcomes in relation to the themes of resilience brought up in the qualitative study. In keeping with the premise that there are modes of resilience, this study will look at whether religious coping is a meditational variable between death anxiety and outcomes. Therefore, the stated aim of this third study is to examine this premise and test the following three hypotheses:

1) Death anxiety is related to self efficacy and religious coping
2) Self-efficacy is related to PTSD and psychiatric co-morbidity

3) Religious coping is related to PTSD and psychiatric co-morbidity

The following model will be tested.

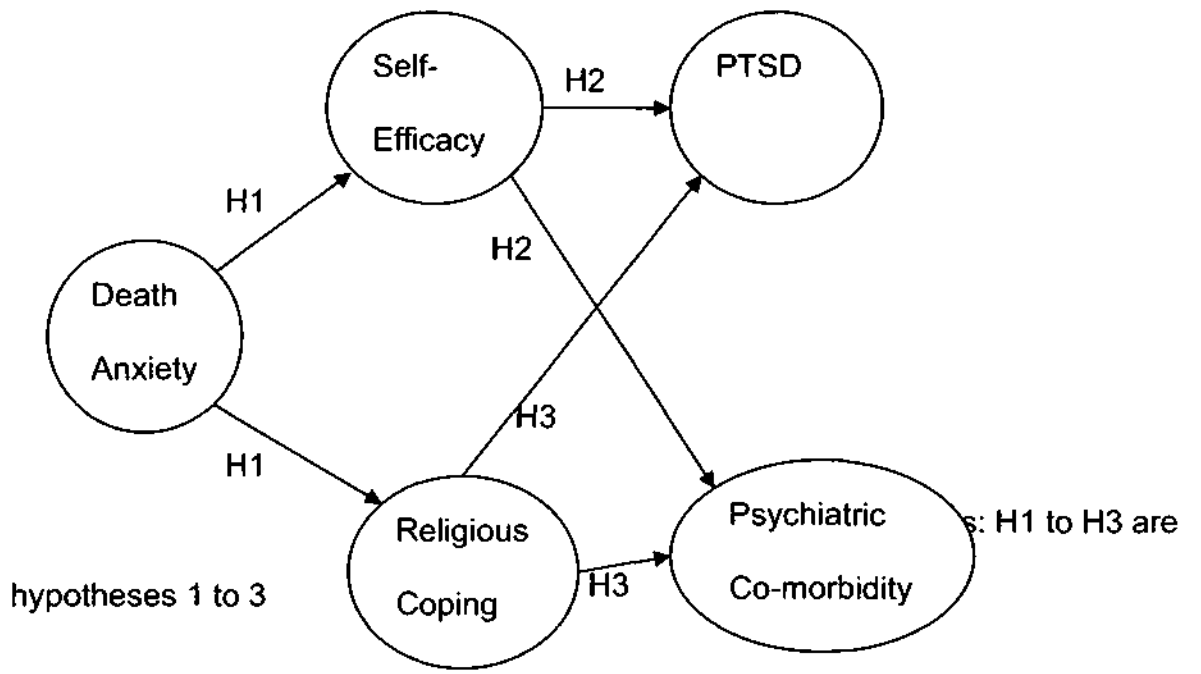


Figure 4.1 Hypothesis 1 to 3

Methods

Participants

In this study, 104 university students participated in the study (M=42, F=62) with an average age 19.63 (SD=1.78). Almost all (95.2%) of the students were single. A majority of the students were Lithuanians and were a lower level year group at the time of the study (Lithuanian =66.3% and year group =67.3%). Most students (72.1%) participants reported experiencing a past traumatic event.

Procedure

The procedure in this study was the same procedure described in the previous two studies. Following the ethical approval from the university, students from a social science module were recruited for the research and completed self-administered questionnaires

during a lecture. They completed demographic information, Posttraumatic Stress Diagnostic Scale, General Health Questionnaire-28, Death Anxiety Scale, Perceived Self-efficacy Scale and Ways of Religious Coping Scale. Participants that had not experienced a life-threatening event formed the control group.

Further details of that procedure can be found in the first study. It is important to point out that the participants in the current study came from a social science module which was different from the modules of previous studies, thus none of the participants were duplicated. Also, the Ways of Religious Coping Scale was translated into Lithuanian and Russian and back translated into English. This was done using the same translation procedure described in Study 1. Again, further details of the translation process can be found in Study 1.

Measures

1) Demographic information was gathered using the same questions as phase 1 of the first study.

2) The Posttraumatic Stress Diagnostic Scale (PDS) (Foa, 1995) assesses post-traumatic stress disorder symptoms resulting from experiencing a traumatic event, according to DSM-IV criteria. It measures re-experiencing, avoidance and hyperarousal symptoms. Further details of this scale can be found in the previous study.

3) The General Health Questionnaire-28 (GHQ-28) (Goldberg & Hillier, 1979) measures general psychological morbidity and global dysfunction. The questionnaire yields four subscales: somatic problems, anxiety, social dysfunction and depression. Further details of this scale can be found in the previous study.

4) The Death Anxiety Scale *(DAS)* is self-report instrument for measuring the level of death anxiety. Further details of the scale can be found in the previous study.

5) Perceived Self-efficacy Scale (Schwarzer, 1992) measures coping with daily problems as well as adaptation after experiencing all kinds of stressors. Further details of this scale can be found in study 2.

6) Ways of Religious Coping Scale

The scale is used to assess religious coping strategies (Boudreaux, Catz, Ryan, Amaral-Melendez & Brantley 1995). The aim was to investigate which coping strategies lead to more adaptive responses, specifically the use of religious coping. The scale is a self-report instrument for assessing the degree and kind of religious conditions and behaviours people use to cope with stress. Results indicate that the WORCS is a valid and reliable instrument (Boudreaux et al., 1995). The assessment is a 40 item self-report and contains two subscales; internal/private and external/social. This scale is used to determine how religious coping is used to handle stressful situations and is measured on a 4 point scale with religious behaviour being used on a range from "not at all" to "used always". The Ways of Religious Coping Scale was analysed for this study using item alpha reliability and showed a high internal consistency (=0.971) overall and for each subscale internal/private (=0.955) and external/social (=0.937).

Data Analysis Plan

Descriptive statistics were used to describe the demographic information of the participants. T-test, Chi-Square and multivariate analysis of variance were used to compare the life threatening event and control groups in terms of the differences of mean and percentage scores. Correlation coefficients including point biserial correlation (rpb) were used to establish the relationship between demographic variables and outcome variables. Point biserial correlation was used when one of the variables in the correlational

analysis was dichotomous. Partial Least Squares (PLS) analysis was used to examine the interrelationship between the constructs in the hypothesized model. The mediation procedure recommended by Baron and Kenny (1986), and the Sobel test, were used to investigate mediational relationships indentified in the final model.

The assumptions and diagnostics related to multiple linear analyses. Due to non-normality, the variables in the GHQ-28 (somatic, anxiety, social dysfunction, depression, and new total score), the PDS (avoidance, arousal, and PTSD total score) and Religious Coping Scale (internal, external) were reflected and subjected to a square root transformation. In addition, due to non-normality, the variables the GHQ-28 (somatic, anxiety, social dysfunction) and Self-efficacy (self-efficacy total) were subjected to a logarithmic transformation. No outliers were detected during the exploration of diagnostics (Mahalanobis ≥ 3 SD). Following exploration and transformation, assumptions relating to multivariate normality, linearity and homoscedasticity were met. Regression imputation was used in order to address the missing data with less than 1% of it imputed.

Results

In line with the previous two studies, the internal consistency of the Ways of Religious Coping Scale was checked which showed an excellent internal consistency (=0.971) for the overall score and for each subscale internal/private (=0.955) and external/social (=0.937). Again, internal consistency of the PDS, GHQ-28, DAS and SE has been examined in the previous studies and can be found in chapter's two and three.

Looking at the entire sample, 72.1% of the participants reported a life-threatening event and the remaining (27.9%) did not. Out of the life-threatening group, on average they reported 2 events (SD=1.73). Over a third (38%) experienced one event while some (15.4%) at least 2 events. The remaining participants experienced 3 or more events. Of the participants who experienced life-threatening events, using the diagnostic criteria of the PDS, 29 (27.8%) participants met the criteria for PTSD and 46 (44.2%) did not. Table 1 shows the demographic information of the PTSD, no-PTSD and the control groups.

Comparing demographic variables across three groups, there were no significant differences in age, [F(2,101)=1.63, ns], in the proportion of females and males participating in the study ((2 =5.04, df=2, ns), upper or lower year levels ((2 =2.95, df=2, ns), marital status (Fisher's exact test (2 =2.44, df=2, ns), and nationality ((2 =0.12, df=2, ns).

Table 4.1 Demographic details

	PTSD Group		No PTSD Group		Control	
	Mean	SD	Mean	SD	Mean	SD
Age	19.41	1.61	19.45	1.51	20.13	2.23
	N	%	N	%	N	%
Male	8	27.6	24	52.2	10	34.5
Female	21	72.4	22	47.8	19	65.5
Level						
Year 1	17	58.6	28	60.9	12	41.4
Year 2	4	13.8	5	10.9	4	13.8
Year 3	6	20.7	6	13.0	11	37.9
Year 4	2	6.9	7	15.2	2	6.9
Marital Status						
Single	28	96.6	45	97.8	26	89.7
Married					1	3.4
Co-habitating	1	3.4	1	2.2	2	6.9
Country is your passport from?						
Lithuania	19	65.5	30	65.2	20	69.0
Latvia			5	10.9		
Belarus	2	6.9	5	10.9	4	13.8
Russia	1	3.4			1	3.4
Ukraine	4	13.8	1	2.2		
USA	1	3.4	2	4.3	1	3.4
Other	2	6.8	3	6.5	3	10.3

Comparing the life-threatening groups, on average the PTSD group had less life-threatening events than the no-PTSD group; there was no significant difference between them (t=-0.70, df=73, ns). In addition, the full PSTD group on average experienced the life-threatening event which bothered them the almost three years ago while the no-PTSD group experienced this event just over two years ago; there were no significant differences between groups (t=-0.49, df=73, ns). Looking at the individual life-threatening events, the no PTSD group were almost 1.5 times as likely to experience a serious accident than the full PTSD group (OR=1.68, 95% CI: 0.65-4.31). Otherwise the likelihood of experiencing other events was similar.

Table 4.2 Life-threatening event which bothered the most

	PTSD Group		No PTSD Group	
Life threatening events	Number	%	Number	%
Serious accident	17		21	
Physical assault by family member or someone you know	2		5	
Physical assault by a stranger	5		10	
Sexual assault	3		5	
Life-threatening illness	2		5	
	Mean	SD	Mean	SD
Onset of the event (in months)	34.41	34.46	26.57	16.19
Number of life-threatening events	2.03	1.82	1.85	1.57

Table 3 describes the means and standard deviations of psychiatric Co-morbidity, Death Anxiety, Self-efficacy, and Religious Coping. The results show that the three groups did not differ significantly in somatic problems, [F(2,97)=1.34, ns], anxiety [F (2,97)=2.51,ns], social dysfunction [F (2,97)=0.87, ns] and depression [F (2,97)=1.04, ns]. In terms of death anxiety, there were no significant differences between groups [F (2,97)=0.41, ns]. Turning to self-efficacy there was a significant difference across the three groups [F (2,97)=3.72, $p<0.05$] with the no-PTSD differed significantly from the control group ($p<0.05$) (Post Hoc, LSD). Finally in regards to religious coping, there were no significant differences between groups in terms of internal/private coping [F (2,97)=2.38, ns] and external/social coping [F (2,97)=1.28, ns].

Table 4.3 PTSD vs. Non-PTSD; mean scores for DAS, SE, Religious Coping, PDS,GHQ-28

	PTSD Group		No PTSD Group		Control	
	Mean	STD	Mean	STD	Mean	STD
PDS						
Re-experience	5.31	3.83	-----	-----	-----	-----
Avoidance	5.45	4.48	-----	-----	-----	-----
Arousal	4.40	3.96	-----	-----	-----	-----
GHQ-28						
Somatic	14.51	4.04	13.08	3.66	13.64	3.47
Anxiety	14.17	4.23	12.04	3.66	13.20	4.61
Social Dysfunction	14.34	2.91	13.71	2.73	14.72	3.14
Depression	12.03	5.03	10.76	3.91	10.44	2.80
DAS						
	6.31	1.89	5.97	1.69	5.96	2.06
Self-efficacy						
Total Score	30.03	4.77	31.93	3.72	29.27	3.97
Religious Coping						
Internal/Private	17.93	14.43	15.91	15.98	22.31	15.40
External/Social	5.93	6.92	4.60	8.67	4.86	6.95

Prior to the PLS analysis of establishing the relationship between death anxiety, PTSD, psychiatric co-morbidity, self-efficacy and religious coping, the victim variables were controlled for as with the previous studies. Correlation coefficients were carried out to

ascertain which demographic variables were related to outcome. It should be noted that the academic stress variables from the previous study were not included in this study. Firstly, because they were not significantly correlated with the outcome suggesting that their relationship with PTSD and psychiatric co-morbidity was limited. The results showed that age and gender were significantly correlated with PTSD and psychiatric co-morbidity. (See table 4). In the PLS analysis, gender and age were factored into the model.

Table 4 Correlation coefficients between demographic variables and PTSD & Psychiatric Co-morbidity

	PTSD	Psychiatric co-morbidity
Age	0.251*	-0.15
Gender[a]	0.314**	0.275*
Year level[a,b]	0.137	-0.142
Marital Status[a,b]	-0.023	0.102
What country is your passport from[a,b]	-0.081	-0.150

[a] point biserial correlations (r_{pb})

[b] Dummy variables: year level = lower vs upper; marital status= single vs. not single; What country is your passport= Lithuania vs. Other

*p<0.05

**p<0.01

Table 5 shows the estimated loadings of the scale items death anxiety (afraid to die, thoughts of death, & external death), self-efficacy (self-efficacy 1 and self-efficacy 2), religious coping (internal/private& external/social), PTSD (Intrusion, avoidance & hyperarousal) and psychiatric co-morbidity (somatic problems, anxiety, social dysfunction & depression), and the demographic variables (gender & age). Reflective and formative indicators with loadings that were not significantly different from zero were removed to ensure construct validity. However, age was not removed from the analysis despite the fact that the outer model weight was low. The reason for not removing this variable was because it was significantly correlated with PTSD outcome. The correlation matrix for the indicators used in the modelling is given in table 6. The final structural model can be seen in Figure 2. The resulting path coefficients for relationships between constructs are shown in the figure which also indicates their significance. Unlike SEM, PLS analysis does not tell us the degree of model-fit. Instead, it examines predictive capability of the model characterized by the presence of strong construct loadings (>0.60), standardized path coefficients (>0.20) and at least moderate R^2 values. Most of the construct loadings were strong. The path coefficients of the significant paths were also strong (see later) and the average R^2 of the overall model was 0.0861 (average communality=0.6568, average redundancy=0.0799). Death anxiety was significantly associated with self-efficacy (B=-0.2010, SE=0.1337, $p<0.05$) which was in turn associated with psychiatric co-morbidity (B=-0.2600, SE=0.1399, $p<0.05$). Psychiatric co-morbidity was influenced by the demographic variables age & gender (B=0.2120, SE=0.1467, $p<0.05$). In addition, PTSD was also influenced by the demographic variables age & gender (B=0.3230, SE=0.1598, $p<0.05$).

Table 4.5 Loadings and weights of indicators on the constructs (latent variables)

Latent variable	Indicator[a b]	SE	Loading	Weight

Death Anxiety	Afraid to die	0.3685	0.5704*	-
	Thoughts of death	0.2280	0.7092**	-
	External death	1.9734	0.6554**	-
Self-efficacy	Self-efficacy 1	0.1075	0.8551**	-
	Self-efficacy2	0.0451	0.9471**	-
Religious Coping	Internal/Private	0.0138	0.9603**	-
	External/Social	0.0157	0.9606**	-
PTSD	Intrusion	0.0469	0.8829**	-
	Avoidance	0.0707	0.8167**	-
	Hyperarousal	0.0481	0.8312**	-
Psychiatric co-morbidity	Somatic problems	0.0452	0.8129**	-
	Anxiety	0.0404	0.8809**	-
	Social dysfunction	0.1208	0.6310**	-
	Depression	0.0590	0.8244**	-
Demographic	Gender	0.1468	0.9678**	6.23**
	Age	-	-	0.70

[a] The indicators for demographics are formative

[b] All other indicators are reflective

*p<0.05; **p<0.01; ***p<0.001 Significance levels are based on bootstrapped standard errors

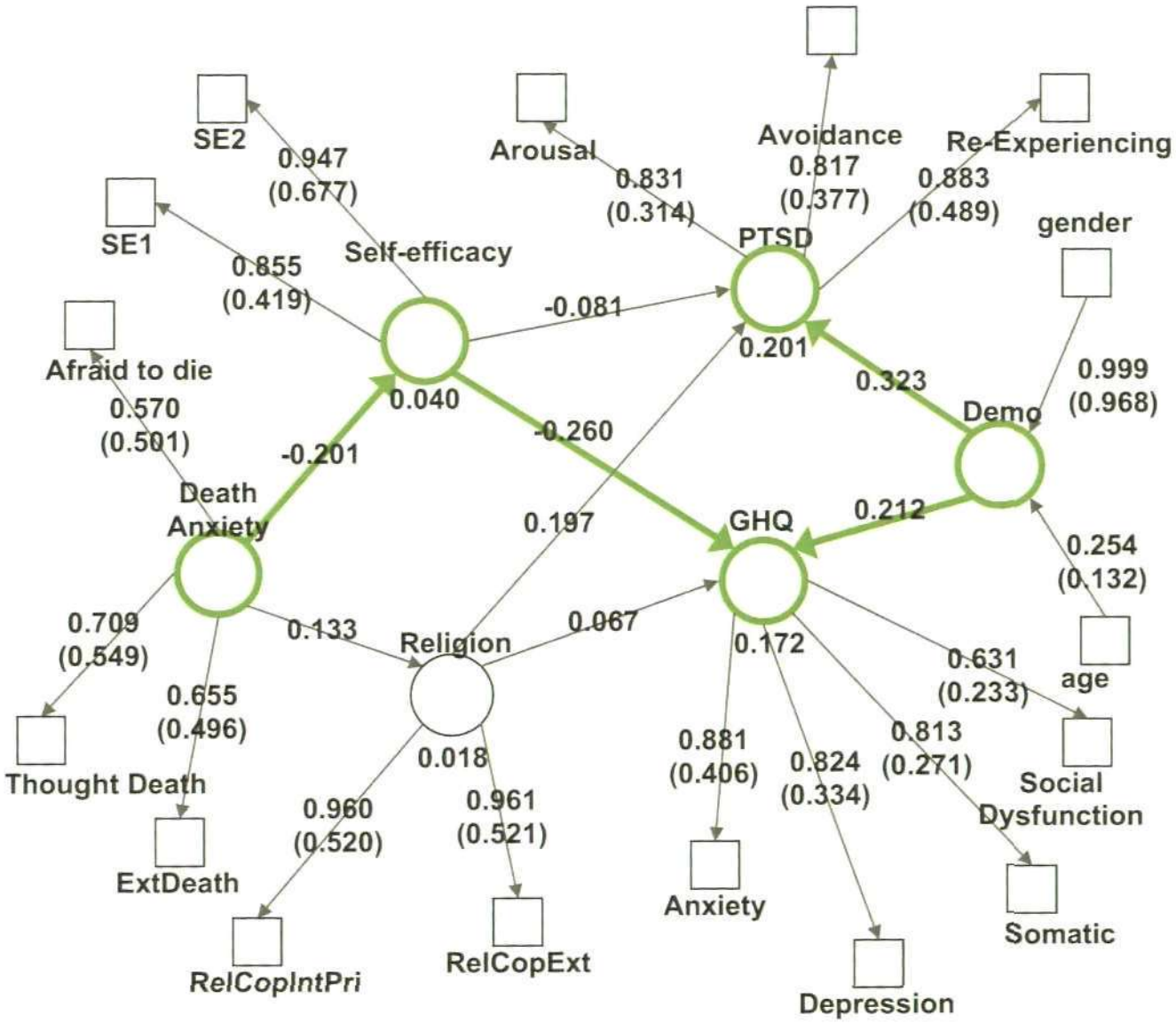


Figure 4.2 PLS pathway analysis

Table 6. Estimated correlations between the transformed variables used in the PLS model

	Afraid Die	Thought Death	Ext Death	Soma	Anx	SocDys	Dep	Intru	Avoid	Arou	SE1	SE2	RelInt	RelExt
Afraid Die	1.0	0.080	0.052	0.101	0.116	-0.065	0.065	0.146	0.140	0.098	-0.067	-0.177	0.042	0.049
Thought Death		1.0	0.243*	0.006	0.109	-0.024	0.213	0.170	-0.048	0.163	0.024	-0.234	0.023	0.099
Ext Death			1.0	0.135	0.237*	0.149	0.260*	0.230*	0.066	0.173	0.028	-0.152	0.178	0.158
Soma				1.0	0.680**	0.352**	0.554**	0.233*	0.236*	0.345**	-0.204	-0.249*	0.071	0.043
Anx					1.0	0.405**	0.594**	0.291*	0.259*	0.385**	-0.280*	-0.264*	0.163	0.105
SocDys						1.0	0.430**	0.053	0.087	0.175	-0.214	-0.217	0.102	-0.030
Dep							1.0	0.167	0.141	0.305**	-0.252*	-0.289	0.163	0.227*
Intrusion								1.0	0.532**	0.616**	-0.070	-0.164	0.329**	0.282*
Avoid									1.0	0.574**	-0.140	-0.228*	0.192	0.279*
Arousal										1.0	-0.158	-0.191	0.296**	0.248*
SE1											1.0	0.644**	-0.016	-0.013
SE2												1.0	0.039	-0.076
RelInt													1.0	0.814**
RelExt														1.0

AfraidDie=feeling that you were going to die, ThoughtDeath=having thoughts about death, ExtDeath= fear something would kill you,

Soma=somatic problems, Anx=anxiety, Social=social dysfunction, Dep=depression, Intru=intrusion, Avoid=avoidance behaviour, Arou=hyperarousal, SE1= Self efficacy pt 1, SE2=Self-efficacy pt 2,

RelInt= Religious coping internal, RelExt= Religious coping external

*p<0.05, **p<0.01

As with the previous study, conceptually the PLS analysis suggested that participants' self-efficacy mediated the relationship between death anxiety and psychiatric co-morbidity. To verify this, the mediation analysis recommended by Baron and Kenny (1986), and the Sobel test were used. Similar to the second study, the correlation between death anxiety and psychiatric co-morbidity was not significant (B=0.101, SE B=0.053, Beta=0.218, ns). The Sobel test also confirmed this result suggesting that self-efficacy did not mediate the relationship between death and psychiatric co-morbidity (Z=,1.40, ns).

Discussion

The aim of study 3 was to explore the relationship between death anxiety, religious coping, self-efficacy, PTSD and psychiatric co-morbidity. The results indicate religious coping has no significant relationship to any variables. Therefore hypothesis 1 and 3 could not be fully supported. Gender did influence the outcome variables which is not surprising as with other research, gender does affect mental health outcomes, specifically in instances of symptom reporting (Kroenke & Spitzer, 1998). However, this dynamic had not emerged in studies 1 or 2.

The results from this study indicate Hypothesis 2 was partially supported, evidenced by the same directional relationship between self-efficacy to death anxiety and self-efficacy to psychiatric co-morbidity as in study 2. Again, as in study 2, the relationship of self-efficacy to PTSD is not supported. Self-efficacy still does not play a mediational role between death anxiety and psychiatric co-morbidity. What is interesting about this finding is that even with a different sample, this relationship holds firm. Even when taking into account religious coping, this dynamic is once again demonstrated. This finding suggests

that self-efficacy is a much stronger factor than religious coping. However, this finding should still be taken cautiously as there was a significant difference in the strength of self-efficacy across groups, which may have influenced the results. Regardless, this continued emergence of self-efficacy is important to note.

The finding that religious coping is not related to the other variables is not entirely surprising considering previous literature. In some studies, religious coping was not a significant variable for death anxiety (Abdel-Khalek & Lester, 2009; Azaiza, 2010; Salter & Salter, 1976; Suhail, 2001). Previous literature has either found this link unsupported or inconclusive. In some studies, religious coping has not been demonstrated as an effective means to handling trauma (Connor, 2003; Glas, 2007; McCoubrie & Davies, 2006; Thomson & Vardaman, 1997). However, the lack of connection between religious coping and outcome variables is somewhat contradictory to previous research. One reason is that when entering self-efficacy into the PLS analysis, much of the variance of religious coping was accounted for. Yet, further analysis revealed that this is not the case. To verify this, regression analysis was carried out. Before entering self-efficacy into regression equation, religious coping did not predict the DAS total (B=0.072, std 0.083, beta =0.086, ns). Nor did religious coping predict psychiatric co-morbidity (B=0.042, stdb= 0.036, beta=0.118, ns). In other words, the reason for religious coping not being correlated with death anxiety and psychiatric co-morbidity was not due to the fact that self-efficacy accounted for a large amount of variance in religious coping.

One could argue that religion, as purported by the participants, is actually a personal experience that does not affect health and well-being. For example, research with cancer patients shows that a significant negative correlation was found between the existential well-being scores and the anxiety and depression scores (McCoubrie & Davies,

2006). However, no correlation was found between the religious coping and well-being scores for anxiety and depression. This study may shed some light on the nature of religious coping; what they conclude is that it is not religious coping that has an effect on mental health, instead it is finding meaning in the trauma (McCoubrie & Davies, 2006). This concept was supported in another study among hospice patients which found that a strong sense of purpose in life, rather than religious coping has a direct positive effect on psychiatric co-morbidity and a direct negative effect on death anxiety (Ardelt & Koenig, 2006). The literature supports that although religious coping is a personal experience, it is helpful to death anxiety and well-being if it elicits a sense of purpose and hope (Ai, Peterson & Huang, 2003; Ardelt & Koenig, 2006; Glas, 2006;).

Another important consideration specific to this study is that, on the whole, this sample did not have high religious coping scores. The question arises whether this type of religious faith leads to a significant degree of commitment and action. This goes back to the idea of religiosity, which as stated earlier shows the degree of faith is important when considering its mediational role (e.g. fellowship, health related behaviour, optimism) on health. In this sample, it appears that the degree of faith is somewhat weak and that their behaviour does not lead them to engage in a kind of mediational religious coping. When reviewing the responses made on the WRCS it appears that the participants do not have a very action-oriented faith. Consider the following responses in table 7.

Table 4.7. Sample questions reflecting religiosity

I do not pray or pray sometimes	69%
I do not read scripture or sometimes read it	85%
I do not attend religious group or sometimes do so	85%
I did not allow or sometimes allow Holy Sprit to guide action	72%

Do not or sometimes confess to God	63%
I do not or sometimes get support from church member	82%
Do not or sometime talk to church leaders	89%
Do not look or sometimes look for lessons from God	64%
Do not or sometimes put problems in God's hand	72%
Do or sometimes pray for strength	61%
Do not or sometimes talk to church members	86%
Do not or sometimes recall a Bible passage	86%
Do not or sometimes go to religious service	86%
Do not or sometime get help from clergy or pastor	91%
Do not or sometimes read a Bible story to solve problems	86%
Do not or sometimes solve problem with Gods help	70%
Do not or sometimes donate time to religious cause	84%
Do not or sometimes share religious beliefs with others	75%
Do not or sometimes or sometimes get involved in church activities	84%
Do not or sometimes base life decisions on religious beliefs	74%
Do not or sometimes find peace by going to a religious place	65%
Do not or sometimes ask someone to pray for them	79%
Do not or sometimes go to a religious counsellor	91%
Do not or sometimes recite a psalm	90%

However, the sample did indicate a level of morality in their responses. About half (60%) "often try not to be sinful" and (79%) "often try to make up for mistakes." It should also be noted that there was no point in comparing because the variations are so small.

This lack of religiosity could be due to cultural factors. Western cultures have demonstrated the role of religious coping; however, this leads to questions about the role of religious coping in countries where religion was politically repressed historically. Most of the students come from post-Soviet societies and were raised by parents that grew up in a world where outward religious expression was dangerous. Does the political and historical environment of eastern and northern Europe suggest religious coping is not as widely used as in western cultures? Perhaps, but research indicates that people in post-Soviet culture did rely on religion as a method of coping with trauma (Lehtsaar & Noor, 2006). Yet due to the historical role of institutionalized religion being largely absent, there is a greater emphasis on personal spirituality. Although not the crux of this thesis, cultural factors surrounding the role of religion as a coping mechanism should be considered when interpreting the results.

An important consideration of this study lies specifically with the assessment of religious coping. Considering the aforementioned idea of personal spirituality, religious coping may not accurately capture this sense of spiritual awareness in the participants. The WORCS definition of religion could be considered an over-simplified model of religion; some researchers have called for a multi-dimensional and narrative framework for understanding people's experience of religion (Brown, 1987; Ganzevoort, 1998). This limitation on understanding religious coping did not differentiate religious identity, belief, knowledge, attitude, groups, experiences and tradition.

It could also be argued that because of the age group, even if a more spiritual and personal faith could be measured, there would not be significant differences. Due to this limitation, further research need to go beyond a university sample, broadening the sample to include more religiously diverse people. In addition, this study did not identify whether a

participant was religious or not. Future research should explore levels of religiosity and strength of faith in relation to death anxiety and outcome variables.

Summary

The results from study 3 show the pattern relating self-efficacy to death and well-being. However religious coping was not supported as an important variable. As stated earlier, looking beyond religious coping and towards the subject of finding meaning in the face of trauma is possibly more relevant. It also reflects the element of "existential attitude" presented by the subjective experiences of participants in study 1. The next study will investigate existential attitude as a meditational variable between death anxiety and outcome variables of PTSD and psychiatric co-morbidity while at the same time continue to explore the role of self-efficacy.

CHAPTER FIVE

Introduction

In order to understand death anxiety or even death from an existential perspective, it is important to first understand what it means to be alive. The existential movement grew in its impact on psychology largely in response to the trauma of World War II. Based in part on historical romanticism, existentialists recognized there was no rational basis for life and maintained that feelings of dread and apprehension are a normal part of what it means to be human (Barrett, 1962). This form of self-questioning touched upon feelings of alienation and the fragility of human life and the threat of nothingness. This lack of meaning in life is not advocating the withdrawal from life; instead, it admonishes the individual to seek out meaning and strongly advocates human choice. Through this freedom to choose, what it means ultimately to be human is to create our own existence (Barrett, 1962; Janoff-Bulman & Yopyk, 2004; Sartre, 1966). People ultimately are in search of a meaningful life even in the face of death and meaninglessness (Yalom, 1980). Human striving is about creating destiny and choosing the future.

Death then provides a unique opportunity according to existentialists, as described by philosopher Friedrich Nietzsche's (2007) famous notion that which does not kill us can only make us stronger. Could an existential model for living in spite of and because of great tragedy give credence to another mode of resilience towards death anxiety? To understand the role of existential attitude as death anxiety resilience, it is important to delve deeper into the ideas of finding meaning in life-threatening events. In order to explore this further, the ideas of existential psychologist Viktor Frankl provide a very useful framework (Frankl, 2006). He identifies several aspects of meaning that can help formulate a definition of existential attitude.

In Viktor Frankl's account of his concentration camp experiences, he discusses the role of will and choice (Frankl, 1985). In reflecting on his own experience and the thoughts

in the mind of a concentration camp prisoner, Frankl identifies several negative reactions experienced by all inmates albeit to differing degrees: shock, apathy, depersonalization, moral deformity, bitterness, and disillusionment. Being surrounded by such suffering and even death had a specific effect on the mental health of the prisoners. However, Frankl asserts that even in such horrific circumstances, meaning must be found in all aspects of life, including suffering and even death. Frankl was a fervent believer in choice and free will, and his response to the environment of death was that he choose not to lose hope, but to create hope and hold on to it (Frankl, 1985,1988, 2006). As a result, Frankl identifies the first component of meaning, choosing to create hope.

Secondly, in order to create meaning, people must take responsibility for answering the questions that life's problems present.

> Freedom, however, is not the last word. Freedom is only part of the story and half of the truth. Freedom is but the negative aspect of the whole phenomenon whose positive aspect is responsibleness. In fact, freedom is in danger of degenerating into mere arbitrariness unless it is lived in terms of responsibleness (Frankl, 2006, p. 209)

Frankl asserts that it is the destiny of all human beings to experience suffering and all must take the responsibility to endure it and find meaning in that suffering. His focus on taking responsibility results in two important components of finding meaning in trauma. First is the idea that it is something that can be managed. Secondly is the idea that an individual has the personal strength to manage it and survive. This responsibility rests on the belief that one has the ability, the support, the help, or the resources necessary to take care of things, and those things are manageable and within control. For Frankl, this responsibility includes more than just oneself, but also a greater responsibility to others and indeed society (Frankl, 1985, 1988, 2006).

Survival, then, relies on a personal belief system in which meaning as mission or purpose in life, thus a will to meaning are the choices made to fulfil that purpose (Frankl, 1988, 2006). This third component asserts that purpose in life forms the motivation to

"will" said meaning. Even in the face of great adversity or trauma, meaning is not defined by external circumstances; instead humans must stand against traumatic circumstances and make a decision as to how to respond to these traumatic circumstances. This decision to rise above traumatic life events and choose to live out one's own purpose is an important fundamental principle to determining meaning. In other words, it is a belief that things in life are purposeful and can be appreciated for their inherent worth. This purpose then provides reason to care about what happens (Frankl, 1985, 1988, 2006). Frankl touches upon the need to base this purpose and meaning on something transcendent and beyond the realm of human experience. Spirituality is a way for a person to get out of his/her own mental life and instead to dwell on something outside of themselves. Frankl felt this level of spirituality provided a purpose for many of the prisoners he encountered in the concentration camp and this form of meaning was crucial to survival (Frankl, 2006).

Building on the ideas of choice, responsibility and purpose is the issue of futuristic orientation. Instead of getting stuck in the reality of current trauma, there is choice to will "somethingness", a goal of some sort (Chung, 1995; Frankl, 1988, 2006). Here Frankl appears to be uncovering underlying coping mechanisms to manage trauma. A futuristic orientation to life allows for the possibility of new opportunities and experiences. Having goals in the future helps the individual move beyond the traumatic environmental circumstances and have a greater appreciation for life itself (Frankl, 1985, 1988, 2006). In some sense, this also allows the individual to experience a feeling that they have the ability to understand and perhaps predict what can happen in the future,

Frankl's model for the creation of meaning gives one picture of an existential framework in which to handle life-threatening events. Frankl emphasises choice, responsibility, purpose and futuristic orientation as a way to develop meaning despite an environment of trauma, suffering and death. From a theoretical and anecdotal standpoint, finding meaning in the face of life-threatening events makes sense, but is there any

evidence to suggest this is valid? One study measured the effects of trauma on the participants' sense of meaning in life and results indicated that trauma occurring in participants aged 18 and 30 years old was associated with a diminished sense of meaning in life; yet results also indicated that emotional support reduces the negative affects of trauma on meaning in life, whereas interpersonal conflicts increase the negative effects (Krause, 2005). Prouix and Heine (2006) propose that human beings create mental representations of expected relations which in turn create a sense of meaning. During traumatic times, people initiate meaning maintenance which involves compensatory affirmation of meaning structures (Prouix & Heine, 2006). The process then reinterprets events in a way that allows for the fortifying of self-esteem and the need for symbolic immortality. Trauma is a threat in that it can jeopardize one's sense of meaning. Thus, following a trauma, meaning maintenance is engaged to preserve self and threats to mortality.

Salutogenesis

Frankl sets the precedent for the importance of finding meaning even in the face of trauma and death. Evidence suggests that finding meaning in traumatic events greatly facilitates the individuals' ability to cope (Pennebaker, 1989; Wortman & Silver, 1992; Antonovsky's, 1979). The term "salutogenesis" comes from the work of Aaron Antonovsky; he developed a theory from his studies of how people manage stress and improve their overall well-being. Antonovsky observed that stress does not necessarily lead to illness. In fact, some people achieve well-being despite their exposure to potentially harmful stressors. The "salutogenic" theory states that a specific stressor could be pathogenic, neutral or salutary depending upon individuals coping resources (Antonovsky, 1979). Generalised resistance resources (GRRs) are coping mechanisms which attempt to deal with psychosocial stressors. These GRRS could be worldviews, financial, social

relationships or any resources that manage traumatic stress (Antonovsky, 1979). However this model looks at both meaning and coping strategies. In other words, these coping strategies are also used to make sense of trauma. This "sense of coherence" is when individuals create meaning to a trauma which then allows them to comprehend what has happened. In addition, this meaning provides some ability to manage the events surrounding the trauma and thus the ability to cope with the trauma itself (Antonovsky, 1987).

Sense of coherence enables a person to move beyond actual traumatic events and create positive cognitive appraisals of them. This concept is akin to Frankl's view that trauma can create opportunity for positive outcomes. As with Frankl, when meaning is not created, negative mental health difficulties can ensure. For Antonovsky, these negative outcomes occur when stress overwhelms an individual's sense of coherence. In other words, if their belief system is challenged to the point in which they believe they cannot make sense of it anymore, the resulting effect will be detrimental to their overall well-being. Antonvosky states that there are aspects to this sense of coherence that create resilience against that stress. The implication, then, is that people must make coherent sense of traumatic events in order to improve well-being.

Antonovsky's model of sense of coherence has three dimensions; comprehensibility, manageability and meaningfulness. Comprehensibility is a belief system in which a person see things happening in a predictable way which in turn allows them understand life events and predict future life events as well (Antonovsky, 1979). Manageability is a belief that one has the strengths and resources to manage and control life's events (Antonovsky, 1979). Finally, meaningfulness is the belief that life events have purpose and that the individual is motivated to make sense of them (Antonovsky, 1979). This final component of Antonovsky's model fits well within the existential camp of psychology in the sense that humans strive to make meaning out of life. Interestingly, this

link between existential meaning and trauma is made by Antonovsky (1979; 1987) and he insists that research consistently demonstrates that sense of coherence predicts positive health outcomes in spite of trauma.

Studies have sought to examine sense of coherence in light of trauma and PTSD. For example one study examined accident victims and found that a total sense of coherence correlated negatively with the development of psychopathology, PTSD and psychiatric co-morbidity (Frommberger, Stieglitz, Staub, Nyberg, Schlickewei, Kuner & Berger, 1997). These results indicate a definite link between sense of coherence with PTSD and psychiatric co-morbidity. Positive adaptation in the face of life-threatening events has been the subject of significant research and studies show that a salutogenic approach is helpful in understanding a positive adaptation to trauma (Garmezy, 1971, 1974; Layne, Warren, Watson & Shalev, 2007; Luthar, 2006; Masten, 2001; Werner & Smith; 1982).

Some studies have critiqued sense of coherence and its stability following a trauma. In other words, is it a temporary state or long lasting trait? A longitudinal study done by Schnyder, Buchi, Sensky and Klaghofer (2000) found that sense of coherence was significantly correlated to psychiatric co-morbidity among accident victims. The victims showed high stability of sense of coherence after repeated measures were given through 6-12 month study. It was concluded that sense of coherence is a relatively stable trait measure; however traumatic events may alter a person's worldview and thus sense of coherence (Schnyder et al., 2000).These findings suggest that sense of coherence is not merely a proxy measure of PTSD and psychopathology but an independent measure of individual world view (Schnyder et al., 2000).In the aftermath of life-threatening events, survivors must struggle to rebuild a life perspective that has meaning. Previous studies have found trauma to have a detrimental effect on a person's sense of meaning (Denkers & Winkel, 1995; Janoff-Bulman, 1992; Mitchell-Gibbs & Joseph, 1996; Solomon, Lancu &

Tyano, 1997). This negative change in meaningfulness was found as a result of traumatic experience. These studies demonstrate the potentionally harmful consequences of life-threatening events and highlight the consequences of a weak sense of coherence.

However, shifting from the negative impact of trauma, there are studies that indicate one's existential attitude can play a positive role in the experience of post-traumatic stress. The salutogenic approach gives rise to the possibility that trauma can be positive. Contrary to a purely pathogenic perspective on PTSD, the salutogenic theory gives the opportunity for an individual to experience growth following trauma. As pointed out by Frankl, life-threatening events serve as a reminder to not only consider the purpose of their life or necessary changes, but also as a wake-up call to create a meaningful existence (Frankl, 2006). In the salutogenic perspective, individuals can pull together resources to maintain mental and physical health in the face of trauma, oftentimes resulting in finding meaningful purpose to the specific event (Antonovsky, 1979; Tedeschi & Calhoun, 1995). A common after-effect of experiencing a life-threatening event is a decreased concern with extrinsic values and an increased commitment to intrinsic personal values (Bargh & Cahrtrand, 1999; Greyson & Ring, 1984). In addition, many studies show behavioural and attitudinal life changes after a life-threatening event (Grey, 1985, Kinnier, Tribbensee, Rose & Vaugh, 2001; Noyes, 1982; Ring, 1984).

In addition to sense of coherence, studies emphasizing post-traumatic growth captures the idea of a "new lease on life" as reflected in PTSD literature. It has been suggested that growth following trauma occurs when schemas are changed by traumatic events (Everly, 1995). Trauma takes a central role in defining one's life story as a source of reflection and creates a positive evaluation of post-traumatic life (Collins, Taylor & Skokan, 1990; Taylor, Lichtman & Wood, 1984; Tedeschi & Calhoun, 1995; Zeidner & Ben-Zur, 1994). Participants have reflected on the positives changes they have experienced following their trauma and, in their own self-appraisal, see this as a positive

growth experience. That is not to say that their lives have not been disturbed by the life-threatening event, but participants report it has produced positive outcomes. For example, individuals report the need to repair relationships, to make things right between themselves and their family. Survivors see the trauma itself as catalysts to make this positive change in life and in turn they reframe the "trauma" as opportunity (Tedeschi & Calhoun, 1995).

It is important to point out that growth does not happen as a result of the trauma itself, but by the person's attempts to create a new reality after trauma; this struggle determines the extent to which post-traumatic growth occurs (Calhoun & Tedeschi, 1995; Tedeschi & Calhoun, 1996; 2004). This is a shift in thinking about trauma from being a purely pathogenic event. In line with salutogenic theory, trauma need not be a disabling experience. Research suggests that posttraumatic growth is more prevalent in survivors than PTSD and psychiatric co-morbidity despite acute post-traumatic stress being present in most victims of trauma (Calhoun & Tedeschi, 1995; Tedeschi & Calhoun, 1996; 2004). The literature on post-traumatic growth documents several changes including greater appreciation of life, changed sense of priorities, emotionally "warmer", relational growth, sense of personal strength, new possibilities in life and spiritual development. They also point to the ability to grieve traumatic events along with social support as a way to facilitate growth (Tedeschi & Calhoun, 2004).

This perspective on growth following trauma fits within Frankl's existentialist framework because it helps the individual create a meaningful narrative of the trauma and thus experience post-traumatic growth. Having to confront questions of meaning will produce either a post-traumatic growth adaptation or a maladaptive lack of meaning, which increases the risk for PTSD and psychiatric co-morbidity (Calhoun & Tedeschi, 1995).

Previous studies support this notion as well. Research shows that having dealt with previous traumas, survivors exhibit an inoculation effect to later stressors (Meichenbaum,

1985; Aldwin, Sutton & Lachman, 1996; Elder & Cripp, 1989; Shanan & Shahar, 1983). This rebuilding of meaningful schemas has allowed for greater resilience in overall mental health. Changes in meaning are often demonstrated by positive changes in relationships, social support, spiritual change and a sense of personal strength (Davis, 2001; Lehman, Davis, Delongis, Wortman, Bluck, Mandel, Ellard, 1993; Updegraff & Taylor, 2000). Studies have indicated that translating post-traumatic growth cognitions to actions will result in a decrease of anxiety (Hobfoll, Hall, Canetti-Nisim, Galea, Johnson & Palmieri, 2007). These actions, in turn, allow people to make positive changes which influence their overall appreciation of life and overall well-being. Many times, this growth extends to interpersonal changes as well; survivors often reporting increased relational closeness (Janoff-Bulman, 2000; Tedeshi & Calhoun, 1996; Singer, 1996). That is not to say that survivors of trauma are necessarily happier, but they do report greater purpose in life and sense of fulfilment than they experienced prior to the traumatic event (Greyson, 1992, 1996; Noyes, 1982).

However, the results are not entirely conclusive. Some studies have looked specifically at growth after trauma to investigate if psychiatric co-morbidity is reduced or exacerbated by posttraumatic growth, yet the studies have been inconsistent (Hobfoll et al,, 2007). In fact, some studies have found posttraumatic growth to be related to greater psychological distress and reactionary tendencies.

Meaning and death anxiety

The emphasis on salutogenesis, as seen by sense of coherence and post-traumatic growth, has demonstrated its importance with trauma, but can this also be applied to death anxiety? Previous literature supports this notion, for example, the creation of meaning has beneficial effects on one's health, and specifically that sense of purpose and meaning in life reduces death anxiety even in the face of terminal illness (Arndt et al., 2006). Efforts to

cope with death anxiety positively affected health by improving health conscious behaviour even if it has an additional negative affect of denying vulnerability to disease. This research found that adaptive coping associated with health behavioural interventions followed focal attention of death related cognitions (Arndt et al., 2006). Therefore, immediately after these death related cognitions, salient health optimism was detected. In other words, coping with death anxiety improved healthy behaviour interventions and optimism.

It seems that dual existential systems are created that both function as a buffer against death anxiety and a "mortality-induced" growth response (Cozzolino, 2006). The possibility of either a growth-oriented or defence-oriented motivational state is theorised to be mediated by self-regulated processes. The emphasis then is on the individual's existential systems via different information-processing styles (Cozzolino, 2006). This is sometimes phrased as the "wake-up vs. defensiveness" view of trauma. With genuine acknowledgement of death anxiety, individuals gain insight into personal meaning which gives one motivation to pursue life despite traumatic life events (Heidegger, 1982). Death anxiety has been shown to increase relational strivings due to experiences of vulnerability and finitude (;Greenberg, Koole & Pyszczynski, 2004; Van der Kolk, McFarlane & Wesaeth, 1996). Thus death anxiety triggers a need for meaning and evaluation of life, thus leading to a shift towards the pursuit of personally fulfilling lives (Martin, Campbell & Henry, 2004). The research suggests that confrontations with life-threatening experiences results in a shifting of personal goals, contrary to the idea that death anxiety affects views on externalised systems. Studies indicate that prolonged exposure to death may in fact lead people to move beyond death anxiety and instead maintain intrinsic goals that can actually have positive effects of mental well-being (Lykins, Segerstrom, Averril, Evans, & Kemeny, 2007). This research, then, creates a framework in which the duration of

exposure to death and one's own personal goals are more important variables in determining the impact of psychiatric co-morbidity.

At this point it's important to develop a model in which to understand death anxiety resilience. This model is based on the notion of the salutogenic properties of trauma. In other words, existential attitude functions as a salutogenic mode of death anxiety resilience. Specifically, death anxiety prompts people to engage in the salutogenic process of finding meaning. Survivors of life-threatening events use an existential attitude to mediate the effects of death anxiety on PTSD and mental health. It important to remember that this theory is different than a pathogenic model of death anxiety. Death anxiety is not necessarily something that creates mental health difficulties. Instead, it is an opportunity to create meaningful interpretations. It is suggested that having an existential attitude with lower emphasis on sense of coherence and post-traumatic growth should have adverse effects on outcome variables. This existential attitude creates a salutogenic form of death anxiety when sense of coherence and post-traumatic growth mediate to improve mental health and PTSD symptomology. It turns death anxiety from a potentially pathogenic force to a salutogenic property.

Purpose of Study 4

Based on the study 1 interviews with participants, it would have seemed that religious coping would be significantly linked with PTSD and psychiatric co-morbidity. As suggested, the model for religious coping may not be sufficient. This invokes a need for greater exploration to conceptualize the ways in which individuals find meaning in the traumatic event. Based on the results from phase 2, participants reflected an existential attitude in finding meaning in the trauma they faced. Despite the link between meaning and well-being, there is a gap in the literature expanding upon the existential concept of death anxiety. If death anxiety is an existential foundation of the human condition, does sense of coherence then play a play a role of mediating its effect on PTSD and psychiatric

co-morbidity? Can post-traumatic growth provide victims of trauma the kind of meaning that allows them to be transformed by tragic events? Although these two aspects of existential attitude have been studied, previous research has not looked at self-efficacy, sense of coherence and post-traumatic growth together as mediators for death anxiety.

Therefore the aim of this study is to determine whether self efficacy, along with sense of coherence and post-traumatic growth mediate the relationship between death anxiety with PTSD and psychiatric co-morbidity. It is postulated that as self-efficacy, sense of coherence and post-traumatic growth increases, PTSD and psychiatric co-morbidity will decrease.

The hypotheses for study 5 are as follows:

1) Death anxiety is related to self-efficacy, sense of coherence and post-traumatic growth
2) Self-efficacy is related to PTSD and psychiatric co-morbidity
3) Sense of coherence is related to PTSD and psychiatric co-morbidity
4) Post-traumatic growth is related to PTSD and psychiatric co-morbidity

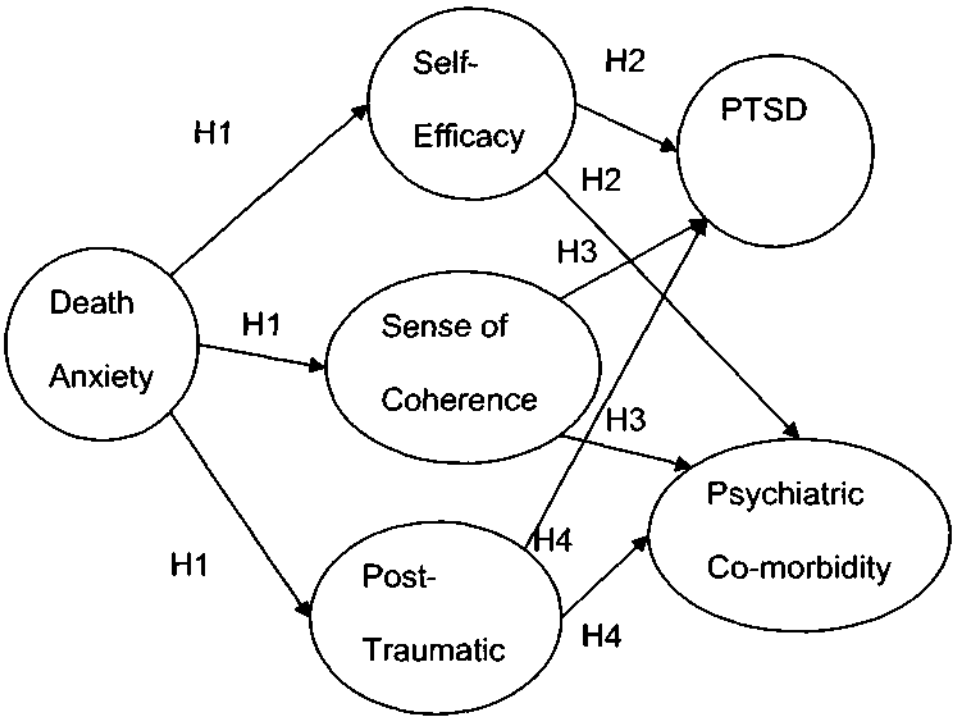


Figure 5.1 Hypothesis model

Notes: H1 to H4 are hypotheses 1 to 4

Methods

Participants

In this fourth study, 110 university students participated in the study (M=41, F=69) with an average age of 21.26 (SD=1.77). Almost all (97.3%) of the students were single. A majority (61.8%) of the students were Lithuanians and most were an upper level year group (82.7 %) at the time of the study. Less than half (39.1%) participants reported experiencing a past traumatic event.

Procedure

The procedure in this study was the same procedure described in the previous three studies. Following the ethical approval from the university, students from another social science module different from the other studies were recruited for the research. No

participants were duplicated. They completed demographic information, Posttraumatic Stress Diagnostic Scale, General Health Questionnaire-28, Death Anxiety Scale, Perceived Self-efficacy Scale, Post-traumatic Growth Inventory and Sense of Coherence Scale. Participants that did not experience a life-threatening event formed the control group. Further details of that procedure can be found in the first study. The Post-traumatic Growth Inventory and Sense of Coherence Scale were translated into Lithuanian and Russian and back translated into English. The translation procedure was described in Study 1.

Measures

1) Demographic information was gathered using the same questions as phase 1 of the first study.

2) The Posttraumatic Stress Diagnostic Scale (PDS) (Foa, 1995) assesses post-traumatic stress disorder symptoms and measures re-experiencing, avoidance and hyperarousal symptoms. Further details of this scale can be found in the previous study.

3) The General Health Questionnaire-28 (GHQ-28) (Goldberg & Hillier, 1979) measures general psychological morbidity and global dysfunction. The questionnaire yields four subscales: somatic problems, anxiety, social dysfunction and depression. Further details of this scale can be found in the previous study.

4) The Death Anxiety Scale *(DAS)* measures the level of death anxiety. Further details of the scale can be found in the previous study.

5) Perceived Self-efficacy Scale (Schwarzer, 1992) measures coping with daily problems as well as adaptation after experiencing all kinds of stressors. Further details of this scale can be found in study 2.

6) Posttraumatic Growth Inventory (PTGI) (Tedeschi & Calhoun, 1996), is a 21-item scale that measures the degree of reported positive changes experienced in the struggle with major life crises. The test measures five subscales (relationship to others, new possibilities, personal strength, spiritual change and appreciation of life). The scale includes items that assess the degree to which the individual reports specific positive changes attributed to the struggle with trauma; for example, an increase in "A feeling of self-reliance," and "A sense of closeness with others." The inventory has acceptable construct validity, internal consistency (.90), and test-retest reliability over a 2-month interval (.71).

7) Sense of Coherence-13 (Antonovsky 1987) measures an individual's global orientation towards coping via three subscales; manageability, meaningfulness and comprehensibility. This scale has been associated with more adaptive coping to stress. The 13-item Sense of Coherence Questionnaire, Short Form, has a 7-point response format where 7 represents the strongest sense of coherence and 1 represents the weakest sense of coherence (Antonovsky, 1987). The alphas of 16 studies using SOC-13 range from 0.74 to 0.91.The systematic procedure used in scale construction and examination points to a high level of content, face and consensual validity. The data sets available point to a high level of construct validity for SOC-13 (Antonovsky, 1993).

Data Analysis Plan

Descriptive statistics were used to describe the demographic information of the participants. T-test, Chi-Square and multivariate analysis of variance were used to compare the life threatening event and control groups in terms of the differences of mean and percentage scores. Correlation coefficients including point biserial correlation (r_{pb})

were used to establish the relationship between demographic variables and outcome variables. Point biserial correlation was used when one of the variables in the correlational analysis was dichotomous. Partial Least Squares (PLS) analysis was used to examine the interrelationship between the constructs in the hypothesized model. The mediation procedure recommended by Baron and Kenny (1986) and the Sobel test, were used to investigate mediational relationships indentified in the final model.

The assumptions and diagnostics related to multiple linear analyses were examined. Due to non-normality, the PDS (avoidance, arousal, and PTSD total) were subjected to a square root transformation. The variables of the GHQ-28 (somatic problems, anxiety, social dysfunction), the Self-efficacy total and Post-traumatic growth subscale of personal strength were subjected to a logarithmic transformation. No outliers were detected during the exploration of diagnostics (Mahalanobis ≥ 3 SD). Following exploration and transformation, assumptions relating to multivariate normality, linearity and homoscedasticity were met. Regression imputation was used in order to address the missing data. Less than 1% of missing data were imputed that way.

Results

The internal consistency of Posttraumatic Growth Inventory (PGI) and Sense of Coherence were analysed using alpha reliability. The Posttraumatic Growth Inventory shows good reliability for the five subscales. Relating to Others (α=0.868) New Possibilities (α=0.861), Personal Strength (α=0.850), Spiritual Change (α= 0.758); Appreciation of Life (α=0.756). In addition, the Sense of Coherence also shows acceptable internal consistency (α= 0.577). However, the reliability of the Sense of Coherence subscale was somewhat weak: meaningfulness (α=0.435), comprehension (α= 0.461) and manageability (α=0.418).

Thirty nine (39.1%) of the participants of the whole sample reported a life-threatening event and the remaining 71 (60.9%) did not. In the life-threatening event group, on average they reported 2 events (SD=2.92). About a quarter (23.3%) experienced one event while over a third of the participants (34.9%) at least 2 events. The remaining subjects experienced 3 or more events. Using the PDS diagnostic criteria, 13 people (11.8%) met the criteria for full PTSD and 30 people (27%) did not. Table 1 shows the demographic information of the PTSD, no-PTSD and control group. It should be noted that 100% of the PTSD group were single.

Table 5.1 Demographic details

	PTSD Group		No PTSD Group		Control	
	Mean	SD	Mean	SD	Mean	SD
Age	21.69	1.93	21.10	1.72	21.25	1.77
	N	%	N	%	N	%
Male	3	23.1	11	36.7	27	40.3
Female	10	76.9	19	63.3	40	59.7
Level						
Year 1			2	6.7	3	4.5
Year 2	3	23.1	5	16.7	6	9.0
Year 3	2	15.4	9	30.0	19	28.4
Year 4	8	61.5	14	46.7	39	58.2
Marital Status						
Single	13	100	30	100	64	95.5
Married					2	3.0
Co-habitating					1	1.5
What country is passport from?						
Lithuania	7	53.8	18	60.0	43	64.2
Latvia			1	3.3		
Belarus	2	15.4	2	6.7	6	9.0
Russia			1	3.3	3	4.5
Ukraine	1	7.7	4	13.3	6	9.0
USA	2	15.4	4	13.3	9	13.4
Other	1	7.7				

Between three groups, no significant differences were found for age [F (2,107)=0.50, ns], gender (Fisher's exact χ^2 =1.29, df=2, ns), year level (Fisher's exact χ^2 =2.06, df=2, ns), marital status (Fisher's exact χ^2 =1.12, df=2, ns) and nationality (χ^2 =0.55, df=2, ns).

Comparing the life-threatening events group, on average, the PTSD group experienced more events that the no-PTSD group and there was a significant difference between them (t=1.39, df=41, $p<0.05$). In addition, the full PTSD group on average experienced the life-threatening event which bothered them the most almost five years ago while the no-PTSD group experienced this event just over five years ago; there was no significant difference between groups (t=-0.11, df=41, ns). Focusing on the specific life threatening event, the PTSD group was five times more likely to be physically assaulted than the no-PTSD group (OR=5.57, 95% CI:1.22-25.36).

Table 5.2 Life-threatening event which bothered the most

	PTSD Group		No PTSD Group	
Life threatening events	Number	%	Number	%
Serious accident	5	38.4	19	63.3
Physical assault by family member or someone you know	1	7.7		
Physical assault by a stranger	6	46.2	4	13.4
Sexual assault			3	10.0
Life-threatening illness	1	7.7	4	13.3
	Mean	SD	Mean	SD
Onset of the event (in months)	58.84	54.08	60.8	51.58
Number of life-threatening events	3.76	5.01	2.4	1.19

Table 3 describes the means and standard deviation of psychiatric co-morbidity, death anxiety, self-efficacy, sense of coherence and post-traumatic growth of the three groups. The results show no differences between groups for somatic problems [F (2,93)=2.75,ns], anxiety [F (2,93)=0.79, ns] and depression [F (2,93)= 0.19,ns]. However, there was a marginal difference for social dysfunction [F (2,93=3.00, p=0.05], specifically the full PTSD had higher social dysfunction than the no-PTSD ($p<0.05$) (Post Hoc LSD). In addition there were no significant differences between group for death anxiety [F (2,93)=0.49, ns] and self-efficacy [F (2,93)=0.27,ns]. Turning to sense of coherence, there were no significant differences between groups on comprehensibility [F (2,93)=2.74, ns] and meaningfulness [F (2,93)=0.66, ns]. However, manageability was significantly different

[F (2,93)=3.52 , p<0.05] between groups. The no-PTSD group had a significantly higher level of manageability than the control group (p<0.05) (Post Hoc, LSD). Finally, looking at posttraumatic growth, there were no significant differences for new possibilities [F (2,93)=0.32, ns], relation to others [F (2,93)=0.23,ns], personal strength [F (2,93)=0.32, ns], appreciation of life [F (2,93)=1.61, ns] and spiritual change [F (2,93)=0.24, ns].

Table 5.3 PTSD vs. Non-PTSD; mean scores for GHQ-28, DAS, SE, SOC, and PTG

	PTSD Group		No PTSD Group		Control	
	Mean	STD	Mean	STD	Mean	STD
GHQ-28						
Somatic	18.07	5.54	14.37	4.47	14.71	3.70
Anxiety	15.84	6.44	13.72	4.47	14.53	4.62
Social Dysfunction	17.00	4.70	14.37	2.19	14.32	2.27
Depression	11.69	3.88	10.89	3.59	10.90	4.77
DAS						
	7.61	2.56	7.13	2.52	6.73	2.55
Self-efficacy						
Total Score	32.92	6.52	31.51	5.13	32.21	4.65
SOC						
Comprehensive	18.92	4.75	21.44	4.22	19.44	4.37
Management	15.84	4.68	18.41	2.97	16.31	3.69
Meaning	17.23	3.21	17.31	3.27	16.55	3.08
PTG						
New Possibilities	15.30	6.21	13.78	6.61	14.24	5.09
Relation to others	18.15	7.39	16.53	7.33	16.89	6.84
Personal strength	13.53	5.91	12.32	5.40	12.78	4.76
Appreciation of	11.46	5.01	10.28	3.87	9.31	3.61

life						
Spiritual Change	6.30	2.92	5.64	3.23	5.92	2.80

Prior to the PLS analysis of establishing the relationship between death anxiety, PTSD, psychiatric co-morbidity, sense of coherence and posttraumatic growth, the demographic variables, the number and type of life-threatening events and time of onset) needed to be controlled. Correlation coefficients were carried out and showed that the demographic variables were not significantly related with PTSD and Psychiatric Co-morbidity. Therefore these variables were not used in the model (see table 4).

Table 5.4 Correlation coefficients between demographic variables and PTSD & Psychiatric Co-morbidity

	PTSD	Psychiatric Co-morbidity
Age	0.138	0.120
Gender[a]	0.201	0.098
Year level[a,b]	0.046	-0.022
What country is your passport from[a,b]	-0.015	0.023
Number of life-threatening events	-0.050	-0.040
Type of life-threatening events[a,b]	0.254	0.221
Onset of life threatening events[a,b]	0.176	0.175

[a] point biserial correlations (r_{pb})

[b] Dummy variables: year level = lower vs upper; marital status= single vs. not single; What country is your passport= Lithuania vs. Other

Table 5 shows the estimated loadings of the scale items death anxiety (afraid to die, thoughts of death, & external death), self-efficacy (self-efficacy 1 and self-efficacy 2), sense of coherence (comprehensibility, manageability, meaningfulness), posttraumatic growth (new possibilities, relation to others, applied to life, spiritual change, personal strength), PTSD (intrusion, avoidance & hyperarousal) and psychiatric co-morbidity (somatic problems, anxiety, social dysfunction & depression). Reflective indicators with loadings that were not significantly different from zero were removed to ensure construct validity. The correlation matrix for the indicators used in the modelling is given in table 6. The final structural model can be seen in Figure 2. The resulting path coefficients for

relationships between constructs are shown in the figure which also indicates their significance. Unlike SEM, PLS analysis does not tell us the degree of model-fit. Instead, it examines predictive capability of the model characterized by the presence of strong construct loadings (>0.60), standardized path coefficients (>0.20) and at least moderate R^2 values. Most of the construct loadings were strong.

The path coefficients of the significant paths were also strong (see later) and the average R^2 of the overall model was 0.0626 (average communality=0.5306, average redundancy=0.0381). Death anxiety was significantly associated with self-efficacy (B=-0.283, SE=0.064, $p<0.05$) which was in turn associated with psychiatric co-morbidity (B=-0.891, SE=0.328, $p<0.05$). Post-traumatic growth was significantly associated to PTSD (B=-0.213, SE=0.042, $p>0.05$).

Table 5.5 Loadings and weights of indicators on the constructs (latent variables)

Latent variable	Indicator[a]	SE	Loading
Death anxiety	Afraid to die	0.1373	0.7738***
	Thoughts of death	0.1487	0.8579***
	External death †	0.1173	0.7697
Self-efficacy	Self-efficacy 1	0.0133	0.9976***
	Self-efficacy2	0.0128	0.9976***
Sense of coherence	Comprehensive	0.1408	0.9523***
	Manageable	0.1544	0.9631***
	Meaning	0.1438	0.9467***
Post-traumatic growth	New possibilities	0.0014	0.9953***
	Relation to others	0.0035	0.9887***

	Applied to life	0.0009	0.9975***
	Spiritual change	0.0010	0.9970***
	Personal strength	0.0018	0.9939***
PTSD	Intrusion	0.0147	0.9538***
	Avoidance	0.0356	0.9251***
	Hyperarousal	0.0136	0.9661***
Psychiatric co-morbidity	Somatic problems	0.0976	0.9624***
	Anxiety	0.0659	0.9626***
	Social dysfunction	0.1278	0.9401***
	Depression	0.1247	0.9401***

[a]Indicators are reflective indicators.

*p<0.05; **p<0.01; ***p<0.001 Significance levels are based on bootstrapped standard errors

† Dropped items

Figure 5.2 PLS Pathway analysis

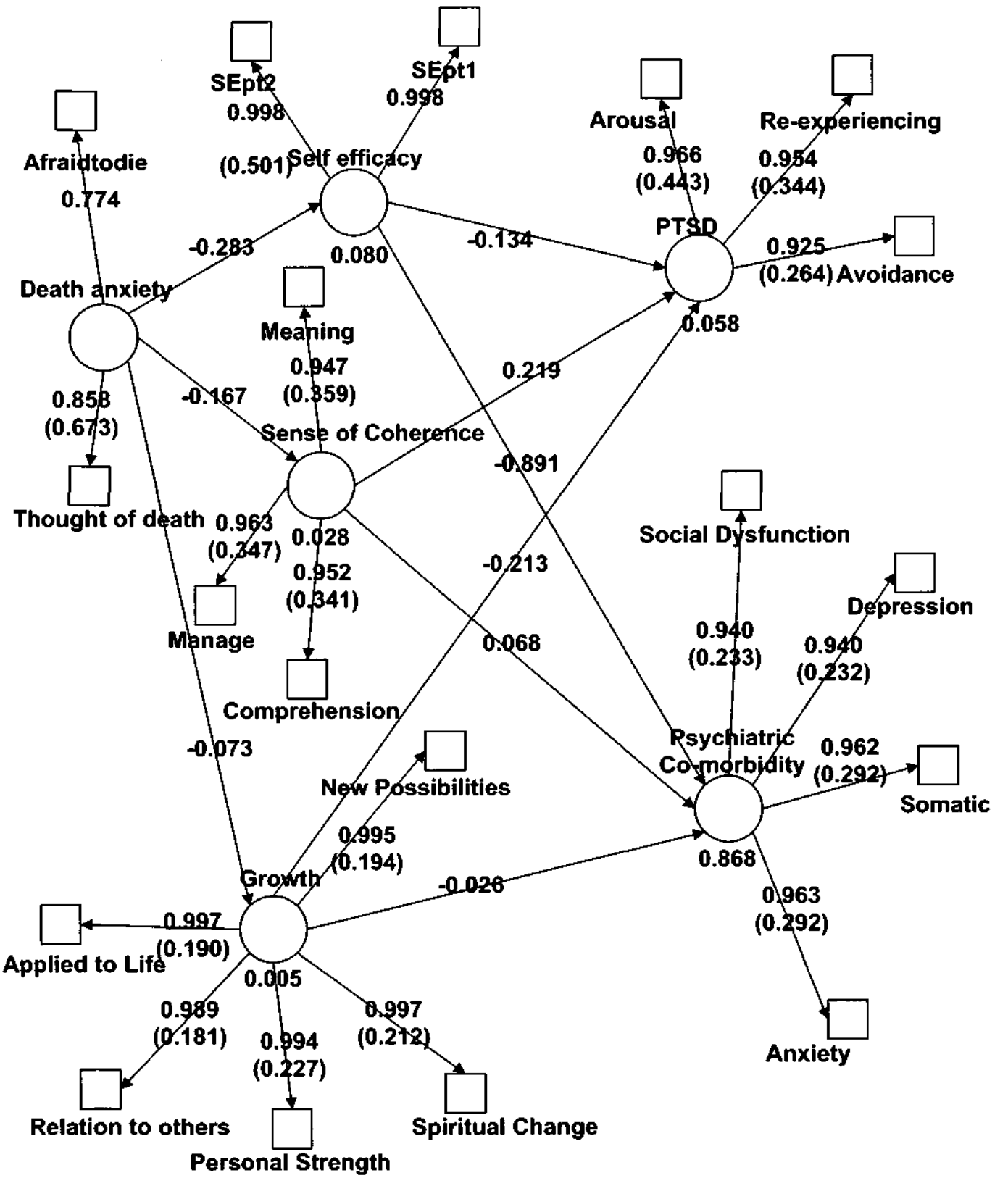


Table 5.6. Estimated correlations between the transformed variables used in the PLS model

	Afraidtodie	Thought Death	ExtDeath	Somatic	Anxiety	NewSocDysf	Depression	ReExp	Avoid	ArousLTESQT	SE1	SE2	Comp	Mang	Meang	NewPos	RelToOth	AplToLife	SpirChng	PerStrength
Afraidtodie	1	.405(**)	.311(*)	.362(*)	.273	.067	.259	.230	.137	.151	-.489(**)	-.486(**)	-.130	.096	-.104	.111	.178	.064	.179	-.028
Thought Death		1	-.074	.221	.090	.074	.138	.318(*)	.212	.285	.023	-.019	-.047	-.239	-.107	.037	.073	.130	.214	-.160
ExtDeath			1	.045	.126	-.063	.151	-.018	-.068	-.088	-.377(*)	-.409(**)	-.226	.089	-.138	.114	.149	-.051	.080	-.082
Somatic				1	.703(**)	.463(**)	.531(**)	.541(**)	.328(*)	.365(*)	.065	.089	-.133	-.063	.030	.044	.038	.240	.103	.158
Anxiety					1	.571(**)	.741(**)	.347(*)	.297	.308(*)	.054	-.055	.111	.104	.060	.233	.115	.209	.317(*)	.128
SocDysf						1	.423(**)	.243	.281	.191	-.023	-.045	-.064	-.082	-.110	.047	.034	.087	.033	-.027
Depression							1	.248	.249	.286	-.103	-.168	-.021	.000	.077	.348(*)	.362(*)	.299	.391(*)	.224
ReExp								1	.562(**)	.571(**)	.153	.185	-.169	-.297	.094	.138	.158	.304	.148	.160
Avoid									1	.568(**)	.018	-.036	-.124	-.267	.076	.163	.224	.210	.361(*)	.165
Arous										1	.132	.053	.141	-.123	.319(*)	.308	.342(*)	.262	.260	.246
SE1											1	.865(**)	.325(*)	.102	.072	.034	-.096	.031	-.079	.105
SE2												1	.254	.103	.108	-.129	-.227	-.076	-.220	.029
Comp													1	.572(**)	.160	.182	.028	-.106	.048	.109
Mang														1	.034	.277	.163	.064	.106	.212

Meang															1	.103	.140	.303	.001	.212
NewPos																1	.822(**)	.722(**)	.709(**)	.729(**)
RelToOth																	1	.664(**)	.623(**)	.673(**)
AplToLife																		1	.650(**)	.614(**)
SpirChng																			1	.417(**)
PerStrength																				1

** Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).
AfraidDie=feeling that you were going to die, ThoughtDeath=having thoughts about death, ExtDeath= fear something would kill you, Soma=somatic problems, Anx=anxiety, Social=social dysfunction, Dep=depression, Intru=intrusion, Avoid=avoidance behaviour, Arou=hyperarousal, SE1= Self efficacy pt 1, SE2=Self-efficacy pt 2,
*p<0.05, **p<0.01

Conceptually, the path results suggested that participants' self-efficacy mediated the relationship between death anxiety and psychiatric co-morbidity. However, mediation analysis showed that death anxiety was not significantly correlated with psychiatric co-morbidity (B=0.106, SE B=0.057, Beta=0.283, ns; Sobel test: Z=0.93, ns). In other words, inconsistent with the previous studies, self-efficacy did not mediate the relationship between death and psychiatric co-morbidity.

Discussion

The aims of this study were to determine the role of existential attitude along with self-efficacy on death anxiety with PTSD and psychiatric co-morbidity. In addition it was postulated that as self-efficacy, sense of coherence and post-traumatic growth increases, PTSD and psychiatric co-morbidity will decrease. In regards to the earlier stated hypotheses, only portions of hypothesis 1, 2, and 4 could be supported with the results. Starting with self-efficacy, once again self-efficacy is significantly correlated to death anxiety (H1) and psychiatric co-morbidity (H2). As this is now the third instance of this finding, it appears that these links are quite robust as this relationship remains despite different samples. The relationships remain even when taking into account post-traumatic growth and sense of coherence. The result indicates death anxiety is related to self-efficacy and that self-efficacy is related to mental health, however this is still not a mediational relationship. What can be said is that higher self-efficacy lowers both death anxiety and psychiatric co-morbidity, but it does this independently (as with study 2 & 3).

Although post-traumatic growth was related to PTSD (H4), it did not play a mediating role to death anxiety. Therefore, the rest of the hypotheses 1, 2, 3 and 4 must be rejected. The results of this study have not found evidence to support a mediational relationship of existential attitude to death anxiety and outcome variables. In fact, the construct existential attitude, as represented by sense of coherence and post-traumatic growth, does not show any links to death anxiety at all.

This result is surprising for a variety of reasons. Firstly, sense of coherence is not related to any of the variables: death anxiety, PTSD or mental health. This seems contrary considering previous research (Homberg, Thelin & Stiernstorm, 2004; Surtees, Wainwright, Luben, Khaw, & Day, 2006; Peterson, Park, Pole D'Andrea & Seligman, 2008). According to the existential perspective, meaning should have some connection to death. Yalom (2008) has advocated that meaning can be found in facing death. However, the results do not support this relationship. Sense of coherence has been linked to death anxiety previously (Strang & Strang, 2001). For example, a study found that the sub-scale of meaninglessness was directly influenced by unresolved death anxiety. It is also surprising considering self-efficacy is similar to aspects of sense of coherence (e.g. manageability). Yet even theoretically, self-efficacy is different to sense of coherence in several ways. Self-efficacy is very active, assertive, solution-focused; based on self regulation (Bandura, 1997). Sense of coherence, on the other hand, is defined more by feelings and personal experience. In addition, sense of coherence is somewhat passive and outward focused. Sense of coherence tends to be more focused on beliefs about the world, and whether there will be the resources to meet demands of this world. Granted, there is an evaluation of these demands as meaningful; but this serves more as a self-

narrative. This is in contrast to self-efficacy which tends to put less emphasis on meaning, and instead pays more attention to the outcome expectancy on a specific problem. In essence, sense of coherence and self-efficacy are not mapping onto the same phenomenon. It could be stated that ultimately this is the difference between problem-solving versus a state of being orientation. Self-efficacy is concerned more with handling tasks, resolving problems and gaining mastery than creating a meaningful worldview. The theoretical differences are evidenced in the result of this study. Sense of coherence does not influence death anxiety and mental health as powerfully as self-efficacy.

Examining these results in light of previous literature would indicate that there are two competing models of PTSD and psychiatric co-morbidity; namely salutogenesis vs. pathogenesis. Sense of coherence is reflective of salutogenesis where a person is driven by the mobilization of resistance resources to steady to maintain a dynamic steady state (Antonovsky, 1973). Whereas Bandura's self-efficacy emphasizes past experiences, support and physiological states to determine whether coping behaviour will be engaged (Bandura, 1997), both models share the emphasis on mobilising resources to manage trauma. Even Rutter (1985) defines "resilience" in a way very similarly to sense of coherence and self-efficacy, yet it tends to focus predominantly on childhood (Almedom, 2005). Post-traumatic growth develops its construct in the wider context of self-efficacy and sense of coherence with results that concur with Antonovsky's assertions that there can be a positive aspect inoculation from traumatic stress (Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003; Almedom, 2005). These theories all run counter to a pathogenic worldview which sees positive aspects of trauma as an exception to the norm, whereas

salutogenesis takes the opposite view (Almedom, 2005). These theories serve to highlight humanity's ability to break free from the negative effects of trauma.

Much like sense of coherence, it was surprising that post-traumatic growth was not related to death anxiety. First, post-traumatic growth includes the idea of personal strength. This aspect of the theory is very similar to self-efficacy and would thus be expected to have some significance to death anxiety (Almedom, 2005). Secondly, considering the participants' comments in study 1 on life change after trauma, it seemed as though the link would emerge. However, it appears that post-traumatic growth is a separate independent factor and is not related to death anxiety, only PTSD. Studies examining the relationship between post-traumatic growth and death anxiety found that the type of death anxiety is crucial. (Lykins, Sergerstrom, Averill, Evans, & Kemeny (2007) One way to explain this result is that post-traumatic growth deals more with long-term experiences of death and dying. When people move beyond the immediate, and confront a long-term processing of death anxiety, what emerges is an opportunity to become more goal-oriented and an improvement in well-being (Lykins et al., 2007). The life-threatening events the participants experienced in this study may not reflect the type of death anxiety relevant to post-traumatic growth. Perhaps post-traumatic growth is useful in conceptualising trauma in a meaningful way, but does not mitigate any underlying death anxiety.

The result from this study show post-traumatic growth is related to PTSD, which is consistent with literature, thus not surprising. Yet why was it not related to psychiatric co-morbidity? One thing to consider is that post-traumatic growth implies some kind of time has elapsed between the traumatic event and eventual growth. Perhaps what happens is that this is actually a retrospective

perceived growth. In the sense a person is re-telling the story of their trauma, evaluating the positive side, and finding changes from the trauma. According to the results from this study, post-traumatic growth is more specific to PTSD symptomology, even if PTSD and psychiatric co-morbidity are related. What can be assumed is that post-traumatic growth directly affects PTSD symptoms, but not overall mental health. At this juncture, the extent to which post-traumatic growth may affect mental health is unknown. The specific symptoms of PTSD and general mental health are different phenomena.

Another consideration regarding death anxiety is that it appears that post-traumatic growth may enable a person to find benefits from having had a life-threatening experience, but it does not directly influence a person's death anxiety. Post-traumatic growth as a retrospective experience seems to influence post-traumatic stress, but it does not mediate death anxiety's influence on PTSD or psychiatric co-morbidity. On way to explain this is from the literature on life narratives. The narrative approach suggests that people construct stories to help them shape behaviour, but more importantly, to create a personal identity (Hermans, Kempen and van Loon, 1992; Josselson & Lieblich, 1993; McAdams, 1985; McAdams & Pals, 2006; Singer & Salovey, 1993; Tomkins, 1987). This narrative identity is a story that the person continues to maintain that incorporates a coherent reconstructed past and imagined future (Giddens, 1991). This story provides the opportunity to create meaning out of life experiences. Post-traumatic growth may serve as a narrative function allowing survivors to create meaning out of life-threatening events. Previous studies have found that episodic memory and autobiographical reasoning are used to create a portrait of oneself (Conway & Pleydell-Pearce, 2000; McAdams & Pals, 2006). That portrait serves as a meaningful system in

which to frame the life-threatening event, but may not in fact reduce death anxiety. Studies show that when a person can translate traumatic events into narrative accounts of personal change and growth, the tend to show an increase in ego development over time (King & Raspin, 2004; King, Scollon, Ramsey & Williams, 2000). Considering the comments made in phase 2 of study 1, it may be that survivors of life-threatening events construct a picture of themselves as victorious over the trauma, which may in fact boost their own self-efficacy; however, it does not directly reduce the level of death anxiety. Instead it would seem that the self-efficacy itself is more responsible for that type of regulation.

In any research attempting to quantify existential dimensions of the human experience, there will be limitations. This issue remains a highly contentious one because many theorists have difficulty creating clear operational definitions of phenomenological experiences (Crossley, 1995; Craighead & Weiner, 2010; Pyszczynski, Greenberg, Koole, 2004). There has been a significant division between existential and experimental psychology for most of psychology's history, in part because experimental psychology must apply fairly rigorous research methods to relative simple phenomena. Existential psychology on the other hand often deals with fairly abstract and complicated questions regarding the nature of human experience; issues considered far too immaterial to be captured by the scientific method. Irving Yalom (1980) commented on this issue by stating

> "The precision of the result is directly proportional to the triviality of the variables studied. (p. 24)"

Rollo May (2009) suggested that psychology was intent on making molehills out of mountains by distilling complex and deep issues into observable and testable hypothesis .

If research is designed to answer questions, it can come in stark contrast to existentialism. Existential thought begins with the premise that humans live their lives aware of their own mortality and the inevitability of death. This creates an underpinning of uncertainty from beliefs, values, and most importantly, identity. This uncertainty is upheld in that one's private subjective experience can never be shared with another human being (Koole, Greenberg & Pyszczynski, 2006). Existential concerns tend to centre on death, isolation, identity, freedom, and meaning (Pyszczynski, Greenberg & Koole, 2004). Therefore, these private subjective experiences cannot be measured or quantified.

Similarly there has been an historical scepticism of existential psychology from both behavioural and cognitive approaches (Lantz, 2004; Pyszczynski, Greenberg & Koole, 2004). For example, Kotchen was very critical of the existential explanation of mental illness and proceeded to investigate whether any significant correlation could be found between mental health difficulties and existential concepts (Kotchen, 1960). He analysed the literature for the traits pertinent to mental health as conceived by the existential writers, and indentified characteristics of a meaningful life which are supposed to be present in authentically living persons (e.g., uniqueness, responsibility, etc.). The results of this investigation found no significant relationship of existential concepts to a clinical population (Crumbaugh & Maholick, 1964; Kotchen, 1960). This type of research has deepened the divide between existential and experimental approaches.

Although these concerns may be valid, it's unwise to place the deeper issues of human nature in the "untouchables category". In fact, because of their importance, psychology should attempt to understand them. By exploring the existential concerns that underlie human behaviour, psychology can promote better mental health and well-being. Insights gained from research can be used to promote the development of grounded forms of clinical interventions. Although the results of this study did not highlight the importance of existential attitude as a mediating variable in death anxiety that is not to say it is not a valid idea or that it could never be studied. Several studies have shown that people cling more to systems of meaning when they have been reminded of basic existential concerns (Crumbaugh & Maholick, 1964; Koole, Greenberg & Pyszczynski, 2006; Pyszczynski, Greenberg & Koole, 2004).

The complexities of studying existential concerns lead to another potential issue, age. Is it possible that developmental issues limit a participant's reflective ability? Studies examining the relationship between wisdom (defined as a combination of cognitive, reflective, and affective personality qualities) have shown that age has significant positive influence on wisdom (Ardelt, 2000; Blazer, 1991; Chandler & Holiday, 1990; Kekes, 1983; Tranto, 1989). Therefore it could be argued that a younger population does not have the wisdom to appropriately apply existential attitude in the way an older population can. This, of course is a limitation of this study, due to the population consisting of university students in their early twenties. However, despite the necessary caution in interpreting data on existential attitude from younger participants, there results cannot be dismissed entirely. For example, one study found the ability to create a "sense of meaning in life" from traumatic events was demonstrated across developmental stages (Krause, 2005).

Conclusion

Study 4 has demonstrated that self-efficacy remains a potent influencer on death anxiety and psychiatric co-morbidity. However, although this relationship has emerged in studies 2 to 4, it has yet to demonstrate itself as a mediating variable. Thus what can be concluded is that self-efficacy in relation to death anxiety and mental health is an additive model. In addition, the role of existential attitude on mediating death anxiety to the outcome variables was not supported. Despite the correlation of post-traumatic growth to PTSD, overall the salutogenic model of death anxiety resilience was not evidenced in the data. Although existential attitude was reported by the participants in phase two of study 1, it might be better understood as a function of narrative identity rather that a direct influence on death anxiety.

CHAPTER SIX

Conclusion

This thesis intended to explore the role of death anxiety on mental health by using a specific population of people who had experienced life-threatening events. As a result of these studies, the following conclusions can be made:

Conclusively, the previous four studies have made the following clear:

1) Death anxiety is related to PTSD
2) Self-efficacy mediates the relationship between death anxiety and psychiatric co-morbidity
3) Religion is not a mediator of death anxiety nor does it have an effect on outcome variables
4) Existential attitude does not mediate the relationship between death anxiety with PTSD or psychiatric co-morbidity
5) Post-traumatic growth is related to PTSD, but independently from death anxiety
6) Existential attitude has a limited relationship with outcome variables

Once it was determined that death anxiety influenced PTSD and that the participants appeared to be using some type of resilience to mitigate this, it was theorised that a three modes of death anxiety

resilience helped participants to manage this relationship. Studies 2, 3 & 4 were designed to explore each mode of resilience, self-efficacy, religious coping and existential attitude. It was assumed that death anxiety resilience then must somehow mediate the effects of death anxiety on PTSD and psychiatric co-morbidity. In these three studies, self-efficacy was the only effective type of death anxiety resilience. However, the original concept was only partially supported. Instead of death anxiety functioning as a meditational variable, it worked instead as an additive variable. Granted, additive models are still useful in that it affords valuable information regarding the unique contribution of a particular variable in predicting outcomes (Criss, Shaw, Moilanen, Hitchings &, Ingoldsby, 2008).

In study 2, the social cognitive two-factor model of death anxiety was theorized, but was not fully supported. The idea that death anxiety is a form of health anxiety does not appear to be supported. In fact, death anxiety is related to psychiatric co-morbidity, but not in the same way as was defined by the two-factor integrative model. However, self-efficacy has demonstrated an importance in predicting death anxiety and overall mental health for survivors of life-threatening events.

When considering the premise from chapter two that what exists is a three tier mode of death anxiety resilience, it is more accurate to say that the mode of death anxiety resistance is solely self-efficacy. That is not to say that the participants' formulation of understanding

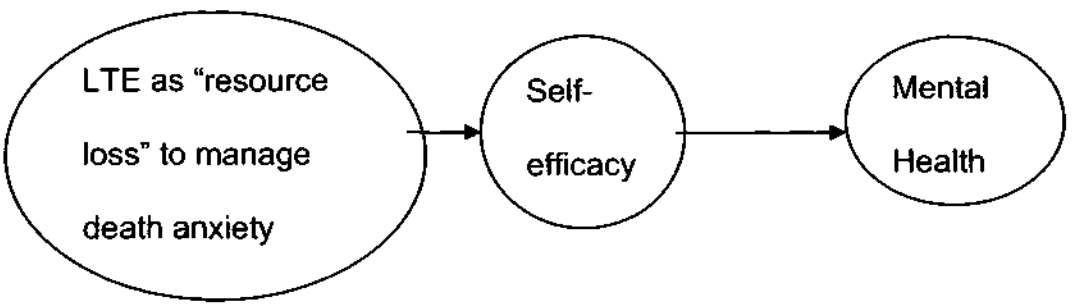
their life-threatening event in terms of religious coping and existential attitude are false. However, what is theorised in this thesis is that self-efficacy is actually the over-arching theme to which the other two belong. Conceptually it makes sense that the scales of religious coping, sense of coherence and post-traumatic growth are grasping at something that the perceived self-efficacy scale more accurately captures. Thematic literature review "resilience" and "hardiness" in medical sociology find significant overlaps in theory and evidence which support what could be called a trauma-induced "psychosocial transition" model (Almedom, 2004). This psychosocial transition resulting from traumatic crisis would produce either a positive or negative state. There is a growing trend in trauma studies to examine resilience and growth; it has resulted in various "pathways" to the same end (Almedom, 2004; Carballo, Smajkic, Zeric, Dzidowska, Gebre-Medhin & Halem, 2004). Concepts like post-traumatic growth, self-efficacy and sense of coherence are fairly well developed theories that all point to ways in which victims are protected from trauma. However, it is self-efficacy that accurately captures the underlying mechanisms of death anxiety resilience.

Returning to the views of death anxiety presented in chapter one, what can be supported is the cognitive-behavioural view of death anxiety. Even some existentialists would highlight cognitive psychology as important to death anxiety in so much as it provides a cognitive

architecture of death anxiety (Greenberg, Koole & Pyszczynski, 2004). However, the existentialists see the cognitive perspective as explaining the mechanisms of action in defence of death-related thought. As stated earlier, the cognitive perspective sees death anxiety as something to be managed as a result of trauma, not an existential state of being that must be accepted.

Death anxiety is a condition common to all regardless of trauma or not (Lowrie, 1973). This thesis supposed that perhaps victims of traumatic events may have more access to death anxiety than the normal population based on the idea of oscillating death anxiety awareness. One could argue that if many people seek to delude themselves from their own mortality, traumatic events only serve as a pressure cooker which forces the individual to become more aware and exert more effort to coping with death anxiety. Becker's assertion that we utilize death-denying devices (religion, romance and creation) may not be too far off the mark. However, although this is how we imagine ourselves denying death, in actuality when it comes time to bolster death anxiety resilience, we actually employ self-efficacy.

Figure 6.1



Before theorising on death anxiety and self-efficacy, it is important to consider some overall limitations to the studies. One limitation of this study was the measurement of Death Anxiety. It was decided that the Templer 15 Item Death Anxiety Scale (DAS) would be the most efficient assessment due to its brevity and established use. Considering participants had a lengthy assessment inventory, smaller versions of scales were used. However, reflecting on the importance of death anxiety, perhaps the 51 item Death Anxiety Scale extended would have been more appropriate. The additional 36 items have been shown to be both internally consistent and valid (Templer, Awadalla, Al-Fayez, Frazee, Bassman, & Connelly, 2006). However, at the time of the initiation of this study, this assessment was in its early stages of both testing and validation. Another shortcoming of Templer's Death Anxiety Scale is that it does not fully capture the existential concept of death anxiety. Although the DAS does have high construct validity

which has fuelled many studies establishing group norms, the idea of death anxiety needs to be further explored with qualitative research (Beshai & Naboulsi, 2004). It may be that quantitatively, two subjects could have similar scores yet have subjectively different experiences of death anxiety (Beshai & Naboulsi, 2004). Templer's DAS is a hodgepodge of phobias, cognitive obsessions, fears about health and global conflict (Beshai & Naboulsi, 2004). More specifically, it approaches death anxiety as a cognitive exercise even though the specific scale items are in first person singular. Death anxiety from an existential perspective is anticipatory mode of being in the world embedded both personally and culturally (Beshai & Naboulsi, 2004). Therefore, results from this thesis are subject to criticism from a phenomenological understanding of existential psychology.

An important general limitation of this kind of investigation involves the nature of death anxiety. A review of literature on death anxiety does not reveal a standard definition that is universally accepted (Fry, 2003; Former & Neimeyer, 1999; Neimeyer, Moser & Wittkowsji, 2003; Neimeyer & Van Brunt, 1995, Pollak, 1979; Sander, Poole & Rivero, 1980; Tomer, 1994; Tomer, Eliason & Smith, 2000). In fact, death anxiety is neither a single construct nor a dependent variable to which various psychological and environmental factors might influence the levels of severity (Florian & Mikulincer, 2004). Several theorists suggest that the notion of death anxiety should be

viewed on a multi-dimensional scale, including different aspects of fear and death (Collett & Lester, 1969; Lester 1994; Neimeyer & Moore, 1994; Thorson & Powell, 2000). Yet, increasingly, there is agreement that death anxiety exists even if it covers a whole multitude of dimensions of fear regarding death. In recent works, death anxiety has been agreed upon as a fear of death and dying that individuals experience in daily life caused by an anticipation of death (Fry, 2003; Cirirelli, 199; Neimeyer & Moore, 1994; Tomer & Eliason, 1996). Thus, despite the critique of an agreed upon single construct, there is agreement that the phenomenon of death anxiety is real.

Despite this limitation in terminology and definition, research into death anxiety is a continued necessity. There is a significant base of research examining death acceptance or death competence. In fact the term "death anxiety" is often used in describing issues of coping with death itself (Robbins, 1990; Wong, Recker & Gresser, 1994). However, it is important not to confuse death anxiety with death acceptance and/or coping as this is not reflective on the existential angst referred to in chapter one. There needs to be a distinction between the state of death anxiety and the process of dying and grieving as two separate, albeit related, phenomena (Collett-Lester, 1969; Lester & Abdel-Khalek, 2003; Reimer, 2007). Templer's (1970) Death Anxiety Scale assumes death anxiety is a unidimensional construct, and attempts to separate this specific type of anxiety. Although this has been criticised

by recent literature of death attitudes (e.g. Neimeyer, 1994), it does reflect the concept that death anxiety is something specific, even it is picked up on more modern multi-dimensional scales of death attitudes. The purpose of this thesis was not to examine the wider process of dying or grieving death. It was specifically to look at death anxiety itself, and despite the criticism of a unidimensional construct of death anxiety, it was important to isolate the state of death anxiety.

It's important not to fall prey to a type II error when interpreting results from studies 3 and 4. Religious coping and existential attitude did not have statistical significance in relation to death anxiety. However, in taking the risk of type II error seriously, there may have been a failure to observe a difference in these two studies when in reality there was one. Of course, arguments around design and the sensitivity of the measures are important. Indeed, as discussed earlier, the nature of attempting to measure deeper existential issues is complicated. However, more importantly, participants in phase two of study 1 have identified several forms of meaningful systems when describing their experience of life-threatening events and death anxiety. Of course by reporting resilience against death anxiety, participants may be suffering from social desirability effects (Fry, 2003). But assuming that they have sufficient self-awareness and are not merely submitting to effects of social desirability, these claims should still be taken seriously.

Future studies should make two important methodological changes test this further. Firstly, in order to validate these results the next step is to increase sample sizes for each subgroup. Secondly, a longitudinal design can more accurately make statements of causality. As stated earlier this was not a practical option for this researcher. However, the strength of these relationships could increase significantly with some methodological changes. In addition, the populations should reflect a more diverse sampling from the general population, specifically age, as this has been identified as a limitation in all four studies. By have a more diverse sample from different developmental stages; it would help make the results from this study, based on younger students, in line with the studies on the elderly and death anxiety (Cicirelli, 199; Hunt, Lester & Ashton 1988; Thorson & Powell, 1990, Tomer & Eliason, 2000).

Clinical Applications

For mental health professionals who work with survivors of life-threatening events, there are some applications of this research to clinical interventions. First and foremost is the role of self-efficacy is therapeutic recovery. As this research shows, self-efficacy is influential on both death anxiety and psychiatric co-morbidity. Survivors of life-threatening events who are engaging in a recovery process would be well served to improve their self-efficacy (Benight & Bandura, 2005; Joseph, Williams & Yule, 1997; Lifton, 1988; Wilson, 1989). Self-

efficacy has been shown to buffer against the effects of death anxiety for clinical populations in previous studies (Fry, 2003; Furer & Walker 2008). It has been shown that clients who display beliefs in mastery are often shielded against death anxiety in later stages of life (Fry, 2003). However clients who ruminate on what is damaged, broken or pathological in the perceived self-efficacy tend to become chronically pessimistic and show greater death anxiety. Beliefs play a significant role in the prediction of death anxiety, thus mental health professionals should support and reinforce survivors of life-threatening events in the respective domains of self-efficacy (Fry, 2003). Specifically studies do show that self-efficacy can be fortified and strengthened among clinical populations and there is increase in research that shows these beliefs are modifiable (Bandura, 1997; Catania, 2000; Fry, 2003; Meichenbaum, 1994; Seligman & Csikszentmihalyi, 2000).

In regards to the meaningful systems of religious coping and existential attitude, there is growing research on the role of "spiritual health efficacy". Previous studies show that spiritual health efficacy emerges as a salient predictor of death anxiety (Paloutzian & Kirkpatrick, 1995; Parker 2002; Thorson, 1999). In addition, these studies show that spiritual health efficacy is an effective factor in overall well-being. Even if one views religion as a function of symbolic immortality, according to Becker and TMT proponents, there is benefit in relying on symbolic constructions of immortality.

The existential approach is still important in the light of clinical treatment. The existential notion of accepting death as a reality may be, in part, an engagement in self-efficacy. Trauma presents itself as an opportunity to manage death anxiety awareness. Death thus serves as a clinical tool for addressing underlying mental health difficulties; by addressing death anxiety, it allows clients to reflect on mortality, which in turn engages the bolstering of self (Raft & Andersen, 1986; Simon, Greenberg, Harmon-Jones, Solomon & Pyszczynski, 1996; Solomon, Greenberg & Pyszynski, 1991; Yalom, 1980). Existentialism (e.g. Kierkegaard & Heidegger) encourages the benefits of confronting one's own mortality and following personal values. Mental health professionals who do well to encourage that same type of personal exploration in the clients they serve.

In summary, this thesis has explored the notion of death anxiety and has found that self-efficacy is a significant predictor of both death anxiety and general mental health. This expands upon existing literature and does so by testing a previously unexplored population of Northern and Eastern European participants. These results have not only been gleaned from quantitative investigation, but by the words and experiences of the participants themselves. This is a unique method not attempted by previous studies in regards to the subject matter. Despite the potentially pathogenic consequences of life-threatening events, these studies have shown that resilience can be initiated

against death anxiety. These studies are unique in that the same results have been observed across different populations. In addition, these results are unique in that they include a sample of participants from northern and Eastern Europe, indicating that death anxiety is a real phenomenon and the modes of resilience against death anxiety can be studied further.

Appendix
Sample questionnaire

Participant I.D_____
Office use only/Do not fill out

Age_____

Gender:
A. Male
B. Female

Marital Status:
A. Single
B. Married
C. Co-habiting
D. Separated/divorced
E. Widowed

What country is your passport from? _____

What is your ethnicity? _____

Full-time or part-time student? (please circle)

Year level at LCC_____

Posttraumatic Diagnostic Scale

Have you ever experienced a life threatening event or experience?

A. Yes
B. No **IF NO PLEASE GO STRAIGHT TO PART X**

How many life threatening events have you experienced?_____

If you have experienced more than one life threatening event, please identify the event that was most traumatic for you and answer the following questions in respect to that event.

1. What was the life threatening event that you have experienced?

_____
_____
_____
_____
_____

2. How long ago did the life threatening event that you have described above happen?

_____
_____

For the following questions please circle Y for Yes or N for No.

3.	Were you physically injured?	Y	N
4.	Was someone else physically injured?	Y	N
5.	Did you think that your life was in danger?	Y	N
6.	Did you think that someone else life was in danger?	Y	N
7.	Did you feel helpless?	Y	N
8.	Did you feel terrified?	Y	N

Below is a list of problems that people sometimes have after experiencing a life threatening event. Read each one carefully and circle the number (0-3) that best describes how often that problem has bothered you in general. Rate each problem with respect to the life threatening event you described.

0 = Not at all or only one time
1 = Once in a while/ Once a week or less
2 = Half of the time/ 2 to 4 times a week
3 = Almost always/ 5 or more times a week

(1)	0	1	2	3	Having upsetting thoughts or Images about the life-threatening event that came into your head when you didn't want them to
(2)	0	1	2	3	Having bad dreams or nightmares about the life-threatening event
(3)	0	1	2	3	Reliving the life-threatening event, acting or feeling as if it was happening again
(4)	0	1	2	3	Feeing emotionally upset when you were reminded of the life-threatening event (for example, feeling scared, angry, sad, guilty, etc.)
(5)	0	1	2	3	Experiencing physical reactions when you were reminded of the life-threatening event (for example, breaking out in a sweat, heart beating fast)
(6)	0	1	2	3	Trying not to think about, talk about, or have feelings about the life-threatening event
(7)	0	1	2	3	Trying to avoid activities, people, or places that remind you of the life-threatening event
(8)	0	1	2	3	Not being able to remember an important part of the life-threatening event
(9)	0	1	2	3	Having much less interest or participating much less often in important activities
(10)	0	1	2	3	Feeling distant or cut off from people around you
(11)	0	1	2	3	Feeling emotionally numb (for example, being unable to cry or unable to have loving feelings)
(12)	0	1	2	3	Feeling as if your future plans or hopes will not come true (for example, you will not have a career, marriage, children, or a long life)
(13)	0	1	2	3	Having trouble failing or staying asleep
(14)	0	1	2	3	Feeling irritable or having fits of anger
(15)	0	1	2	3	Having trouble concentrating (for example, drifting in and out of conversations, losing track of a story on television, forgetting what you

read)

(16) 0 1 2 3 Being overly alert (for example, checking to see who is around you, being uncomfortable with your back to a door, etc)

(17) 0 1 2 3 Being jumpy or easily startled (for example» when someone walks up behind you)

(18) How long have you experienced the problems that you reported above? (circle ONE)

1 Less than 1 month
2 1 to 3 months
3 More than 3 months

(19) How long after the life-threatening event did these problems begin?
(circle ONE)

1 Less than 6 months
2 6 or more months

Indicate below if the problems you rated above have interfered with any of the following areas of your life. Circle Y for Yes or N for No.

(20) Y N Work
(21) Y N Household chores and duties
(22) Y N Relationships with friends
(23) Y N Fun and leisure activities
(24) Y N Schoolwork
(25) Y N Relationships with your family
(26) Y N Sex life
(27) Y N General satisfaction with life
(28) Y N Overall level of functioning in all areas of your

Death Anxiety Scale

Please read each statement then circle. T if the statement is true or mostly true as applies to you. If a statement is false or mostly false as applied to you circle F.

1.	I am very much afraid to die.	**T**	**F**
2.	The thought of death seldom enters my mind.	**T**	**F**
3.	It does not make me nervous when people talk about death.	**T**	**F**
4.	I dream to think about having to have an operation.	**T**	**F**
5.	I am not at all afraid to die.	**T**	**F**
6.	I am not particularly afraid of getting cancer.	**T**	**F**
7.	The thought of death never bothers me.	**T**	**F**
8.	I am often distressed by the way time flies so very rapidly.	**T**	**F**
9.	I fear dying a painful death.	**T**	**F**
10.	The subject of life after death troubles me greatly.	**T**	**F**
11.	I am really scared of having a heart attack.	**T**	**F**
12.	I often think about how short life really is.	**T**	**F**
13.	I shudder when I hear people talk about a World War III.	**T**	**F**
14.	The sigh of a dead body is horrifying to me.	**T**	**F**
15.	I feel that the future holds nothing for me to fear.	**T**	**F**

General Health Questionnaire

We would like to know if you have had any medical complaints recently. Please answer ALL of the following questions by circling the response which you think most closely applies to you. Have you recently....

Been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse as usual	Much worse than usual
Been feeling in need of a good tonic?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been feeling run down and out of sorts?	Not at all	No more than usual	Rather more than usual	Much more than usual
Felt that you are ill?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been getting any pains in you head?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been getting a feeling of tightness or pressure in you head?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been having hot or cold spells?	Not at all	No more than usual	Rather more than usual	Much more than usual
Lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
Had difficult in staying asleep once you are off?	Not at all	No more than usual	Rather more than usual	Much more than usual
Felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been getting edgy and bad tempered?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been getting scared or panicky for no good reason?	Not at all	No more than usual	Rather more than usual	Much more than usual
Found everything getting on top of you?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been feeling nervous and stung-up all the time?	Not at all	No more than usual	Rather more than usual	Much more than usual
Been managing to keep yourself busy and occupied?	More so than usual	Same as usual	Rather less than usual	Much more than usual
Been taking longer over things you do?	Quicker than usual	Same as usual	Longer than usual	Much longer than usual
Felt on the whole you were doing things well?	Better than usual	About the same	Less well than usual	Much less well
Been satisfied with the way you have	More	About the	Less satisfied	Much less

carried out your task?	satisfied	same as usual	than usual	satisfied
Felt that you are playing a useful part in things?	More so than usual	Same as usual	Less useful than usual	Much less useful
Felt capable about making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less capable
Been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
Been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
Felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
Felt that life is not worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
Thought of the possibility that you might make away with yourself?	Definitely not	I don't think so	Has crossed my mind	Definitely have
Found at times you could not to do anything because your nerves were too bad?	Not at all	No more than usual	Rather more than usual	Much more than usual
Found yourself wishing you were dead and away from it all?	Not at all	No more than usual	Rather more than usual	Much more than usual
Found that the idea of taking your own life kept coming into your mind?	Definitely not	I don't think so	Has crossed my mind	Definitely have

Perceived Self-efficacy Scale

Please read each item below and indicate, by ticking the box of the appropriate category, to what extent the following characteristics are true to you.

	Not at all true	Barely true	Moderately true	Exactly true
I can always manage to solve difficult problems if I try hard enough.				
If someone opposes me, I can find the ways and means to get what I want.				
I am certain that I can accomplish my goals.				
I am confident that I could deal efficiently with unexpected events.				
Thanks to my resourcefulness, I can handle unforeseen situations.				
I can solve most problems if I invest the necessary effort.				
I can remain calm when facing difficulties because I can rely on my coping abilities.				
When I am confronted with a problem, I can find several solutions.				
If I am in trouble, I can think of a good situation.				
I can handle whatever comes my way.				

Ways of Religious Coping Scale

The following questions relate to how you handle life-threatening situations in your life. Read each statement carefully and indicate how often you engage in the following behaviour when you experience a life-threatening event. Indicate your answer by circling the appropriate answer. Please respond to every item.

USE THE FOLLOWING RESPONSE CATEGORIES:
0 = not used at all/does not apply
1 = used sometimes
2 = used often
3 = used very often
4 = used always

1.	I say prayers.	0	1	2	3	4
2.	I read scriptures.	0	1	2	3	4
3.	I attend a religious support group.	0	1	2	3	4
4.	I allow the holy spirit to direct me actions.	0	1	2	3	4
5.	I confess to God.	0	1	2	3	4
6.	I do not pray.	0	1	2	3	4
7.	I get support from church/mosque/temple members.	0	1	2	3	4
8.	I talk to church/temple/mosque leaders.	0	1	2	3	4
9.	I look for a lesson from God in the situation.	0	1	2	3	4
10.	I try to be a less sinful person.	0	1	2	3	4
11.	I pray to God for inspiration.	0	1	2	3	4
12.	I try to make up for my mistakes.	0	1	2	3	4
13.	I put my problems in God's hands.	0	1	2	3	4
14.	I pray for strength.	0	1	2	3	4
15.	I talk to church/mosque/temple members.	0	1	2	3	4
16.	I count my blessings.	0	1	2	3	4
17.	I talk to my minister/preacher/rabbi/priest.	0	1	2	3	4
18.	I recall a Bible passage.	0	1	2	3	4
19.	I stop going to religious services.	0	1	2	3	4
20.	I get help from clergy.	0	1	2	3	4
21.	I use a Bible story to help solve a problem.	0	1	2	3	4
22.	I pray for the help of a religious figure.	0	1	2	3	4
23.	I solve problems without God's help.	0	1	2	3	4
24.	I ask for God's forgiveness.	0	1	2	3	4

25.	I donate time to a religious cause or activity.	0	1	2	3	4
26.	I ask my religious leader for advice.	0	1	2	3	4
27.	I share my religious beliefs with others.	0	1	2	3	4
28.	I think about Jesus as my friend.	0	1	2	3	4
29.	I get involved with church/mosque/temple activities.	0	1	2	3	4
30.	I give money to a religious organization.	0	1	2	3	4
31.	I base my life decisions on my religious beliefs.	0	1	2	3	4
32.	I find peace by going to a religious place.	0	1	2	3	4
33.	I ask someone to pray for me.	0	1	2	3	4
34.	I ask for a blessing.	0	1	2	3	4
35.	I pray for help.	0	1	2	3	4
36.	I go to a religious counsellor.	0	1	2	3	4
37.	I work with God to solve problems.	0	1	2	3	4
38.	I find peace by sharing my problems with God.	0	1	2	3	4
39.	I stop reading scriptures.	0	1	2	3	4
40.	I recite a psalm.	0	1	2	3	4

Sense of Coherence

ORIENTATION TO LIFE

Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number that expresses your answer, with number 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. Do you have the feeling that you don't really care about what goes on around you?

   1 2 3 4 5 6 7

   very seldom or never very often

2. Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?

   1 2 3 4 5 6 7

   Never happened Always happened

3. Has it happened that people whom you counted on disappointed you?

   1 2 3 4 5 6 7

   Never happened Always happened

4. Until now your life has had:

1	2	3	4	5	6	7
no clear goals or purpose at all						very clear goals and purpose

5. Do you have the feeling that you're being treated unfairly?

1	2	3	4	5	6	7
very often						very seldom or never

6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

1	2	3	4	5	6	7
Very often						Seldom or never

7. Doing the things you do every day is:

1	2	3	4	5	6	7
a source of deep pleasure and satisfaction						a source of pain and boredom

8. Do you have very mixed-up feelings and ideas?

1	2	3	4	5	6	7
very often						very seldom or never

9. Does it happen that you have feelings inside you would rather not feel?

1	2	3	4	5	6	7
Very often						Very seldom or never

10. Many people—even those with a strong character—sometimes feel like losers in certain situations. How often have you felt this way in the past?

1	2	3	4	5	6	7
never						Very often

11. When something happened, have you generally found that:

1	2	3	4	5	6	7
you over-estimated or under-estimated its importance						you saw things in the right proportion

12. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1	2	3	4	5	6	7
very often						very seldom or never

13. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7
very often						very seldom or never

Post-Traumatic Growth Inventory

Your experience after the life-threatening event

If you had a trauma, indicate for each of the statements below the degree to which this change occurred in your life as a result of trauma using the following scale.

0= I did not experience this change as a result of my trauma.
1= I experienced this change to a very small degree as a result of my trauma.
2= I experienced this change to a small degree as a result of my trauma.
3= I experienced this change to a moderate degree as a result of my trauma.
4= I experienced this change to a great degree as a result of my trauma.
5= I experienced this change to a very great degree as a result of my attack.

1. I changed my priorities about what is important in life. ____

2. I have a greater appreciation for the value of my own life. ____

3. I developed new interests. ____

4. I have a greater feeling of self-reliance. ____

5. I have a better understanding of spiritual matters. ____

6. I more clearly see that I can count on people in times of trouble. ____

7. I established a new path for my life. ____

8. I have a greater sense of closeness with others. _____

9. I am more willing to express my emotions. ____

10. I know better that I can handle difficulties. ____

11. I am able to do better things with my life. ____

12. I am better able to accept the way things work out. ____

13. I can better appreciate each day. ____

14. New opportunities are available which wouldn't have been otherwise. ____

15. I have more compassion for others. ____

16. I put more effort into my relationships. ____

17. I am more likely to try to change things that need changing. ____

18. I have a stronger religious faith. ____

19. I discovered that I'm stronger than I thought I was. ____

20. I learned a great deal about how wonderful people are. ____

21. I better accept needing others. ____

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