

Posttraumatic Growth as a Multidimensional Buffer to Severe Death Anxiety: A case of Survivors of the Garissa University Terrorist Attack, Kenya

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Abstract

The subject of death remains uncomfortable across many cultures globally. Exposure to one's own death could trigger severe existential anxiety which has been widely seen as negative. However there is emerging evidence that death anxiety has the potential to bring about positive transformation that could act as a protective factor to future threat to life. This study sought to examine the positive outcomes of death anxiety among survivors of the Garissa University terrorist attack. The study employed the mixed methods sequential explanatory design by combining survey and phenomenological research designs. A sample of 257 participants was selected using simple random sampling, extreme case sampling and automatic inclusion sampling techniques. Data were collected using the Posttraumatic Growth Inventory (PTGI) and in-depth interviews. The findings of the study established that three years after the life threatening experience of the terrorist attack, survivors reported significant shift in their world view. Specifically survivors reported increased self-esteem, improved self-efficacy, increased altruistic behavior, spiritual growth and improved interpersonal relationship. This was corroborated by high means on the posttraumatic growth dimensions: Relating to others (3.828), new possibilities (3.699), personal strength (3.789), spiritual change (4.00) and appreciation of life (3.611). The study recommends focus on posttraumatic growth as a strategy for management of death anxiety resulting from experience of life threatening events.

Key Words: Death anxiety, Death awareness, Posttraumatic Growth, Buffer

Introduction and Background

Death is an important stage of the human life cycle yet remains one of the most feared topics across the world. Negative perception of death is evident in many cultures where euphemisms are employed when talking about death. Afful (2010) linked the use of euphemistic statements such as, 'passing away' instead of 'dying', 'laid to rest' instead of 'buried', 'remains' instead of 'corpse,' 'life threatened patients' instead of 'dying patients' and 'fallen soldiers' instead of 'dead soldiers' among others to death anxiety. Nyakoe (2012) and Ondimu (2014) asserted that

the use of euphemisms is a proof for lack of death acceptance which is a soft form of death negation.

Death anxiety is generally an uncomfortable experience but becomes even more severe when triggered by exposure to one's own death. Globally, scholars continue to report conflicting findings on death anxiety. For instance, studies have found that there exists a linear relationship between death anxiety and age, implying that there is less fear of death among young people as compared to older adults (Galt & Hayslip, 1998; Gesser, & Reker, 1988; Kastenbaum, 2001; Neimeyer & Van Brunt, 1995). Contrary to these findings, other studies have found a curvilinear relationship between death attitude and age. Middle aged adults have been found to record the highest levels of fear of death (Depaola, Griffin, Young, & Neimeyer, 2003; Kastenbaum, 2001). In a study conducted in Nairobi, Asatsa (2020) posited that death anxiety is highly influenced by various factors such as threatening process of dying, unfulfilled life goals, fear of severing family ties and fear of hell in the afterlife.

With many studies focusing on antecedents of death anxiety, there is relatively insufficient literature on the behavioral outcomes of death anxiety. Awareness of one's own death or exposure to life threatening events could trigger various responses that could be used to infer possible behavioral outcomes of death anxiety. Life threatening events such as war, rape, accidents, terror activities, natural disasters and terminal illnesses have been known to cause significant psychological dysfunction such as dissociation, antisocial behavior, school problems (Mwania & Muola, 2013); and depression (Vitriol et al., 2014). Various studies across the world link exposure to death with psychological problems such as development of aggressive behaviour (Odhayani, Watson, & Watson, 2013), low self-esteem (Lauterbach & Reinland, 2008) and negative effect on the neurobiological system (Malejko, Ablner, Plener & Straub, 2017; Sherin & Nemeroff, 2011).

Apart from the highly stressful outcomes of death awareness, studies also show that death anxiety has the potential to trigger long-term positive outcomes commonly known as posttraumatic growth (Kilmer, Cann & Tedeschi, 2012; Siqveland, Hafstad, & Tedeschi, 2012). Also, Calhoun & Tedeschi (2006) supported this assertion with their research findings indicating that people who experience life threatening events are likely to undergo fundamental changes in their world view and develop psychological adaptation and life awareness beyond their previous

level of functioning. According to Solomon, Greenberg, and Pyszczynki (2015), confronting humans with awareness of their own death generates an existential threat. To address this threat, the mind develops a psychological buffer which is exhibited in form of three key defense mechanisms namely world view defense, increased self-esteem and improved interpersonal relationships. In support of this concept, Kesebir & Pyszczynki (2012) suggested that exposure to death could influence certain aspects of human behavior ranging from religion, human sexuality, legal decision making and psychopathology. According to Tedeschi and Calhoun (1996) posttraumatic growth is multidimensional phenomenon that manifests in form of new possibilities, relating to others, personal strength, spiritual change and appreciation of life.

Despite the area of posttraumatic growth being relatively new, studies have been conducted on demographic factors that may affect this phenomenon. Koutana, Jelinek, Blatny & Kepak (2017) found positive relationship between age and PTG. In their sample of 97 participants, they found that there was higher PTG among older children and adolescents as compared to younger children. The results also found significant gender difference in PTG with females reporting higher PTG than males. The study was longitudinal measuring this phenomenon among 50 girls and 47 boys aged between 11 and 25 years who had survived childhood cancer. Data were collected using Benefit Finding Scale and Posttraumatic Stress Disorder Index. This is consistent with the assumption that certain cognitive maturity is required to process traumatic events. It could also be argued that the meaning attached to traumatizing events among children may be very different from that of adults.

Ullman (2014) reported similar findings in a sample of 1863 female adult survivors of sexual assault. The study used quantitative research with PTGI as the main data collection instrument. The findings indicated that older age, higher education and ethnic minority were significantly related to higher posttraumatic growth. Education level may facilitate development of PTG, through its ability to enhance development of cognitive functioning of individuals, which is necessary for trauma processing.

Contrary to these findings, other studies have shown age as negatively related to PTG. Tremolada et al., (2016) reported negative correlation between age and PTG. This study shows that children reported higher PTG as compared to the adults. In a study on a sample of 2080 survivors of Wenchuan earth quake in China, younger survivors aged between 18 and 30 years

reported higher PTG than the older adults aged between 51 and 60 (Jin, Xu, Liu, & Liu, 2014). This is consistent with the findings of Kalpakjian et al., (2014) who conducted a cross sectional study on a sample of 824 survivors of spinal cord injury. Other studies have also ruled out any association between age and PTG. For instance, a study by Tokgoz et al., (2008) on 100 patients diagnosed with cancer found no significant association between age and PTG.

Gender differences have also been reported in PTG studies. Tanya et al., (2010) analyzed 70 studies (N=16076) and reported a moderate gender difference in self-reported posttraumatic growth. In this analysis, women reported higher PTG than men. Similar findings were reported by Kalpakjian et al., (2014) where women recorded higher PTG than their male counterparts. The higher PTG among women could be accounted for by the nature of women being able to express their emotions and seek social support more easily than men. Expression of blocked and unprocessed emotions is an important aspect in trauma therapy.

However, Jin et al., (2014) reported gender differences in PTG with men scoring higher than women. The study was conducted among the Chinese earth quake survivors. The study used a sample of 2300 individuals who had been rescued from the earthquake. The variables were assessed using Posttraumatic Growth Inventory (PTGI) and Posttraumatic Stress Disorder Checklist (PCL-C) one year after the earthquake. The higher PTG among men in the study could be as a result of the Patriarchal nature the societies in which men are cultured to be tough and resistant to adversity hence the seemingly higher resilience in men. Butler & Joseph (2010) had also reported association between PTG and other demographic factors such as education and socioeconomic status. Their study found higher PTG in survivors with higher socioeconomic status, higher education and younger age. Ullman (2014) also identified education level and ethnic identity as other factors that could predict posttraumatic growth. The purpose of this study was to examine how exposure to the extremely threatening event of narrowly escaping death transformed the survivors of Garissa University terrorist attack where 148 students were brutally killed (Muraya, 2016). The survivors of this event either escaped the terror attack with injuries or witnessed the brutal killing of their colleagues, an experience that brought them very close to their own death. The main purpose of this study was to examine the various dimensions in which psychological buffer against death anxiety was exhibited among the survivors of Garissa University terrorist attack.

Methodology

The study employed mixed methods sequential explanatory design by combining survey and phenomenological research designs. According to Ivankova, Cresswell, & Stick (2006), this design takes a two-phase approach. Quantitative data was collected and analyzed in the first phase, followed by collection and analysis of qualitative data. The target population was 650 survivors of the Garissa University terrorist attack which took place in April, 2015. The target population was estimated to be 650 Garissa University terror attack survivors, who were transferred to Moi University in Eldoret. Following the temporary closure of the university after the attack, the majority of the students who had survived the attack took a break from their studies to facilitate relocation procedures. It was not until 2016 that 650 first year and second year students transferred to Moi University in Eldoret. These were the students who did not feel comfortable to continue with their studies in Garissa University, which was the place of the attack. They were integrated within the population of Moi University main campus and were then proceeding with their studies. The unwillingness of these students to return to Garissa University could be as a result of high level of trauma experienced from the attack. These students had also undergone counseling at various levels. In this population, 409 were male while 241 were female. The majority of these students (about 500) were Christians, 93 were Muslims while 57 belonged to other religions.

The population was also homogenous in terms of the traumatizing event they experienced. They all went through the terror attack in the same environment and got transferred to the same environment away from their original place of residence. These characteristics made the population under study to be rich in the information that the researcher sought to find. It also made it the most appropriate population to use in computing group differences since the homogeneity of the group was helpful in eliminating some of the extraneous variables that could have affected such differences.

The total sample size for this study was 257 participants of which 247 were students selected by simple random sampling for quantitative data. Ten students were selected from among the 247 using extreme case sampling technique for in-depth interviews. These were students who had reported the highest distress during posttraumatic screening. Parents of the 10 students were also recruited for in-depth interviews for corroborative data. The sample size was determined using

Yamane's formula. The data collection exercise was set to coincide with the monthly meeting of the survivors at Moi University main campus. In the meeting which comprised of 420 participants, numbered cards were issued to the whole group randomly after which those whose cards were numbered 1-247 selected to respond to the questionnaire.

Data were collected using the Posttraumatic Growth Inventory (PTGI) which is a 21-item standardized scale developed by Tedeschi & Calhoun (1996). The inventory was used to measure the factors of posttraumatic growth among the survivors of Garissa University terrorist attack as a result of their death anxiety. The questionnaire was administered by the researcher and responses collected on immediately. All the 247 participants responded to the questionnaire. The inventory is a psychometrically sound tool with initial norming reliability being reported as: New possibilities with reliability of 0.84, Relating to others with reliability of 0.85, Personal strength with reliability of 0.72, Spiritual change with reliability of 0.85 and Appreciation of life with reliability of 0.67 with overall reliability being 0.90. The initial reliability was obtained from a study conducted among American undergraduate psychology students who had experienced various life threatening events (Tedeschi & Calhoun, 1996). The questionnaire has reported sound psychometric qualities among French, Dutch, Portuguese, Spanish, Hebrew, Chinese and German samples (Cadell et al., 2015; Ho et al., 2004; Jaarsma et al., 2006; Lev-Wiesel & Amir, 2003; Maercker et al., 2001;; Teixeira et al., 2013; Weiss et al., 2006).

Participants were required to rate how they experienced each of the 21 items after the Garissa University terrorist attack. Each of the 5 PTGI domains has corresponding test items from the 21 items. The domain score was obtained by computing the means for each of the 5 domains. The lowest possible score was 0 while the highest possible score was 5. After the quantitative phase of the study, ten students who scored highest on the posttraumatic growth were selected through extreme case sampling to provide qualitative data through in-depth interviews. Ten parents of the students participating in the qualitative phase were selected by automatic inclusion to give corroborative qualitative data. Qualitative data were captured through in-depth interviews where the 10 students were asked to describe the various positive transformations they had undergone as a result of their experience with the terrorist attack after which each of their parents was also interviewed to provide corroborative information on the transformation.

Given the sensitivity of the phenomenon under study, ethical standards were adhered to. The study was approved by the Catholic University of Eastern Africa and National Commission for Science Innovation and Technology (NACOSTI). Participants went through psychological debriefing after the study to address any emotional issues that might have been triggered by participating in the study.

Results

The study sought to find out the levels of posttraumatic growth among the survivors of Garissa terrorist attack. The results are presented in Table 1 and backed up by themes from qualitative data.

Table 1: Posttraumatic Growth Levels of Garissa University Terrorist Attack Survivors

Descriptive Statistics	Minimum	Maximum	Mean	Std Deviation
Relating to others	1.7	5.0	3.828	.7310
New possibilities	1.2	5.0	3.699	.8278
Personal strength	1.3	5.0	3.789	.8962
Appreciation of life	1.0	5.0	3.611	.9491
Spiritual change	0.0	5.0	4.000	1.1081
Total posttraumatic growth	35.0	105.0	79.103	13.9023

The highest growth was recorded on the spiritual domain (mean=4.00; standard deviation=1.10), with the least growth recorded on appreciation of life (mean=3.61; SD= 0.95). The overall post traumatic growth was 79.103 out of a total possible score of 105. The results indicated that all participants recorded high posttraumatic growth on all the five domains. All the scores were above the average score of 2.5.

In-depth interviews were also conducted in order to capture the subjective posttraumatic transformation experienced by survivors as a result of their death anxiety. The aim was to corroborate the posttraumatic growth data acquired using the posttraumatic growth inventory, which is a quantitative tool. Participants were asked to give description of the positive transformation they had experienced since the attack. After coding and categorizing data, 7

themes describing the survivors' forms of posttraumatic growth emerged namely spiritual growth, self-esteem, altruism, self-efficacy, appreciation of life and interpersonal relationships.

The parents were asked to report the observable transformations they had noted in their daughters and sons who had gone through the experience of the attack. The sample of parents comprised of 6 females and 10 males. The students who participated in the in-depth interviews comprised of 5 females and 5 males.

Spiritual Growth

Spiritual growth was also reported by all the survivors who were interviewed. Participants reported that the existential threat from the attack had helped them review and strengthen their relationship with God. They observed that commitment to the teachings of their religion was strengthened and that they attended their worship services and other religious rituals without fail. One participant said,

Before the attack I used not to bother attend church. My commitment to church was very weak. After the attack, I believed there is God who saves. The way I escaped death was not through any man's effort but God. After getting a second chance to live, I have decided to be serious with matters of God. (Participant 01, personal communication)

Another participant reported,

I used to hear about God before the attack but now I know him. The way I was saved while many others died proved to me that God really loves me. I work harder nowadays to avoid the things that God hates and to do what he commands. (Participant 04, personal communication).

Participants who were already committed to the teachings of their religion reported higher commitment after the attack. Some saw the attack as a trigger to get more involved in the service of God and worship. One participant reported,

I was born again before the attack but now I have proof of God's existence. Since the time of the attack till now, I have become more involved in ministry work and I have been promoted to serve as the pastor of my local church. I was doing political science but immediately I finish I want to study Theology. (Participant 10, personal communication).

There were other participants who got restructuring of their faith in God. God was not seen as a distant being who lives in Heaven but a personal friend who lives within. Participants reported closer and personal encounter with God as compared to the time before the attack. A participant said, *“I knew God as the God of my parents. I used to obey God according to what my parents said but now I know him as my personal God.”*(Participant 04, personal communication).

The survivors’ experiences were supported by findings from interview of their parents. All parents interviewed affirmed the spiritual growth reported by the survivors. They reported to have noticed increased participation of their sons/daughters in religious rituals. There was consensus that the survivors had shown great change in their commitment to spiritual activities. Some survivors were reported to be more involved in prayer sessions in church with consistent weekly attendance since the attack. Other survivors were reported to have taken leadership roles in church while others had even converted from non-church attendance to committed Christians. A parent reported, *“My son was a Christian before the attack but I have noted great change in his relationship with God. He has become more serious and his passion for church matters has gone high.”* (P10, personal communication). Another parent said,

I noticed some change in my daughters’ commitment to spiritual matters since she went through the terror attack experience. She is actively involved in children work in church and joined the intercessory team where is very active. She attends the prayers consistently. (Part05, personal communication).

The parents’ views were to a large extent congruent with the views of the survivors who had reported improvement in their spiritual functioning since undergoing the terrorist attack. According to the parents, the narrow escape of the survivors from death is an act of God and this could have prompted them to move closer to him as a reward of having saved them from the attackers.

Relating to Others

In this study, relating with others was the second highest posttraumatic growth domain with a score of 3.828. Interview data from survivors also supported these findings. Participants reported improvement in their interpersonal skills in various forms. A majority of them reported a widened network of friends after the attack. They developed the urge to make more friends and

actually worked to achieve this. The number of friends they had after the attack was far much higher than they had before the attack. Other participants reported deeper relationship with their friends and significant others. They observed that the experience of the attack made them value the relationships they had with friends and family. The result was closer, stronger and more trusting relationships. The frequency of communicating with family and friends after the attack increased and conflict resolution with significant others was given priority. Participants reported that they worked harder to avoid hurting their significant others and ensured when conflicts arose they were sorted out before escalation. One participant said,

My relationship with parents, siblings and friends is better. After nearly dying in the attack, I have resolved to value the people that God has brought to my life. I don't like starting conflicts with my parents and friends as I did before the attack. (Participant 07, personal communication).

A number of participants reported to have developed a thorough vetting approach before accepting anybody to become a friend. They asserted that unlike before the attack, becoming friends with people was harder and longer but when the friendship was struck, the bond was very strong. These participants reported fewer friends but with very strong bonds. One participant said, *I don't rush to admit friendship proposals. I take time and check for qualities of people before I become their friend. I prefer fewer but more honest and closer friendships* (Participant 09, personal communication).

Some other participants also developed the tendency to admit friends without conditions. They felt that the experience of the attack awakened their unconditional positive regard for others. They preferred to view others as humans and not basing on their qualities or any expected benefits.

One participant reported,

When we were rescued and taken to the army barracks, I received help from people of various cultures. We had believed that Muslims were bad but one of the ladies who helped me was a Muslim. From this time I broke all the hatred I had and decided to love people irrespective of their tribe, religion, culture and class (Participant 01, personal communication).

Interview data from parents of survivors replicated similar results as those from the PTGI on improved interpersonal skills. The parents reported improvement in the network of friends' survivors had developed since the attack. The number of new friends to the survivors had increased significantly. Some parents reported that their sons and daughters were more zealous in acquiring and maintaining friendships from the time they were rescued from the attackers. Parents also observed that the family commitment of the survivors had moved a notch higher. Most of the parents reported that their daughters and sons who had survived the attack had shown an upward trend in obedience to family rules and participation in conflict resolution in the family. They noted a common trend across all the survivors interviewed on improved closeness to relatives. The attack had reorganized the survivors' friendships and they were now going through a period of acquisition of new friends and strengthening the existing friendships.

A parent posited,

My daughter was shy and had very few friends before the terror experience. She was very reserved. For the last few years since rescue from the Garissa terror attack, she gradually became talkative, was more engaging with friends and now she is a very social person. (P03, personal communication).

Another parent said, *my son makes friends easily without selecting their social status. Unlike before the attack he interacts well with his peers in the village both the educated and the uneducated.* (P01, personal communication).

Personal Strength

In this study, personal strength recorded a score of 3.789 which was higher than that of other global studies. In addition to the quantitative reporting of this domain, survivors subjectively experienced this growth as improved self-esteem. Some participants noted that their self-esteem had greatly improved since the terrorist attack. The subjective self-rating of a number of participants was higher. Participants felt that they had higher self-appreciation, positive view about their general appearance and were not much bothered by negative views of others about them. The narrow escape of the participants from death during the attack was a confirmation of how God and people loved them. They reported that once they experienced this great love from God and people, they had no option but to love themselves more. The participants also cited the

increased network and quality of friends as the reason for discovery of self-worth. Participant 05 responded, *I have noticed a big change in the way I view myself. I have greater regard for myself and feel am more valuable now than before the attack.*(Personal communication).

Improvement in self-esteem after adversity could be associated with personal strength dimension of PTGI. Other participants reported personal strength as increased self-efficacy which involved strengthening of belief in themselves and their capabilities. They felt that they were stronger than before the attack and that they could withstand other threatening challenges. Some of the participants indicated that they were more courageous and were not scared of facing death. The victory from this attack gave the survivors more hope, and challenged them not to depend on people to come out of difficult situations. Participant 02 said,

From the time of the attack till the rescue time, it took over six hours. The barracks near our college did not respond as we expected. We hoped in the security personnel in Garissa to save us but it took so long for security forces from Nairobi to arrive. By the time they arrived many students had been killed. My survival was not through any man's effort and from that time I stopped being dependent on other people but believed I can face and solve my own problems (Personal communication)

Participant 07 said, *I believe I am stronger to face worse challenges in the future. The attack left me stronger and more determined. I still love people but in the time of trouble, I can only count on myself* (Personal communication).

Appreciation of Life

Appreciation of life was reported from the quantitative data with a mean of 3. 611. It was also reported by the interviewed survivors. Most of them reported to have developed new ways of viewing their lives after the attack. They agreed that they now put a lot of value on the things they took for granted before the attack. For these participants, waking up every morning alive was viewed as a privilege. The thought of being alive when many of their friends died innocently greatly challenged their view. A participant said, *My life is special and I don't take it for granted to be alive every day. I can't comprehend why my friends were separated from me and killed while I was spared.* (Participant 09, personal communication).

Other participants reported to be more optimistic about their own lives. They believed that greater times were ahead and that the reason their lives were spared was for some divine and special assignment they needed to accomplish in future. The negative aspects of their lives were less stressful since their minds were more occupied by the positive things and achievements they had gained. The positive thinking attitude among these participants was reported to have increased gradually after the attack. The attack experience generated thoughts about end of life with majority of participants beginning to view life as very short and uncertain. This generated the feeling of living fully and doing the best every single day that one was still alive. Participant 06 reported,

Every single day is my best day. I don't know about tomorrow. I try to do my best each day and live as if tomorrow is not coming. The way I live now is more important than planning for how I want to live tomorrow (Personal communication).

Parents of survivors did not report to have observed appreciation of life in the survivors. This could be as a result of the covert nature of appreciation of life.

Altruism

Interview data revealed development of altruistic behavior among survivors, a theme that could not be associated with any of the five posttraumatic growth domains measured by the PTGI. The researcher conceptualized this as a new theme in posttraumatic growth. Survivors reported to have developed increased zeal to help other people after the attack. A number of the participants reported having developed a sense of helping other people without necessarily knowing their background information. Participants reported that they found themselves obligated to dedicate their resources to help others especially when they had to choose between helping others and themselves. A number of the survivors went for training in helping professions like counseling, pastoral work and first aid in order to help them achieve their goal of serving others. Other participants reported to have developed a sense of activism especially when it comes to defending the rights of others. Participant 10 said,

I have developed the courage to face anyone irrespective of their status in society especially when I feel that they are stepping on the rights of others. I fear no one and would like to stand with the truth in order to see a just society (Personal communication).

Development of altruistic behavior among survivors was also observed by parents who reported adjustment in the survivors giving habits. They observed that their sons and daughters had developed excessive giving behavior sometimes forgetting their own needs. The survivors were reported to have become more sensitive to the needs of others especially those in need of material help. Their giving in church had also improved beyond the pre-attack levels. The same behavior had also been reported within their families. Parents felt that the rescue they received was the highest form of help one could ever get from strangers. This could have informed the philosophy of helping others that had slowly developed among the survivors. To some parents, this could have developed as a result of the spiritual growth that was earlier reported among the survivors. A parent reported, *Yes, my daughter is a great giver since the terror attack. It is like she suspended her own needs to focus on the needs of others, strangers or friends* (P06, personal communication).

Motivational speaking and helping others achieve their goals and grow was another milestone cited by the participants. Their general concern for the welfare of others increased after the attack. A number of the participants viewed themselves as defenders of others' rights and promoters of justice. This perception was reported to have developed after experience of the terror attack. Participant 09 reported, *I have had a problem of sharing resources between others and I. whenever the resources are not enough, I end up giving to others in need and living myself out* (Personal communication). Another participant said, *I am more concerned with the welfare of others. Every time I want to motivate others to achieve their goals and stand in the way of any unjust treatment of others* (Participant 10, personal communication).

On the five dimensions of posttraumatic growth, only three were reported by the parents interviewed. The three domains were those that could easily be observed. Several dimensions: new possibilities, appreciation of life, self-esteem and personal strength are important areas of posttraumatic growth but could not be reported by parents as they are more intrinsic and subjective. For example, it may be difficult for a person to tell the change in self-esteem of others without measuring. However, observing religious behavior and interpersonal relationships is easier; hence the few reported dimensions of posttraumatic growth as reported by the parents.

Discussion

According to Terror Management Theory (TMT), mortality salience is a strong motivation towards development of psychological buffer against death anxiety (Kesebir & Pyszczynki, 2012). The theory identifies three main domains of the death anxiety buffer that individuals develop as a result of exposure to death namely world view defense, self-esteem and close interpersonal relationships. These death anxiety defenses help individuals to manage the existential anxiety that comes with realization that death is inevitable.

World view defense: These are the cultural values and beliefs that individuals employ to manage life threatening incidents by purporting to offer literal or symbolic immortality. Such values include belief in life after death, belief in a supernatural power, national identity, human superiority over animals and posterity (Hayes, Schimel, Arndt, & Faucher, 2010). According to TMT, these values create a sense that individuals are part of a system that will exist beyond death. For instance, TMT argues that religion was created as a way of helping humans cope with death and that being religious reduces the effects of awareness of a life-threatening event. The findings of this study revealed that participants reported significant change in their world view in terms of spiritual change, appreciation of life and spiritual growth. Participants reported to have developed a closer relationship with God and began appreciating things that they once neglected. A closer relationship with God would help survivors faced with the threat of death accept death with assurance that they would continue living in the afterlife world.

Spiritual growth has widely been reported among many other survivors of critical incidents across the world. Kryger & Lindren (2011) investigated posttraumatic growth among former child soldiers of the Lord's Resistance Army in northern Uganda identified faith in God as a consistent theme reported by majority of the participants. The study used interviews as the data collection method from a sample of 12 youths. The participants reported having found hope through faith in God, increased praying and they attributed their rescue from captivity to God. This was also reported by a study conducted by Smith et al., (2017) on the survivors of Canterbury earthquake series. The findings showed that a majority of the participants reported improvement in their relationship with God. Attendance of church and involvement in other religious rituals was reported to have improved following experience with the earthquake.

Elevated Self-esteem: According to TMT, cultural values determine what individuals consider meaningful in life, and form the basis for one's self-esteem. Self-esteem is attained by living up

to the standards proposed by ones' world view. Terror management theory has found that high self-esteem is a buffer against death anxiety created by life threatening incidents (Kesebir & Pyszczynki, 2012). The theory proposes that death anxiety needs to be countered by working to accept one's mortality, working to connect with continuity of life and the need to have symbolic immortality.

The findings of this study showed that survivors of Garissa University terrorist attack reported improved self-esteem in form of personal strength, new possibilities and self-efficacy. Participants discovered new competencies that they possessed that they were not conscious of prior to the exposure to the life-threatening event. The findings of the current study are similar to other global studies which reported improved interpersonal relationships (Calhoun, Tedeschi, Cann, & Hanks, 2010; Hungerbuehler, Vollrath, & Landolt, 2011). The feeling of having emerged from the attack alive was like celebration after winning a great war. The feeling of victory from war among the participants made them perceive themselves as heroes. The change in self-perception was very instrumental in building the self-esteem of the participants. According to Kesebir & Pyszczynki (2012), TMT holds the view that self-esteem is attained by living according to the standards proposed by one's world view.

The findings of Smith et al., (2017) identified self-esteem as perceiving self as stronger. They reported that majority of the participants in their study appeared to have discovered certain inborn qualities that were not accessible prior to the earthquake experience. Kryger & Lindren (2011) also reported similar findings but referred to personal strength as perception of self. The former child soldiers interviewed had reported increased urge to uphold their core values and viewed themselves as victorious after abandoning the forced service. The current study attributed this theme to the posttraumatic growth domain of personal strength.

Close interpersonal relations: Terror Management Theory has found that close and healthy human relationships buffer against death anxiety. Studies have shown that reminders of death amplify the need to maintain high self-esteem, focus on one's cultural world view and close relationships (Burke, Mortens, & Faucher, 2010). The findings of this study indicated that survivors of Garissa University terrorist attack developed death anxiety buffer through improved interpersonal relations which was exhibited in form of altruism and improved interpersonal skills.

Kryger & Lindren (2011) identified this buffer as social support where participants reported growth in terms of caring for their family and close friends, making effort in relationships and the intense need for acceptance. Smith, et al., (2017) also identified improved interpersonal skills among the Canterbury earthquake survivors. The survivors reported better relationships and more appreciation of others following their experience with the earthquake. Improvement in interpersonal relationships is supported by the Terror Management Theory (TMT) which asserts that people who are confronted with the possibility of own death usually report better interpersonal relationships as a buffer to death anxiety. Meaning management theory also holds similar views for people who are faced with the threat of death (Wong, 2008).

Wong (2008) identified various dimensions that facilitate personal meaning and eventually, acceptance of trauma experience namely achievement and goal setting (agency), intimacy and family (love), relationships (community), self-acceptance (maturity), religion (spirituality) and fair treatment (morality). Improved interpersonal relationships was also supported by Hilaire, Michels & Canevello (2016) who found that individuals who have experienced traumatic events reported increased responsiveness to their spouses, which confirms the findings of the current study.

Altruistic behavior as a buffer to life threatening events has also been reported in other studies globally. Thrasher's (2013) findings on pride among US servicemen from the Iraqi war established that soldiers reported being able to serve others and depend on them. This study found similarity between altruism and greater sense of community and pride based on the participants' narratives. From the tenets of terror management theory, altruism could be associated with world view defense where individuals threatened by death anxiety struggle to create symbolic immortality through national identity, community consciousness, religion and belief in life after death (Hayes, Schimel, Arndt, & Faucher, 2010). There is evidence of an attempt by survivors of critical incidents in the reviewed studies to improve their communal consciousness after adversity.

Conclusion

The study established that exposure to extremely life-threatening events not only causes psychological distress but triggers long term growth that acts as buffer against present and future

death anxiety. The generated death anxiety buffer helps individuals withstand the possible damaging effect of prolonged distress as a result of exposure to own death. Mental health practitioners could find death anxiety buffer as therapeutic experiences that could be promoted among survivors of life-threatening events.

References

- Afful, J. (2010). *A genre analysis of death announcement in Ghanaian newspapers*. (http://www.language_and_society.org/journal/1-2/7-afful.pdf.accessed 5 August 2016)
- Asatsa S. (2020) Death attitudes as possible predictors of death preparedness across lifespan among nonclinical populations in Nairobi County, Kenya. *Indian J Palliat Care*, 26.287-94. 10.4103/IJPC.IJPC_127_19
- Burke, B. L., Mortens, A., & Faucher, E. H. (2010). Two decades of terror management theory: A Meta-analysis of mortality salience research. *Personality and Social Psychology Review*, 14, 155-195
- Butler, L. D., & Joseph, S. (2010). Positive change following adversity. *PTSD Research Quarterly*. 21(3), 1-8.
- Cadell, S., Suarez, E., Hemsworth, D. (2015). Reliability and validity of the French version of the Posttraumatic Growth Inventory. *Open Journal of Medical Psychology*, 4, 53-65.
- Calhoun, G. L., Tedeschi, R. G., Cann, A., & Hanks, A. E. (2010). Positive outcomes following bereavement: Paths to Posttraumatic Growth. *Psychologica Belgica*, 50(1&2), 125-143.
- Calhoun, L. G., & Tedeschi, R. G. (2006). Foundations of posttraumatic growth: An expanded framework. In L. G. Calhoun, & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth: Research & practice* (pp. 3-23). Mahwah, NJ: Lawrence Erlbaum Associates.
- DePaola, S., Griffin, M., Young, J., & Neimeyer, R. A. (2003). Death anxiety and Attitudes toward the elderly among older adults: The role of gender and ethnicity. *Death Studies*, 27, 335-354.
- Galt, C., & Hayslip, B. (1998). Age differences in levels of overt and covert death Anxiety. *Omega*, 37(3), 187-202.
- Gesser, G., Wong, P. T., & Reker, G. T. (1988). Death attitudes across the life span: The development and validation of the Death Attitude Profile (DAP). *Omega*, 18, 109-124.
- Hayes, J., Schimel, J., Arndt, J., & Faucher, E. H. (2010). A theoretical and empirical review of death thought accessibility concept in terror management research. *Psychological Bulletin*, 136, 699-739.
- Hilaire, N., Micheles, V., & Canevello, A. (2016). Supporting close others' growth after trauma: The role of responsiveness in romantic partners mutual Posttraumatic growth. *Psychological Trauma*, 8(3), 334-342. doi:10.1037/tra0000084.

- Ho, S., Chan, C., & Ho, R. (2004) Posttraumatic growth in Chinese cancer survivors. *Psycho-Oncology*, 13, 377-389. <http://dx.doi.org/10.1002/pon.758>
- Hungerbuehler, I., Vollrath, M. E., & Landolt, M. A. (2011). Posttraumatic growth in mothers and fathers of children with severe illnesses. *Journal of Health Psychology*, 16, 1259 – 1267. <http://dx.doi.org/10.1177/1359105311405872>.
- Ivankova, N. V., Cressweell, J. W., & Sticks, L. S. (2006). Using mixed methods Sequential explanatory design: From theory to practice. *Field Methods* 18(3). doi: 10.1177/1525822X05282260.
- Jaarsma, T. A., Pool, G., Sanderman, R., & Ranchor, A.V. (2006) Psychometric poperties of the Dutch version of the Posttraumatic Growth Inventory among cancer patients. *Psycho-Oncology*, 15, 911-920. <http://dx.doi.org/10.1002/pon.1026>.
- Jin, Y., Xu, J., Liu, H., & Liu, D. (2014). Posttraumatic stress disorder and Posttraumatic growth among adult survivors of Wenchuan Earthquake after 1 year: Prevalence and correlates. *Archives of Psychiatric Nursing*, 28, 67-73.
- Kalpakjian, C. Z., McCullumsmith, B. C., Fann, R. J., Richards, S. J., Stoelb, L. B., Henemann, W. A., & Bombardier, H. C. (2014). Posttraumatic growth following spinal cord injury. *J Spinal Cord Med.*, 37(2), 218-255. doi:10.1179/2045772313Y.0000000169
- Kastenbaum, R. J. (2001). *Death, society and human experience* (7th ed.). Needham Heights, MA: Simon & Schuster.
- Kesebir, P., & Pyszczynki, T. (2012). The role of death in life: Existential aspects of human motivation. In R. Ryan (Ed.), *The Oxford handbook of human motivation* (pp. 44-64). New York: Oxford University Press.
- Kilmer, P. R., Cann, A., Tedeschi, G. R., & Calhoun, G. L. (2012). Exploring Posttraumatic growth in Japanese Youth. *Psychological Trauma*, 4(4) 411-419. doi:10.1037/a0024363.
- Koutana, V., Jelinek, M., Blatny, M., & Kepak, T. (2017). Predictors of Posttraumatic stress and Posttraumatic growth in childhood cancer survivors. *Cancer*, 9(26), 1-11. doi: 10.3390/Cancers9030026.
- Kryger, S. L., & Lindgren, L. C. (2011). Fighting for a future: The potential for Posttraumatic growth among youths formerly associated with armed forces in Northern Uganda. *Intervention*, 9(1), 6-20.

- Lauterbach, D., & Reiland, S. (2008). Effects of trauma and religiosity on self-esteem. *Psychological Reports, 102*(3), 779-790.
- Lev-Wiesel, R., & Amir, M. (2003) Posttraumatic growth among holocaust child survivors. *Journal of Loss and Trauma, 8*, 229-237. <http://dx.doi.org/10.1080/15325020305884>
- Maercker, A., & Langner, R. (2001) Posttraumatic personal growth: Validation of German versions of two questionnaires. *Diagnostica, 47*, 153-162. <http://dx.doi.org/10.1026//0012-1924.47.3.153>
- Malejko, K., Abler, B., & Straub, J. (2017). Neural correlates of phototherapeutic treatment of Posttraumatic stress disorder: A systematic literature review, *Front Psychiatry, 8*, 85. doi: 10.3389/fpsy. 2017.00085.
- Muraya, J. (2016, April 2). Kenyans remember 148 victims of Garissa University terror attack. *Capital News*. Retrieved from [www. Capitalfm.co.ke/news/2016/04/kenyans-remember-148-victims-of-garissa-university-terror-attack](http://www.Capitalfm.co.ke/news/2016/04/kenyans-remember-148-victims-of-garissa-university-terror-attack)
- Mwania, M. J., & Muola, M. J. (2013). Relationship between Post election violence traumatic events and the level of Posttraumatic Stress Disorder among primary school pupils in Kibera and Kayole settlements, Nairobi, Kenya. *International Journal of Education and Research, 1*(10), 1-16.
- Neimeyer, R. A., & Van Brunt, D. (1995). Death anxiety. In H. Wass & R. A. Neimeyer (Eds.), *Dying: Facing the facts* (3rd ed., pp. 49-88). Washington, DC: Taylor & Francis.
- Nyakoe, D., Matu, P., & Ongoro, D. (2012). Conceptualization of ‘Death is a journey’ and ‘Death as rest’ in Ekegusii euphemism. *Theory and Practice in Language Studies, 2* (7) 1452-1457.
- Odhayani, A., Watson, J. W., & Watson, L. (2013). Behavioral consequences of child abuse. *Canadian Family Physician, 59*(8), 831-836.
- Ondimu, J. (2014). A socio- cultural understanding of death: A genre analysis of obituaries in a Kenyan Newspaper. *Language Matters, 45*(1) 3-22.
- Sherin, E. J., & Nemeroff, B.C. (2011). Posttraumatic Stress Disorder: The neurobiological impact of psychological trauma. *Dialogues in Clinical Neuroscience, 13*(3), 263-278.

- Siqveland, J., Hafstad, S. G., & Tedeschi, G. R. (2012). Posttraumatic growth in parents after a natural disaster. *Journal of Loss and Trauma, 17*, 536-544. doi: 10.1080/15325024.2012.678778.
- Smith, R., McIntosh, W. V., Colhoun, H., Jordan, J., Carter, F. A., & Bell, J. C. (2017). In some strange way, trouble is good for people: Posttraumatic growth following the Canterbury earthquake sequence. *Australasian Journal of Disaster and Trauma Studies, 2*(1), 31-42.
- Solomon, S., Greenberg, J., & Pyszczynski, T. (2015). *The worm at the core: The role of death in life*. New York: Random House.
- Tanya, V., Cann, A., Calhoun, G. L., Tedeschi, G. R., & Demakis, J. G. (2010). Gender differences in self-reported Posttraumatic growth: A meta-analysis. *Psychology of Women Quarterly 34*, 110-120.
- Teixeira, R. J., & Pereira, M. G. (2013) Growth and the cancer care giving experience: Psychometric properties of the Portuguese Posttraumatic Growth Inventory. *Families, Systems, and Health, 31*, 382-395. <http://dx.doi.org/10.1037/a0032004>
- Tedeschi, G. R., & Calhoun, G. L. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3), 455-471.
- Tokgoz, G., Yalug, I., Ozdemir, S., & Aker, T. (2008). The prevalence of Posttraumatic growth in patients with cancer. *Yeni Symposium, 46*(2), 51-61.
- Thrasher, S. S. (2013). Posttraumatic growth themes: An analysis of oral histories of OIF service members and veterans. *McNair Scholars Journal, 133*, 198-214.
- Tremolada, M., Bonichini, S., Basso, G., & Pillon, M. (2016). Posttraumatic stress symptoms and Posttraumatic growth in 223 childhood cancer survivors: Predictive risk factors. *Frontiers in Psychology, 2*(287), 1-11. doi:10.3389/fpsyg.2016.00287.
- Ullman, E. S. (2014). Correlates of Posttraumatic growth in adult sexual assault victims. *Traumatology, 20*(3), 219-224. doi:10.1037/h0099402.
- Vitriol, V., Cancino, A., Weil, K., Salgado, C., Asenjo, A. M., & Potthoff, S. (2014). Depression and psychological trauma: An overview integrating current research and specific evidence of studies in the treatment of depression in public mental health service in Chile. *Depression Research and Treatment, 1-10*. doi:10.1155/2014/608671.

- Weiss, T., & Berger, R. (2006) Reliability and validity of a Spanish version of the Posttraumatic growth inventory. *Research on Social Work Practice, 16*, 191-199.
<http://dx.doi.org/10.1177/1049731505281374>
- Wong, P. T. P. (2008). Meaning management theory and death acceptance. In A. Tomer, E. Grafton, & P. T. P. Wong (Eds.), *Existential and spiritual issues in death attitudes* (pp. 65-87). New York, NY: Erlbaum.