TRAUMA PROCESSING STRATEGIES AND POSTTRAUMATIC GROWTH AMONG TERRORIST ATTACK SURVIVORS AT GARISSA UNIVERSITY, KENYA

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DECLARATION

I, the undersigned, declare that this dissertation is my original work and has never been presented to any other university or institution of learning for academic credit. I have acknowledged all the information from other sources including those whom I have worked with.

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DEDICATION

I dedicate this dissertation to my beloved parents, Esther S. Ashikhube and the late Herbat F. Ashikhube and to my beloved wife, Philomenah Ndinda Asatsa and our children, Prudence Esther Asatsa and Seraphine Mwende Asatsa.

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ABSTRACT

The rising number of traumatic events is a global disastrous phenomenon. There have been sparing psychological interventions to this menace with skewed emphasis on Post-Traumatic Stress Disorder (PTSD) and less focus on the transformational side of trauma. The purpose of this study was to investigate trauma processing strategies and posttraumatic growth (PTG) among the survivors of Garissa University terrorist attack. The study was guided by six research objectives namely to examine the prevalence of initial trauma processing strategies and symptoms, to explore the indicators of posttraumatic growth, to assess demographic differences in PTG, and to determine the relationship between initial trauma severity and PTG. Other objectives were to determine the relationship between cognitive trauma processing strategies and PTG, and to evaluate the role of counseling in PTG. The study was anchored on the organismic valuing theory after adversity, and adopted the explanatory sequential mixed method research design. The target population was 650 survivors of Garissa University terrorist attack who were transferred to Moi University main campus from which a total sample of 257 participants was selected using simple random sampling, extreme case sampling and automatic inclusion techniques. Quantitative data were collected using two standardized questionnaires namely Posttraumatic Growth Inventory with reliability coefficient 0.859, Cognitive Processing of Trauma Scale with reliability coefficient 0.769, and Initial Trauma Processing Scale with reliability coefficient 0.833 as validated by Posttraumatic Stress Disorder Checklist. Qualitative data were collected using two interview guides for survivors and their parents. Data analysis was done using univariate analysis, correlation analysis and thematic analysis backed by narratives. The study established positive significant relationship between posttraumatic growth and initial trauma processing strategies, initial trauma severity, cognitive trauma processing strategies and number of counseling sessions attended after the terror attack. The study further established higher posttraumatic growth in the Garissa University terror attack survivors as compared to other global studies. The results further showed that there was no significant demographic difference in posttraumatic growth. These findings may be relevant in designing future interventions for trauma survivors that are growth focused as complementary approaches to the existing crisis-focused counseling approaches. The study recommended further research on critical incident debriefing as a dominant intervention commonly used in trauma counseling. The study also recommended dual dimension approach to trauma therapy that has both pathological and transformational focused interventions. The study further recommended regulation and coordination of counseling services to be conducted by the Ministry of Health as opposed to humanitarian organizations and the competing psychological professional bodies in Kenya.

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LIST OF ABBREVIATIONS

APA	-	American Psychiatric Association
ANOVA	-	Analysis of Variance
BCI	-	Brief Cope Inventory
CBI	-	Core Beliefs Inventory
CPOTS	-	Cognitive Processing of Trauma Scale
CUEA	-	The Catholic University of Eastern Africa
DASS	-	Depression, Anxiety, Stress Scale
DSM V	-	Diagnostic and Statistical Manual of Mental Disorders
EMDR	-	Eye Movement Desensitization and Reprocessing
ERRI	-	Event Related Rumination Inventory
MANCOVA	-	Multivariate Analysis of Variance
MMT	-	Meaning Management Theory
NACOSTI	-	National Commission for Science, Technology and Innovation
PCL-5	-	Post Traumatic Disorder Check List for DSM 5
PTG	-	Post Traumatic Growth
PTGI	-	Post Traumatic Growth Inventory
PTS	-	Post Traumatic Symptoms
PTSD	-	Post Traumatic Stress Disorder
TMT	-	Terror Management Theory
UNHCR	-	United Nations High Commission for Refugees

CHAPTER ONE

INTRODUCTION

Critical life incidents have existed in the entire human history. Such events have always been perceived in terms of distress and negative outcomes. In the recent past, there seem to be a developing paradigm shift on how people conceptualize adversity. The most central issue in the changing understanding of adversity is whether there is a positive side of traumatic events. This study sought to examine the possibility of positive outcomes of traumatic events with focus on the Garissa University terrorist attack survivors. The study acknowledged the common reality that adversity causes pain and suffering but also recognized that the suffering could ignite positive psychological transformation in the affected individuals leaving them at a higher level of psychological functioning than they were prior to the adversity.

1.1 Background of the Problem

Traumatic events such as war, rape, death and rejection have been experienced by humanity throughout history. These events are known to cause the victims significant psychological dysfunction such as dissociation, antisocial behavior, school problems (Mwania & Muola, 2013); and depression (Vitriol, Cancino, Weil, Salgado, Asenjo & Potthoff, 2014). Various studies across the world link exposure to trauma 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 (Sherin & Nemeroff, 2011; Malejko, Abler, Plener & Straub, 2017). The global challenge of rising traumatic events is therefore a multifaceted phenomenon that requires further investigation.

In the recent past, terrorism has accelerated to become one of the leading causes of trauma across the globe as a result of the Arab revolution (Brown, 2013; Salim, 2013).

Terrorism has been conceptualized differently by various disciplines but Lopez and Pineda (2011) summarized it as behaviour aimed at intimidating, causing fear and hopelessness to a group of people to achieve a political, religious or selfish ends. This is an indication that terrorism is more of a psychological strategy than a military one. The conceptualization of terrorism as psychological war was supported by Nasim, Khan and Aziz (2014) who identified a common philosophy of terror as, *'You kill hundreds and influence thousands…'*, referring to the traumatic motivation of terrorism. This is evident that the aim of terrorism is not to kill but to psychologically devastate many people through the pursuit of intimidation. This could have the potential to alter the cognitive functioning and self-concept of survivors by creating a more hopeless perception of the world.

Studies across the world show that the numbers of psychological casualties resulting from terrorism are more than the physical ones. For instance Rugiero and Vos (2013) reported that in the sarin gas attack in Tokyo in 1995, 12 people died, 900 received medical treatment and 9000 people presented with psychological complaints ranging from insomnia, grief, anger, rage and hypervigilance. Lopez and Pineda (2011) observed that in Oklahoma City bombing in 1995, there were 168 fatalities but over 8000 individuals sought crisis intervention. The psychological magnitude of terrorism has also been demonstrated by Nasim and Aziz (2014) who carried out a survey on the effects of terrorism in Pakistan and reported 3.9% physical effects, 17.2% social effects and 79.2% mental health effects. These findings point to the need for a paradigm shift in the war on terror, with more focus on psychological interventions rather than increased military spending that continues to be witnessed across the world.

The sparing focus on the psychological effects of terrorism has been cited by various scholars as one of the major causes of the terrorism cycle rather than an isolated event. This

has been argued by Gallimore (2002) who reported that unresolved trauma fuels the cycle of violence and terrorism. The analysis reported that childhood abuse and trauma were common among many terrorism perpetrators. The goal of terrorism: intimidation, dehumanization, and coercion into hopelessness constitute psychological injuries and if unresolved, the trauma produces rage which could produce antisocial terrorist behaviour. This observation was supported by Mathewson (2004) who noted that individuals who are traumatized and are not helped to resolve their trauma seek revenge for their psychological injury as a way of seeking justice. The current status of affairs which addresses the psychological aspects of terrorism sparingly could be developing a large scale breeding ground for future potential terrorism behaviour.

Trauma and terrorism is not just a global problem but a continental one too. Africa continues to face many trauma related problems in the form of election violence, perennial civil wars, and terror activities resulting in various psychological complications. Njenga, Nguithi and Kangethe (2006) reported significant prevalence of war related trauma among Ugandans, citing psychopathological complications such as post-traumatic stress disorder, depression, anxiety and somatization disorder among others. Other researchers across the continent have reported increased negative effects of traumatic events on the general population in Nigeria resulting from Boko Haram terror group (Terwase, Abdul-Talib, Zengeni & Terwase, 2015), violence in Somalia (Mills, Yun & Kleber, 2011) and the Congo conflict (Brown, 2012). It is therefore evident that the evolving problem of traumatic events on the continent cannot just be wished away but requires to be tackled in order to boost mental health standards.

Kenya, like the rest of the world, has in the recent past experienced internal political conflicts that have inflicted psychological wounds on the population. Families continue to bear psychological pain caused by various critical events such as the tribal clashes of 1991 and 1997, the post-election violence of 2007, 2008 and the perennial droughts in Northern Kenya (Nasongo & Muola, 2011). The latest wave of terror activities that has been witnessed across the country in recent years continues to strain the country psychologically. Some of the major recent incidents of terrorist attacks in Kenya include the grenade attack on Garissa Pentecostal Church in November 2011 and the bombing of an administration police camp in Wajir in January 2012 (Odhiambo, Maito, Kassilly, Onkware, Oboka, & Otipi (2013). Others include the Westgate attack of September, 2013 that claimed 67 lives (Gentleman & Kulish, 2013), Mandera bus attack of November, 2014 that claimed 28 lives (Obulutsa, 2014), Mandera quarry massacre of December, 2014 that claimed 36 lives (Catrina, 2014) and the Garissa University attack of April, 2015 that claimed 148 lives (Muraya, 2016) and is the focus of this study. As the government continues to engage the political and military dimension of terrorism, there is need to engage the psychological dimension in order to heal the psychological wounds of this menace. These events could cause serious psychological maladjustment to the survivors ranging from anxiety, disorganization, low self-esteem, depression and post-traumatic stress disorder among others. If not addressed these issues could breed hatred, bitterness and revenge in the survivors which could promote future terrorism tendency ((Mathewson, 2004).

Even though the area of traumatic events is highly researched, most studies appear skewed towards the negative outcomes of trauma (Odhayani, Watson & Watson, 2013; Sherin & Nemeroff, 2011; Terwase, Abdul-Talib, Zengeni & Terwase, 2015). Likewise, the current trauma counseling models emphasize exploring the past painful experiences of clients (Dyk &

Dyk, 2010). This problem-focused approach to trauma is not sufficient since other studies have shown that solution-focused interventions to trauma are also effective (Selekman, 2005). Solution-focused approaches that advocate for a focus on the positive outcomes of trauma, commonly known as posttraumatic growth, are sparingly researched. This study conceptualizes trauma as a dual dimension phenomenon that has both pathological and transformational sides.

Trauma experience has been shown to have the potential of shuttering one's world view and presenting the world in a totally different perspective (Kilmer, Cann & Tedeschi, 2012). To prevent trauma survivors from deeper psychological turmoil, there is need to focus them on processing the trauma experience. Processing of trauma does not just depend on the approaches used by a trauma therapist but also the various strategies that survivors employ in working out their healing. The usual approach of counseling trauma survivors from the therapists' point of view has contributed to the continued use of similar trauma interventions such as critical incident debriefing. This could have counterproductive effects on the process and outcome of therapy as all clients seem to go through similar therapy processes with very little focus on individual differences in the conceptualization of the trauma event (Warshaw, Sullivan & Rivera, 2013). The current study recognized the importance of understanding trauma processing strategies as a core component of understanding trauma survivors and therefore designing individual tailored intervention strategies to mitigate the effects of trauma. The exploration of trauma processing strategies in relation to posttraumatic growth was an attempt to explore this gap in the counseling practice which could aid in the development of posttraumatic growth- focused interventions.

In the last few decades, there has been growing literature supporting positive psychological transformation as a result of experiencing critical life incidents (Siqveland, Hafstad & Tedeschi, 2012; Kilmer, Cann & Tedeschi, 2012). Calhoun and Tedeschi (2006) reported that people who undergo traumatic experiences are likely to experience fundamental changes in their world view and develop beyond their previous level of adaptation, psychological functioning and life awareness. With the main goal of terrorism being the shuttering of the cognitive functioning of survivors and presenting the world as hopeless, exploring the positive outcomes of trauma could significantly buffer against this fallacy. Despite the available evidence showing the psychological magnitude of terrorism, resource allocation in counter-terrorism initiatives remain skewed towards military, medical and economic solutions with very little effort channeled towards psychological interventions.

The current study sought to explore this gap on dimensionality of trauma by focusing on growth after trauma, which generated new knowledge that may complement the existing trauma counseling interventions and counter-terrorism initiatives. This study investigated trauma processing strategies and posttraumatic growth (PTG) after traumatic events with focus on terrorism. The focus of this study was the Garissa University terrorist attack that took place on April 2, 2015 killing 148 students and injured many others. This heinous event that lasted for 12 hours attracted international and local coverage and left survivors, their families and the entire country in shock and trauma. Three years after the attack, this study investigated the positive transformation that survivors had gone through contrary to the common approach of looking at the negative outcomes of this experience.

1.2 Statement of the Problem

From 2011 global terrorism activities increased tremendously resulting to highly traumatized population. The Arab uprising led to the collapse of nations and emergence of new and well equipped terror groups across the globe. In Africa, the number of traumatized people, as a result of terrorism remains high due to lack of proper terrorism prevention initiatives. Being a neighbor to Somalia, a failed state and breeding ground for terrorism for over 2 decades, Kenya paid a heavy price in terms of terrorist attacks since 2011. The most devastating of these attacks were the Westgate mall siege of September 2013 that killed 67 people, Mandera quarry massacre of December 2014 that killed 39 people and the Garissa University terrorist attack of April 2015 that killed 148 people. The Garissa terrorist attack led to the closure and restructuring of the university with some students opting to transfer to other universities, majority of whom joined Moi university main campus in Eldoret.

Even though these events killed many and injured others, thousands of people were psychologically devastated including those who watched the events in the media. In response many governments across the world channeled their resources to suppression of terror groups through military campaigns and medical attention to the survivors neglecting the psychological wounds created by this phenomenon. Researchers and Psychologists on the other hand have attempted to address the psychological concerns of survivors but the focus has been on the pathological side of trauma. The current study conceptualized trauma as a dual dimension phenomenon that has a pathological side and transformative side.

This study explored the gap of trauma dimensionality and focused on posttraumatic growth of Garissa University terrorist attack survivors. The study considered this population as highly traumatized and therefore key informants due to their decision to terminate their

studies at Garissa University and transfer to a different environment. The aim was to provide knowledge to guide trauma therapists in the design of transformation focused interventions to complement the existing pathological focused ones.

1.3 Objectives of the Study

This study was guided by general and specific objectives.

1.3.1 General Objective

The overall objective of the study was to examine the trauma processing strategies of Garissa University terror survivors and how they related to posttraumatic growth.

1.3.2 Specific Objectives

1. To examine the prevalence of initial trauma symptoms and processing strategies among the Garissa University terrorist attack survivors.
2. To explore the indicators of posttraumatic growth among the Garissa University terrorist attack survivors.
3. To assess demographic differences in posttraumatic growth among the Garissa University terrorist attack survivors.
4. To determine the relationship between initial trauma severity and posttraumatic growth among the Garissa University terrorist attack survivors.
5. To determine the relationship between cognitive trauma processing strategies and posttraumatic growth among the Garissa University terror attack survivors.
6. To evaluate the role of counseling in posttraumatic growth among the Garissa University terrorist attack survivors.

1.4 Research Questions

1. What is the prevalence of initial trauma symptoms and processing strategies among the Garissa University terrorist attack survivors?
2. What are the indicators of posttraumatic growth among the Garissa University terrorist attack survivors?
3. What are the demographic differences in posttraumatic growth levels among the Garissa University terrorist attack survivors?
4. What is the relationship between initial trauma severity and posttraumatic growth among the Garissa University terrorist attack survivors?
5. What is the relationship between cognitive trauma processing strategies and posttraumatic growth among the Garissa University terrorist attack survivors?
6. What is the role of counseling in posttraumatic growth among the Garissa University terrorist attack survivors?

1.5 Tested Hypotheses

Null hypotheses

$H_0$1: There would be no significant relationship between initial trauma processing strategies and posttraumatic growth among the Garissa University terrorist attack survivors.

$H_0$2: There would be no significant demographic differences in posttraumatic growth among the Garissa University terrorist attack survivors.

$H_0$3: There would be no significant relationship between initial trauma severity and posttraumatic growth among the Garissa University terrorist attack survivors.

$H_0$4: There would be no significant relationship between cognitive trauma processing strategies and posttraumatic growth among the Garissa University terrorist attack survivors.

$H_0$5: There would be no significant mean differences in posttraumatic growth based on the number of counselling sessions attended among the Garissa University terrorist attack survivors.

1.6 Assumptions of the Study

The study assumed that

1. The Garissa University terrorist attack survivors in Moi University were traumatized by the experience of the attack.
2. The survivors had processed the trauma from the attack experience.
3. The Survivors would recall their initial reactions to the attack.

1.7 Operational Definition of Terms

Initial Trauma Processing: This is the process of working on the painful psychological memories of traumatic events to make them acceptable without much distress. In the current study initial trauma processing referred to the immediate ways that survivors of Garissa University terrorist attack employed in processing the attack. These strategies were synonymous with the DSM V trauma clusters, avoidance, arousal, negative cognitive alteration and intrusion.

Cognitive Trauma Processing: This is the process of working on psychological distress by engaging internal thinking processes and creating new meaning from the experience. In this study cognitive trauma processing referred to the long term strategies that survivor of Garissa University terrorist attack employed in dealing with the aftermath of the attack. They included regret, denial, acceptance, downward comparison, and positive cognitive restructuring.

Trauma severity: This refers to the degree of distress that trauma survivors experience after experience of a traumatic event. In the current study trauma severity referred to the frequency of DSM V trauma symptoms that Garissa University terrorist attack survivors exhibited after the attack.

1.8 Theoretical Framework

The section presents the theory on which the current study was anchored. Key concepts were examined and contextualized for the current study.

1.8.1 Organismic Valuing Theory of Growth through Adversity

The organismic valuing theory was developed by Joseph and Linely (2005) and posits that humans have inborn ability to seek growth, know what is important for them and the direction that will lead them to greater wellbeing. The theory asserts that the urge for growth can be hampered or propelled by the social environment. It is a subconscious and biological process that guides people in evaluating new experiences to enhance their growth or reach actualization. The theory conceptualizes trauma as falseness and argues that striving towards authenticity resolves the incongruence arising from trauma. The qualitative aspect of this study made it possible to access the posttraumatic growth perspective of terror survivors in the context of social environmental factors. According to Joseph and Linely (2005) the organismic valuing theory has four key tenets that explain how posttraumatic growth is attained. These are completion tendency, accommodation versus assimilation, meaning as comprensibility and meaning as significance, and eudaimonic versus hedonistic wellbeing.

Completion tendency: The theory argues that confrontation with traumatic events shatters a person's assumptive world and calls for integration of the new trauma information. It is human nature to strive to modify the existing worldview to positively accommodate new

trauma related information. Processing the new trauma information alternates between intrusive and avoidant states until a new baseline is reached, hence completion. The process of completion tendency involves various strategies, but the current study concentrated more on the trauma processing strategies that the survivors of Garissa University terror attack employed in working on their trauma.

Accommodation versus assimilation: After experiencing a traumatic event an individual's psychological status becomes unstable. A state of balance (assimilation) is reached when traumatic memory is cognitively interpreted to fit into the survivor's schemas. When schemas remain unaltered after adversity, the survivor experiences short term reprieve but remains vulnerable to subsequent traumatization. Accommodation on the other hand involves the restructuring of pre-trauma schemas of the survivor in order to positively live with the traumatic materials, leading to posttraumatic growth. This could be facilitated by intense cognitive processes within the mind of the survivors. The current study examined how the participants accommodated the terror memory and the cognitive trauma processing strategies that might have facilitated that process.

Meaning as comprehensibility versus meaning as significance: In the initial stages of traumatic events, the affected individuals search for meaning in order to understand the terror event comprehensively. This is followed by the process of assimilation or accommodation. Later the organismic valuing process begins, where existential questions are asked with the aim of seeking for meaning to understand the significance of the traumatic event. Meaning searching may lead to either negative accommodation through reactions of hopelessness, helplessness and pain; or positive accommodation through improved relationships, change of personal philosophy and change of self-view. The qualitative nature

of the exploration into the kind of posttraumatic indicators exhibited by the Garissa University terror survivors helped to bring out the subjective meaning that the survivors attached to the attack in various domains of their lives. Meaning could also have been facilitated by the counseling interventions that were offered to the survivors after the attack. This informed the focus of the study on the role of counseling in the posttraumatic growth of the terror survivors.

Eudaimonic versus hedonistic wellbeing: Hedonistic wellbeing is attained through pursuit of pleasure and avoidance of painful experiences while eudaimonic wellbeing seeks pursuit of personal fulfillment and realizing one's potential. This theory argues that posttraumatic growth does not necessarily make people happy but may make them sadder but wiser. This implies that the experience of negative traumatic reactions and posttraumatic growth are both relevant to the achievement of peace and healing in the aftermath of traumatic events. The current study examined the key roles that may have been played by the painful experiences in shaping the posttraumatic growth of the participants, hence the focus on severity of the events. Severity was explored in terms of the seriousness and prevalence of the trauma symptoms by the survivors after the attack.

Strengths of organismic valuing theory

There is evidence of self-regulation among human beings (Geldhof, Fenn & Finders, 2017), a concept that this theory asserts. Human beings can regulate themselves and make choices in life without necessarily depending on external forces. The process of finding meaning in life and striving to arise out of traumatic experience is evidence for self-regulation. The theory attempts to explain response to traumatic events in both positive and negative dimensions. The concept of assimilation addressed the illusionary and temporary trauma processing strategies while accommodation explained the relatively permanent trauma

processing strategies that lead to posttraumatic growth as captured in research question 1, 2 and 5.

Weaknesses of Organismic Valuing Theory

Critics of this theory argue that it presents an exaggerated optimism of human nature. They argue that it is questionable to view all human humans as having an innate drive to be good, yet some people pursue violence and evil (Kensit, 2010). This theory tended to explain the behaviour of survivors as they struggle out of crises but ignored the perpetrators and what motivates them to pursue the suffering of others as a goal. The theory is also seen to over rely on self-reports as a method of data collection. It is unrealistic to view people as always optimistic to strive to reach a stage where they are satisfied in life. In some circumstances people may report positive feelings when in the real sense they are struggling with negative feelings. There is therefore need to diversify the instruments for research based on this theory in order to generate more objective findings. To counter this limitation, the current study used both qualitative and quantitative data collection instruments in order to corroborate and compare the data generated by the instruments.

Justification for use of the theory

Despite its weaknesses, the theory was chosen to guide this study because of its focus on an individual as the agent of change in the healing process. The temporary trauma processing strategies, the process of posttraumatic growth, and cognitive trauma processing strategies are all intrinsic processes that purely depend on the individual according to this theory. However, counseling is an external process that focuses on facilitating the growth of an individual and reduction of the falseness that trauma presents. Examining the role of

counseling in this study therefore contributed knowledge on how to empower the individual towards the organismic valuing process after adversity.

1.9 Conceptual Framework

According to Miles and Huberman (1994), the conceptual framework is a system of concepts explains diagrammatically or in narrative the main themes to be explored, key factors, variables and their presumed relationships. Figure 1 shows the conceptual framework of trauma processing strategies and posttraumatic growth among the survivors of Garissa university terrorist attack. The independent variable was trauma processing strategies which include avoidance strategies, cognitive alteration, reactivity alteration, intrusion, denial, regret, downward comparison, acceptance, assimilation and accommodation. The Intervening variables were previous experience with trauma and duration since the time of the attack. These were the factors that could bring variation in the relationship between trauma processing strategies and posttraumatic growth of Garissa university terror attack survivors.

The dependent variable was posttraumatic growth and was measured in terms of participants' improved self-efficacy, appreciation of life, improved interpersonal relationship, improved spirituality, new possibilities and increased altruistic behaviour. These factors develop alongside the distressing effects of traumatic events and would be vital in helping the survivors mitigate the effects of the traumatic terror attack experience.

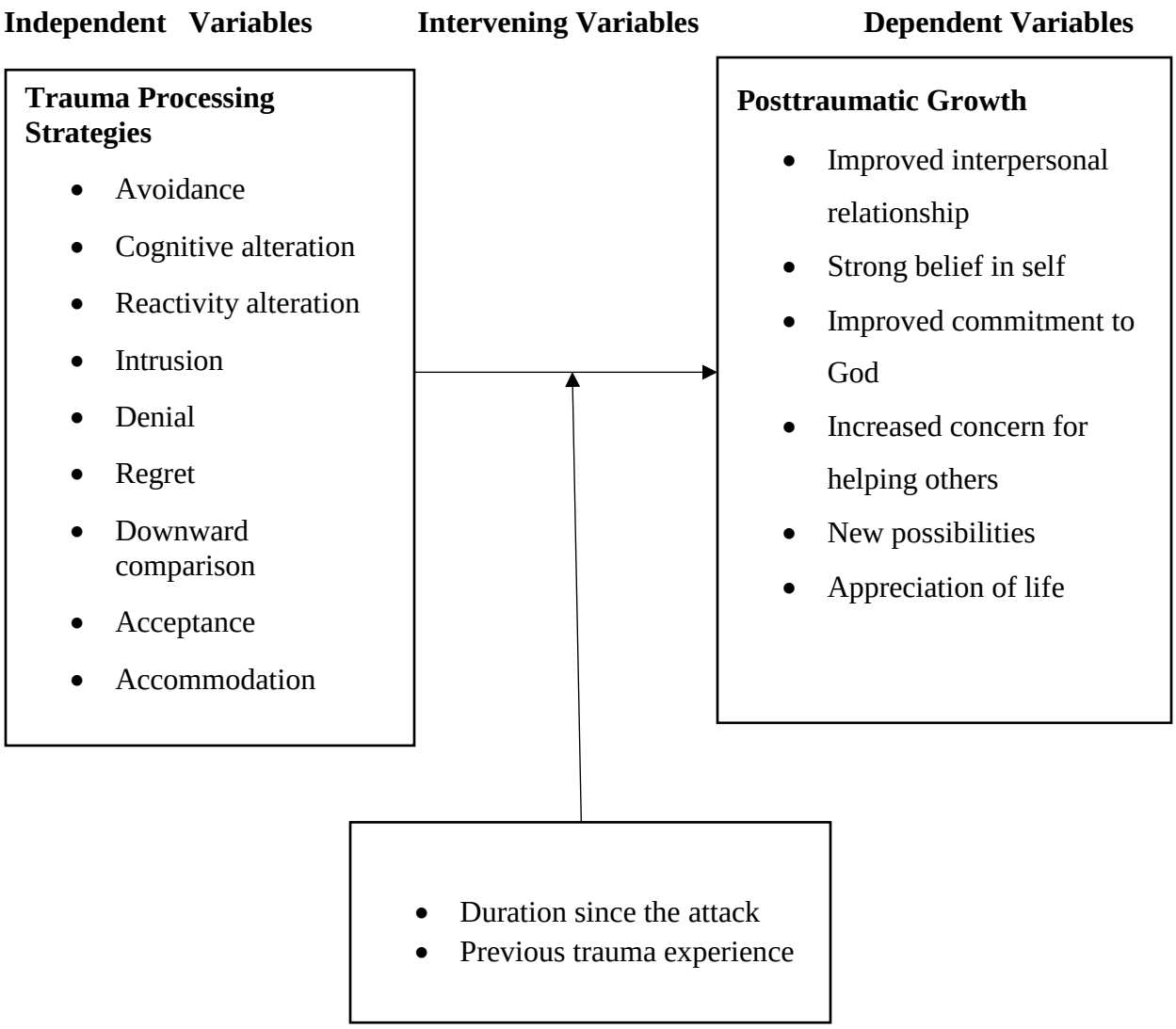

Figure 1. Relationship between trauma processing strategies and posttraumatic growth

1.10 Significance of the Study

As traumatic events of terrorism continue to be reported across the globe, governments appear to be overwhelmed by this growing challenge as many increase military funding as a way of mitigating the effects of terrorism (Pena, 2001). There is need to invest in psychological interventions as a way of addressing the challenges faced by terror survivors.

This study could improve the fight against terrorism as it addressed intimidation and hopelessness motivation of terrorists by exploring the positive outcomes of trauma. This may

be achieved by complementing the current terror suppression strategies with formulation of policies on both short term and long term psychological strategies for facilitating healing among survivors. The focus on posttraumatic growth, the positive side of trauma, will open a new perspective of helping the survivors of trauma to approach the future with hope and optimism. This may help to counter the narrative of intimidation and hopelessness among the survivors.

Exploring the positive outcomes after traumatic events among the Garissa University terrorist attack survivors created awareness for other terror survivors in the country to reexamine their growth experiences and begin to appreciate life in a new way. In the field of counseling psychology, this study may help counseling practitioners to incorporate posttraumatic growth knowledge as solution focused strategies in trauma counseling instead of just concentrating on the current problem focused critical incident debriefing. As universities continue designing and revising programmes in response to the emerging issues in the society, this study may be beneficial by availing knowledge on the positive outcomes of trauma. This may help them gain self-awareness, bring out their individual strengths, and develop new trauma coping strategies as they introspect on the possible posttraumatic growth that may have developed within them since the Garissa University terror attack.

1.11 Scope and Delimitation of the Study

This study deviated from the negative aspects of trauma to focus on trauma processing strategies and posttraumatic growth among terrorist attack survivors at Garissa University. The study targeted 650 survivors of the Garissa University terrorist attack, who were transferred to Moi University in Eldoret with the purpose of exploring the relationship between trauma

processing strategies and posttraumatic growth after the attack. From this population a total sample of 257 participants was selected to participate in the study

Having gone through this psychological pain, the survivors were still working on the healing process with much focus on processing the pain. The current study narrowed down to trauma processing strategies that the survivors used to recover from the trauma and the positive posttraumatic growth indicators that developed alongside the painful experiences. The trauma processing strategies that the study focused on were avoidance strategies, cognitive alteration, reactivity alteration, denial, regret, intrusion, acceptance, assimilation and accommodation. The posttraumatic growth indicators included improved interpersonal relationship, improved spirituality, increased self-efficacy, appreciation of life, and increased altruistic behaviour. The study also examined demographic factors and counseling interventions as intervening variables that accounted for differences in trauma processing strategies and posttraumatic growth.

The locale of the study was Moi University, main campus. This is where a large number of the survivors of the terror attack who could not continue with the normal duties in Garissa University were transferred.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This review presented the findings of other studies that are closely related to the current study. The studies were critically analyzed clearly identifying the gaps in knowledge that the current study attempted to fill. Other relevant theories that were discussed are Terror Management Theory (TMT), Meaning Management Theory (MMT) and Janus two component model and Biological basis of trauma.

2.2 Critical Review of Theories

PTG has been conceptualized differently by various theories. Some theories present PTG as an outcome, where it is viewed to be the end result of a learning process after struggle with a stressor. Other theories conceptualize PTG as a process, where it is viewed as a coping strategy that relies on individual perception. This study analyzed three theories: Terror Management Theory, Meaning Management Theory and Janus two component model to understand posttraumatic growth and how they related to the current study.

2.2.1 Terror Management Theory (TMT)

This theory conceptualizes growth after exposure to a life threatening event as an outcome rather than a process. The theory was developed by Solomon, Greenberg and Pyszczynki in 1986 (Solomon, Greenberg & Pyszczynki, 2015) to explain how people react when exposed to, or reminded about, their own death. It is based on the conflict that arises from the desire to live while realizing that death is inevitable. The theory has been advanced by studies on traumatic events and how exposure to these reminders of death shapes behaviour thereafter.

The theory argues that all human behavior is motivated by fear and denial of death. It looks at death as a psychological threat resulting from human urge for self-preservation in the face of realization of the reality of mortality. The theory is anchored on Mortality salience hypothesis, which is the awareness of the inevitability of one's own death. Mortality salience generates death anxiety which influences diverse human behavior ranging from religion, human sexuality, legal decision making and psychopathology (Kesebir & Pyszczynki, 2012). According to TMT, humans are concerned with existential threat, and protection against it is provided by three key defense mechanisms namely world view defense, increased self-esteem and improved interpersonal relationships.

World view defense: These are the cultural values that individuals employ to manage life threatening incidents by purporting to offer literal or symbolic immortality. Such values include belief in life after death, religion, 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 the threat. 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. Even though this theory looks at posttraumatic growth as an outcome, the world view defense appears to be a trauma processing strategy to buffer against the threat of trauma.

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.

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 current study focused on key aspects of TMT: personal strengths, new possibilities and interpersonal relations, and how they may be influenced by traumatic events.

2.2.2 Meaning Management Theory (MMT)

The theory was propounded by Wong, Gesser and Recker in 1987and is concerned with the manner in which exposure to life threatening events is managed in order to maintain good psychological health (Wong, 2008). The theory emphasizes the process rather that conceptualizing reaction to life threatening events as an outcome. Unlike TMT, which uses defense mechanisms to deal with this anxiety, MMT addresses threat to life through the generation of meaning attached to traumatic events. This theory holds that as much as the defense against trauma is necessary, the best defense is offense, which involves focus on how to live vibrant meaningful life. This is consistent with the Buddhist belief that to solve the problem of death, one must first of all solve the problem of living life (Palmer, 1993). When one lives truly human life, nothing can be feared about death because it is a natural part of life. Living fully and dying well are intertwined and can be achieved through enhancement of one's self, interpersonal relationships and understanding the spiritual and supernatural. The key concepts of MMT include:

Human beings are meaning seeking and meaning making creatures: Meaning Management Theory argues that humans react to perceived meanings rather than actual events (Wong, 2008). In the face of threatening events and awareness of death, humans engage in meaning construction in order to make sense of life. Meaning reconstruction and purpose protects humans against terrors of life and plays a major role in healing and mental health. The current study conducted an in depth inquiry to understand the subjective meaning attached to painful traumatic events among survivors.

The motivation tendencies of avoidance and approach may complement each other: Meaning management theory posits that the desire to succeed and the fear for failure can work together to boost the actualizing tendency of humans. The urge to resist death and live well can both work to promote peaceful life. The current study deviated from the norm of focusing on the negative outcomes of trauma and paid attention to the positive transformation that takes place after traumatic events. This theory notes that both negative and positive attitudes can play a role in fostering post trauma healing.

Humans have two primary motivations, to survive and to find meaning for survival: The exposure to life threatening events triggers humans to activate defense mechanisms and search for meaning and purpose of living at the same time. According to MMT, defense against death terror offers a protective function against pain while search for meaning offers growth function. The meaning management theory advocates for personal growth rather than defensive approaches to manage anxiety as a result of adversity, which facilitates healing. Wong (2008) proposed seven 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).

Both, TMT and MMT address the opposing sides of reaction to traumatic events comprehensively. The argument for buffer against traumatic events, using defense mechanisms as indicated by TMT, has been replicated by many studies. However it is also evident that negative events cannot be eliminated totally from human experience. It therefore follows that if the painful aspects of life cannot be eliminated, they should be managed rather than be fought. The MMT is anchored on this tenet, where negative life events need to be interpreted based on personal constructed meaning. Both MMT and TMT have been developed using experimental research where participants are exposed to events that remind them of their own death and then record their reactions. Some of the death reminders used in these studies have been hypothetical cases. The current study used mixed method design and participants who had undergone real life critical incidents. This kind of population was likely to bring out new information that may not be revealed using hypothetical cases.

2.2.3 Janus Two Component Model

This model conceptualizes PTG as a two dimensional process, having a constructive and illusionary side (Maercker & Zoellner, 2006). The illusionary side is a cognitive and deceptive side perceived as a defense mechanism. It is an avoidance strategy that begins shortly after exposure to the traumatic event and can have disastrous psychological effect in the long run. The illusionary strategy is not necessarily unhealthy as it may act as a temporary buffer against the effects of the traumatic event. It can be beneficial in the long run if it is experienced together with planned focus on the traumatic event.

The constructive side of PTG on the other hand is the realistic aspect that manifests with adjustment and well-being in the long run. Maerker and Zoellner assert that the illusionary side and the constructive side of PTG are negatively correlated. As the illusionary aspect reduces with time, the constructive positive aspect increases. The dimensions of posttraumatic growth reflect the constructive side which entails relatively permanent transformation in the overall psychological functioning of survivors.

2.2.4 Biological Basis of Trauma

Conceptualization and processing of trauma is a function of the brain. According to Keeton (2009, March 3), the human brain consists of three main parts namely the reptilian brain, mammalian brain and neo-mammalian brain. The reptilian brain also known as the brain stem is the lower part of the brain whose main function is survival. It regulates survival functions and instincts such as heart beat, breathing, eating and regulation of muscles among others. The mammalian brain also known as the limbic system is the middle part responsible for processing emotions and receiving sensory information. The neo-mammalian brain also known as the cortex is the fore part of the brain. It is responsible for controlling consciousness, learning, decision making, logic and imagination. It is usually slow in information processing as compared to the survival brain.

In the event of a traumatic event, the senses collect information about the threat and relay it to the limbic system. In the limbic system, the amygdala is activated by the danger and sends the signal to the survival brain which in turn activates the body's defense systems of fight, flight or freeze (Anderson, 2015; Koenigs & Graftman, 2009). In the currents study the flight-fight- freeze response was conceptualized in terms of initial trauma processing strategies such as avoidance of reminders of the trauma, hypervigilance and numbness among others.

The activation of the amygdala automatically switches off the logical part of the brain, the cortex (Rinne-Albers, Van der Wee, Lamers-Winkelman, Vermeiren, 2013). In the formative stages of trauma experience, it would be argued that the logical brain is less useful as survival is more relevant than reasoning at that moment. This is a short term adaptive stage that buffers the body against further damage from the traumatic event.

After trauma experience, the body returns to normalcy following the reactivation of the cortex, whose main function is to process the trauma information, give it new meaning and accommodate it in the existing pre-trauma schemas. Shin, Rauch and Pitman (2006) referred to this process as extinction of fear conditioning. It is therefore evident that the actual long term processing of trauma takes place in the cortex. The current study conceptualizes this stage as the cognitive trauma processing strategies. If this process takes longer than the normal time, the body stays in the survival mode which becomes pathological. The researcher notes that counseling may be a key component of activating the logical brain in order to process the trauma experience in non-pathological manner. This perspective was important to this study as a way of understanding the trauma processing strategies.

2.3 Conclusion

From the different perspectives of conceptualizing PTG, various theories report agreement on a number of issues. For instance, most of the theories report positive changes in the psychological functioning of individuals exposed to traumatic events. The meaning management theory focuses on the subjective positive interpretation of traumatic events while the terror management theory examines the coping strategies that buffer against trauma. The Janus two model theory addresses the long term trauma processing strategies and the illusionary (initial) trauma processing strategies. The biological theories appear to replicate the

views of Janus Model with strong emphasis on the neurological processes that might explain the illusionary and permanent stages of trauma processing. The current study aims at enhancing these theories by consolidating the tenets of the theories in a single study for corroboration.

However, it remains unclear whether PTG is a universal phenomenon or could vary with culture. With most of the studies in this area conducted on non-African populations, the current study used an African population, which could have different cultural characteristics as compared to earlier populations. This was necessary in examining any cultural biases that might have been exhibited by earlier studies. There seems to be no consensus among researchers on the dimensionality of posttraumatic growth. Some theories propose three domains while others report growth in five domains namely new possibilities, relating with others, personal strength, spiritual change and appreciation of life. Dimensionality of PTG is therefore an area that required further research. The other aspect that was not clear across various theories was the point at which trauma survivors began experiencing posttraumatic growth. There seemed to be lack of empirical studies investigating PTG immediately after trauma exposure. The current study's attempt to measure initial trauma severity is a beginning step in studying posttraumatic growth immediately after the traumatic event. With variation of research methodologies, researchers can bring out the unexplored areas of PTG. The theories also comprehensively explain the outcomes of facing life threatening experiences like the terror attack but seem not to explain the process of reaching the outcomes. The current study shifted focus from just examining PTG as an outcome but also to examine the trauma processing strategies that could be driving these outcomes. The study also provided findings that could be helpful in clarifying some of these contradicting issues.

2.4 Review of Empirical Studies

Studies on posttraumatic growth have been done globally with focus on different objectives. The current study concentrated on prevalence of initial trauma processing strategies; indicators of posttraumatic growth; demographic differences in PTG levels; relationship between initial severity of trauma and PTG; relationship between trauma processing strategies employed by trauma survivors and PTG; and the role of counseling in posttraumatic growth.

2.4.1 Prevalence of Initial Trauma Symptoms and Processing Strategies among Survivors of Terrorist Attacks

Experiencing of traumatic events shutters the survivor's assumptive world resulting to instability in psychological functioning. To attain homeostasis after traumatic events, the mind activates internal defense mechanisms to buffer against the negative outcomes from such events. The process of buffering against further damage from traumatic events is facilitated by short-term trauma processing strategies that are unconsciously activated immediately after the event. These strategies have been documented by the American Psychiatric Association (2013) as criteria B (intrusive thoughts), C (avoidance), D (cognitive alteration) and E (arousal alteration). Each of these initial trauma processing strategies can be deduced from the symptoms exhibited by survivors which have been clustered into the criteria. According to DSM V (American Psychiatric Association, 2013), manifestation of these symptoms is not conceptualized as severe unless it continues for a period of at least one month with specific threshold. The current study conceptualized initial trauma processing strategies in terms of trauma symptoms criteria while severity of trauma was viewed in terms of the duration and threshold of the symptoms. The DSM V (American Psychiatric Association, 2013)

comprehensively describes 8 criteria reflecting the manner in which trauma manifests namely criterion A, B, C, D, E, F, G and H. In light of biological basis of trauma, these initial trauma processing strategies constitute the survival brain's response of flight, fight or freeze.

Criterion A: Sources of Trauma

The criteria show the conditions under which a person may become traumatized. The DSM V (American Psychiatric Association, 2013) indicates that a person may be traumatized if exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, as follows: (The trauma threshold for this criterion is at least one of the conditions)

1. Direct exposure.
2. Witnessing in person.
3. Indirectly, by learning that a close relative or close friend was exposed to trauma. If the event involved actual or threatened death, it must have been violent or accidental.
4. Repeated or extreme indirect exposure to aversive details of the event(s), usually in the course of professional duties.

The current study focuses on survivors of terrorist attack who may have been affected in all the above ways. The study also conceptualizes trauma severity based on the number of symptoms exhibited by the survivor in each of the criteria from B to E.

Criterion B: Intrusion Symptoms

The traumatic event is persistently re-experienced in the following way(s): The APA (2013) recommends the threshold for trauma in this criterion to be at least one symptom. Recurrent, involuntary, and intrusive memories.

1. Traumatic nightmares. Note: Children may have frightening dreams without content related to the trauma(s).
2. Dissociative reactions (e.g., flashbacks) which may occur on a continuum from brief episodes to complete loss of consciousness.
3. Intense or prolonged distress after exposure to traumatic reminders.
4. Marked physiologic reactivity after exposure to trauma-related stimuli.

Criterion C: Avoidance Symptoms

Persistent effortful avoidance of distressing trauma-related stimuli after the event: The American Psychiatric Association (2013) recommends the threshold for trauma in this criterion to be at least one symptom.

1. Trauma-related thoughts or feelings.
2. Trauma-related external reminders (e.g., people, places, conversations, activities, objects, or situations).

Criterion D: Negative Alterations in Cognitions and Mood

Negative alterations in cognitions and mood that began or worsened after the traumatic event: The American Psychiatric Association (2013) recommends the threshold for trauma in this criterion to be at least one symptom. Inability to recall key features of the traumatic event (usually dissociative amnesia; not due to head injury, alcohol or drugs).

1. Persistent (and often distorted) negative beliefs and expectations about oneself or the world
2. Persistent distorted blame of self or others for causing the traumatic event or for resulting consequences.
3. Persistent negative trauma-related emotions (e.g., fear, horror, anger, guilt or shame).

4. Markedly diminished interest in (pre-traumatic) significant activities.
5. Feeling alienated from others (e.g., detachment or estrangement).
6. Constricted affect: persistent inability to experience positive emotions.

Criterion E: Alterations in Arousal and Reactivity

Trauma-related alterations in arousal and reactivity that began or worsened after the traumatic event: The American Psychiatric Association (2013) recommends the threshold for trauma in this criterion to be at least two symptoms.

1. Irritable or aggressive behavior.
2. Self-destructive or reckless behavior.
3. Hypervigilance.
4. Exaggerated startle response.
5. Problems in concentration.
6. Sleep disturbance.

Criterion F: Duration

According to the American Psychiatric Association (2013) persistence of symptoms (in Criteria B, C, D and E) must continue for more than one month in order for the person to be classified to have PTSD.

Criterion G: Functional Significance

The symptoms should also cause significant symptom-related distress or functional impairment (e.g., social, occupational) to the survivor.

Criterion H: Exclusion

The disturbance should not however be due to medication, substance use, or other illness.

The symptoms in criteria B (intrusion), C (avoidance), D (Negative cognitive alteration) and E (alteration in reactivity) are not just manifestations of trauma but could also imply the initial trauma processing strategies. This study conceptualized these as illusionary and short term coping strategies that the survivors of trauma employ to buffer against further damage from the traumatic event.

Studies have been carried out about the prevalence of posttraumatic symptoms with varying findings. A study conducted on the general population after the September, 11, 2001 terrorist attack in the United States reported that 68% experienced at least one symptom 'moderately'. About 90% of the population experienced at least one symptom 'a little bit'. (Mark, Bradley, Lisa, Rebecca, Grant, Marc, Annie, David, Janina & Sandra (2001). This study targeted those who had trauma exposure through television and used a sample of 768 adults selected by simple random sampling from telephone directories. Data were collected using the Posttraumatic Stress Disorder Checklist (PCL-5). Analysis was done using univariate analysis, and bivariate analysis (Pearson and Spearman correlation). The study was carried out 3 to 5 days after the attack. Using telephone interview is a good approach but may require more time and funds. It is also not able to capture other details from participants including emotions and nonverbal cues. The current study used a self-developed questionnaire to measure this construct instead of the standardized PCL-5. The aim was to capture the data using a language that was appropriate to the culture of the population used in the current study. The current study also targeted participants who had direct exposure to terror attack rather than those who experienced it through television. The researcher also collected data from the participants directly instead of using telephone interviews in order to enrich the data by capturing nonverbal cues of participants. This enriched the quality of information obtained from the participants.

In a similar study, Digrande, Neria, Brackbill, Pulliam and Galea (2001) analyzed the prevalence of PTSD among individuals with various trauma exposure levels. The study was conducted 6 months-3 years after the attack using a sample of 3271 adults. The inclusion criteria was those who were evacuated from the World Trade Centre, the site of the attack. Computer assisted telephone interviews were used to collect data with a standardized questionnaire, PCL. Recruitment of participants was done from the World Trade Centre health registry, using simple random sampling. Those who had direct exposure to the attacks of September 11 terrorist attack had 1.5% trauma symptom prevalence six months after the attack. The rescue workers had trauma prevalence at 11.1 % eleven months after the attack while the pentagon workers reported trauma prevalence of 14% seven months after the attack.

The time since the attack was a major variable that could account for the difference in findings with the preceding study. This study was done up to 3 years after the attack making it similar to the current study save for the large sample used. This could form basis for examining possible replication of similar findings in the Kenyan population. The variations in the prevalence of trauma symptoms could be explained by intervening factors such as time taken before the assessment for the symptoms, proximity of the survivors from the attack area, the level of exposure and interpretation of the magnitude of the attack.

In a general review of published articles on trauma prevalence, Maria, Jesus and Sarah (2016) reported varying posttraumatic symptoms among sections of the general population. The results indicated that 33% - 39% of the survivors, 17%-29% of relatives and friends, 5%-6% of rescue workers and 4% of the community developed posttraumatic stress disorder symptoms after a terrorist attack. However the study pointed out that the onset of the symptoms varies across different populations. The current study focused on collection of primary data

from trauma survivors unlike the analysis of literature used in the study. The use of primary data was more desirable as it gave the researcher the chance to seek clarification of issues from the participants including member checking as a means of ensuring that what the participants reported is what is captured in the findings.

Atwoli, Stein, Koenen and McLaughlin (2015) reported comparative findings of trauma prevalence in selected different cultures. The study was conducted in South Africa using a sample of 4315 adults of different nationalities who had experienced death of a loved one, war trauma, physical violence, sexual violence, and accidents. Analysis was done using univariate analysis and regression analysis. Leading was Northern Ireland with a prevalence of 17.6% followed by Spain 3.3%, South Africa at 2.5%, and Italy 2.5 % prevalence. The variance in prevalence in these countries may have been accounted for by cultural differences. The study is comprehensive, having selected survivors of trauma with experience from diverse events. However, the study did not sample participants from terror related trauma, which was the focus of the current study. The various historical events leading to trauma could also explain the difference in prevalence.

In Kenya, studies on trauma prevalence have been conducted reporting relatively higher rates of post-traumatic symptoms with focus on events such as grief, rape and violence among others. Karsberg and Elklit (2012) reported trauma symptoms prevalence rate of 34.0% in a sample of 477 Kenyan rural youth. The study used population that is similar to that of the current study which gives the researcher the chance to test the possibility of replicating similar findings on the population under study.

A study on 1565 orphaned and separated children in Usain Gishu County reported post traumatic symptoms prevalence of 28. % in street children, 15% among households and 11.1%

among children in children homes (Atwoli, Ayuku, Hogan, Koech, Vreeman, Ayaya & Braitstein, 2014). The study capitalized on quantitative methods whereas the current study will use both quantitative and qualitative approaches. The study locale wass the same area where the current study was conducted even though the population is different. The current study will be focusing on young adults and not children.

Another study conducted in Maseno involving 1190 adults with exposure to severe trauma reported, 10.6% trauma symptom prevalence (Jenkins, Otieno, Omollo, Ongeri, Sifuna, Kingora, Kiima & Ogutu, 2015). Even though culture cannot be homogenous, the deviation of trauma prevalence rates reported in Kenya seemed to be lower compared to global studies but with higher mean. The studies also sampled participants that have had trauma experience from varying sources.

A comparative study examining the prevalence of psychopathology in workers responding to the 1998 US embassy bombing in Nairobi and the 1995 Oklahoma bombing revealed a 22% prevalence of PTSD and 27% of depressive symptoms (Zhang, Pffeferbaum, Narayanan, Lee, Thielman & North, 2016). The study reports that Nairobi rescue workers were 4 times more symptomatic than the Oklahoma workers. The reason for high prevalence of trauma among participants from Nairobi has not been explored due to the methodology adopted in the study. The use of mixed methods approach in the current study will enable the researcher clarify some of the patterns that arise from quantitative measures.

The difference in levels of trauma symptoms prevalence within the same population or across different regions was not accounted for. More studies on different populations and different regions will help inform the academic community on whether this pattern can be replicated or it is as a result of chance. The current study focuses on trauma symptom

prevalence was timely in contributing to this discussion. Most of the studies reviewed focused on prevalence of trauma experienced from varying sources unlike the current study that will focus on trauma as a result of a terrorist attack event.

The studies on posttraumatic symptom prevalence seemed to focus on the overall PTSD score. There seemed to be little or no attempt by the studies to scrutinize the prevalence of the individual PTSD symptoms. The current study focused on the prevalence of each individual trauma symptom, and the collective prevalence of the symptoms as clustered in the DSM V PTSD criterion. None of the studies done on trauma symptoms had attempted to examine the prevalence in terms of the DSM criteria. This study explored this gap by conceptualizing the criteria as temporary trauma processing strategies and assessing their prevalence. This information may help trauma practitioners in designing interventions that target the most prevalent initial trauma coping strategies and symptoms. The other studies have also used the PCL-5 to a large extent as the research instrument. The current study adopted the researcher's own developed questionnaire in order to capture deeper information that could not be generated by the standardized tool.

2.4.2 Indicators of Posttraumatic Growth among Trauma Survivors

Highly stressing and life threatening events seriously challenge an individual's view of the world. Survivors of traumatic events usually perceive such events as distressing, but struggle with pain from such events may also lead to experience of positive personal growth (Cann, Calhoun, Tedeschi, Tanya & Lindstrom, 2011). Indicators of posttraumatic growth have been researched and summarized in five domains. Tedeschi and Calhoun (1996) originally coined these indicators on the five domains:

- Relating to others - people who have undergone posttraumatic growth report positive change in interpersonal relationships such as enhanced emotional closeness with significant others.
- New possibilities - people who have experienced posttraumatic growth have been shown to find new paths in their life that never existed prior to the traumatic event.
- Personal strength - this involves having greater sense of self-reliance and self-efficacy.
- Spiritual change - this is where trauma survivors report having deeper meaning of life and increased religious faith.
- Appreciation of life - this develops by attaching higher value on life as compared to the period prior to experiencing the traumatic event.

This five factor model of posttraumatic growth indicators was assessed using the Posttraumatic Growth Inventory, PTGI (Tedeschi & Calhoun, 1996). The five domains were replicated by confirmatory factor analysis from many other studies (Lee, Luxton, Reger & Gahm, 2010) that involved translated versions of the PTGI into several languages. Taku (2013) argues that the different translation of the PTGI is an attempt to capture cultural differences in the reporting of the indicators of posttraumatic growth. It has been observed that the indicators of posttraumatic growth across different cultures continue to fit in the five factor model but significant differences in levels of each of the five domains has also been reflected across these cultures (Taku, 2013).

A study by Hilaire, Michels and Canevello (2016) found that individuals who have experienced traumatic events report increased responsiveness to their spouses. The study was carried out on 109 couples whose homes had been severely damaged by floods. It was a two

phase study where the first 61 couples filled the PTGI followed by 48 remaining couples after 6 months. This study focused on one domain of posttraumatic growth that is relating with others. The current study will be more open in order to explore the other 4 domains of posttraumatic growth and look at the possibility of new domains that may not have been revealed by earlier studies.

Hungerbuehler, Vollrath, and Landolt (2011) reported improved relationship, self-disclosure, and support seeking behavior among survivors of traumatic events. The study was carried out on 126 parents of 67 children diagnosed with type 1 diabetes or cancer. The study used quantitative approach where PTGI was the main data collection instrument. Other areas of growth following traumatic events include new spiritual insights, improved self-efficacy, increased optimism, altruistic behavior, improved relationships and improved self-concept (Calhoun, Tedeschi, Cann, & Hanks, 2010). The studies, though having brought out key indicators of PTG, concentrated on the use of PTGI for data collection. The current study used both the PTGI and qualitative techniques of investigating the indicators of posttraumatic growth in order to create the possibility of generating new subjective indicators of growth that may not be revealed by the PTGI.

The difference on the PTGI scores across different cultures could be explained by the cultural diversity of the western and non-western populations from which the studies have been carried out. For instance people from western individualistic societies could report higher scores on personal strength as compared to people from African and Asian collective societies who could report higher scores on relating with others. This was confirmed by Kiselica and Englar - Carlson (2010), who argued that people raised in culture that places greater importance on caring for others could more likely view psychological growth in terms of relating to others.

It is therefore likely that some of the ways in which people experience posttraumatic growth along the five domains is culture sensitive.

Taku (2013) tested cross cultural differences in the domains of PTG using American and Japanese samples and established significant cultural differences in personal strength, spiritual change and appreciation of life. The study used a sample of 119 American men and 113 Japanese men selected from university undergraduate students. The sample was not chosen based on any particular traumatic event but general life threatening events. The study used the 21 items version of the PTGI for data collection and quantitative analysis with focus on Multivariate Analysis of Variance (MANOVA). The aim of the study was to assess cultural differences in the subjective rating of the constituents of PTG. The results showed that the PTGI items that indicated growth for the American men were not the same with those for the Japanese sample. The study however focused on men leaving out women. The current study focused on both gender in order to generate comparisons of posttraumatic growth between men and women.

The American sample in Taku's (2013) study rated personal strength and appreciation of life as more indicative of growth as compared to the other indicators. For the Japanese sample, the four domains except spiritual change were rated as more indicative of growth. The results tended to reflect the individualistic and collective aspects of the two cultures under study. The American sample, for instance, highly rated the domains of posttraumatic growth that relate to individual growth as compared to relationship with others. The current study deviated from the dominant quantitative designs that have been used in other studies to focus on mixed method approach in order to capture the subjective aspect of posttraumatic growth.

A similar study was carried out in Uganda among 12 youths associated with the Lord's Resistance Army (Kryger & Lindgren, 2011). A phenomenological analysis of their narratives revealed four themes: social support, participation, self-perception and faith in God. These four themes were interpreted to resemble four of the five domains of PTG: relating to others, new possibilities, personal strength and spiritual change respectively. The domain of appreciation of life did not feature in the narratives from this study. The conceptualization of PTG indicators in different terms other than what has been replicated in other studies is proof for subjective interpretation of PTG across different cultures. The absence of one of the main domains in this sample could further indicate that the experience of PTG is not identical but could vary from population to another. The sample used was relatively small to be generalized. The current study used a slightly bigger sample and both quantitative and qualitative designs in order to capture the subjective view of participants but also test the objectivity of the findings with the view of generalizing them to other similar populations.

Given that not many studies have explored the subjective reporting of posttraumatic indicators, the unfolding cultural differences in the way individuals report perceived posttraumatic growth warranted further research. As noted, most studies assessing this aspect used the PTGI, which is a quantitative measure. The current study aimed at enriching the earlier findings by investigating the indicators of PTG among trauma survivors using both quantitative and qualitative measures in order to obtain the subjective interpretation of posttraumatic growth in the population under study. There seemed to be no studies on indicators of post-traumatic growth carried out on the Kenyan population and this informed the current setting of the study.

Most studies show posttraumatic growth around five key areas: relationships, new personal abilities, spirituality, self- concept and optimism (Hilaire, Michels & Canevello, 2016; Cann et al 2011). It would be limiting to believe that all trauma survivors have to follow this fixed mode of adjustment. Tedeschi, Addington, Cann, and Calhoun (2014) cautioned against the assumption that posttraumatic growth is universal. Even though research reports commonalities in reactions to traumatic events, it must be noted that no two individuals experience and interpret traumatic events in identical ways. Further research on this area was required in order to get the subjective and culturally sensitive meaning of posttraumatic growth in other populations.

2.4.3 Demographic Differences in Posttraumatic Growth of Trauma Survivors

Despite the area of posttraumatic growth being relatively new, studies have been conducted on demographic factors that may affect this phenomenon. Koutana, Jelinek, Blatny and Kepak (2017) have 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. Quantitative data analysis (regression and correlation) were used. 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. The current study complemented this finding by using a slightly different population from what was used. The focus on young adults and adults

was necessary in providing findings that could contribute on the discussion on the development of posttraumatic growth from childhood to adulthood.

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. The current study will use mixed methods approach with a heterogeneous sample as opposed to the current study that focused on female survivors only.

Contrary to these findings, other studies have shown age as negatively related to PTG. Tremolada, Bonichini, Basso, and Pillon (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, McCullusmith, Fann, Richards, Stoelb, Heinneman and Bombardier (2014) who conducted a cross sectional study on a sample of 824 survivors of spinal cord injury. These results could be accounted for by the plasticity of behaviour among the younger people, who are more flexible in learning new skills as compared to the older generation. It is also possible that younger people have less rigid schemas of interpreting their world, making it possible to alter certain life philosophies easily without much struggle. Older people on the other hand could have enduring schemas that when changed could result to much psychological distress. This may continue to slow

down learning new skills and competencies to deal with the after math of traumatic events. Other studies have also ruled out any association between age and PTG. For instance, a study by Tokgoz, Yalug, Ozdemir and Aker (2008) on 100 patients diagnosed with cancer found no significant association between age and PTG. These inconsistencies in research findings informed the focus of the current study on a similar construct in order to try and bring clarity in understanding the relationship between age, gender and posttraumatic growth.

Gender was another demographic factor that had been reported in PTG studies. Tanya, Cann, Calhoun, Tedeschi and Demakis (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 of 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. The analysis of studies without having chance of interrogating the participants may limit the research findings. The current study focused on researcher-participant interaction in order to enrich the data obtained from the field.

However, Jin, Xu, Liu and Liu (2014) and, Andrien and Naggy (2011) reported gender differences in PTG with men scoring higher than women. The studies were conducted among the Chinese earth quake survivors and Somali refugees respectively. The first 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 current study was conducted about three years after the traumatic event and this was likely to generate varying findings due to the time

aspect. The second study used 53 Somali refugees of which 44 were men and 9 women. The sample used in this study appears to be skewed in favor of men an aspect the current study attempted to address by sampling proportionate number of men and women. It is only after this that nonbiased gender and age differences could be analyzed.

The higher PTG among men in these two studies 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 and Joseph (2010) had also reported association between PTG and other demographic factors such as education and socioeconomic status. The 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 stress.

The studies done on relationship between PTG and demographic factors seemed to be reporting inconsistent findings. Tedeschi et al (2014) had also reported that PTG was not universal, implying that the demographic patterns that had been reported in PTG needed to be investigated using diverse populations before generalizations could be made. The current study focused on three demographic factors including gender, marital status and age.

The reviewed studies explored PTG with respect to various traumatic events ranging from war, sexual assault, terminal illnesses and accidents among others. The focus on the emerging traumatizing event of terrorism is still unexplored to a large extent. It was also evident that very few of these studies had been conducted in Kenya. The current study focused on those traumatized by terrorism and specifically in Kenya in order to address this gap. This was a deviation from the other studies which had dominantly focused on traumatizing events other than terrorism.

The demographic differences explored were generated using the overall PTG score. There seems to be lack of literature on the demographic differences of each of the five domains of PTG. The current study will be exploring the demographic differences on each of the five domains of PTG in order to generate more specific explanations of demographic patterns of PTG and fill this gap.

2.4.4 Relationship between Initial Severity of Trauma and Posttraumatic Growth of Trauma Survivors

Different people conceptualize traumatic events differently. An event that one person perceives as normal could be taken as very tragic by another person. This could imply that the degree of posttraumatic growth after traumatic events may vary from person to person depending on the degree of severity attached to the event. The process of rating one's trauma experience in terms of severity involves various trauma processing strategies. This study will measure the different trauma processing strategies used by the survivors of Garissa University terrorist attack in interpreting the severity of their trauma experience, and relate it to their levels of posttraumatic growth. Even though trauma severity remains a subjective experience, it can be conceptualized objectively. According to the DSM V (American Psychiatric Association, 2013) trauma severity can be measured using various symptoms which are divided in 8 criteria namely criterion A, B, C, D, E, F, G, and H. The intensity and frequency with which these symptoms are manifested are used to rate the level of trauma among survivors of traumatic events.

There is still limited literature on the relationship between trauma severity and posttraumatic growth, but researchers are beginning to explore this area. Wei, Han, Zhang, Hannak and Liu (2017) conducted a study to find out the characteristics of emotional response

of Posttraumatic Stress Disorder and Posttraumatic Growth among Chinese adults exposed to explosion incidents. The study used a sample of 2395 who completed measures of Posttraumatic Stress Disorder Checklist (PCL-C); Posttraumatic Growth Inventory (PTGI) and Trauma Exposure- Related Survey. The correlation design was used with Pearson correlation moment calculated for each scale. The study concluded that the relationship between PTSD and PTG may depend on the type of trauma experienced and the exposure level. It may be noted that that this study revealed the correlation measures but did not account for these measures. The current research attempts to address this gap by using mixed method approach which aims at getting participants' subjective explanation of these patterns in addition to the quantitative approaches that have been dominant in other studies on PTG. This study will also collect data on severity of trauma using the researcher's constructed questionnaire as opposed to the standardized tools used in the previous studies.

Karanci, Isikli, Aker, Gul, Erkan, Okzol and Guzel (2012) found that severity of posttraumatic symptoms contribute to PTG in trauma victims. These findings indicate that trauma severity accounted for a significant portion of the variance in scores of the five domains of PTG. The study used longitudinal design on a sample of 969 Turkish adults from home settings, who had survived accidents, natural disasters and loss of a loved one. The findings are supported by Zara and Yilmaz (2016), who reported a curvilinear relationship between intensity of trauma and PTG. The results show that both low and high levels of trauma impede PTG. The population used in this study was drawn based on diverse traumatic events. This variation in the nature of traumatic events could be a factor that may have impact on the findings. The current study will evaluate posttraumatic growth in participants who have experienced the same traumatic event which is terrorist attack.

Joseph, Murphy and Regel (2012) reported a curvilinear relationship between posttraumatic symptoms and posttraumatic growth across diverse populations. They arrived at this conclusion after analyzing of several journal articles on posttraumatic growth. This pattern may be accounted for by the cognitive processing of trauma experiences. Very low severity of trauma may not shatter an individual's assumptive world to warrant posttraumatic growth later. This could explain the low levels of posttraumatic growth among individuals who have been exposed to low levels of trauma. On the other hand very high trauma levels may be cognitively devastating leading to activation of long term use of defense mechanisms and dissociation, making it inconsequential in promoting posttraumatic growth. Other factors that relate to trauma severity reported by Currier, Holland and Niemeyer (2012) include sleep disturbance and developing addiction behavior. The current study will deviate from analyzing of existing literature to focus on collecting primary data from survivors of a traumatic event. This is to enable the researcher interpret the collected data complementing it with personal critique, which may bring out deeper meaning than could have been revealed by the studies based on meta-analysis.

The findings of Schubert, Schmidt and Rosner (2015) assert that trauma survivors with PTSD symptoms exhibit more PTG than those without. The study analyzed 140 studies of which 19 fulfilled the inclusion criteria that required a population that was fully diagnosed with PTSD. The study also found that PTG can be intensified during the therapeutic process even though it is not possible to tell whether PTG is an outcome of therapy. There was no evidence for quadratic relationship between PTG and PTSD even though some of the studies held this hypothesis. The presence of PTSD symptoms is an indication of severe trauma as compared to lack of these symptoms. However it is also possible to find survivors who exhibit

PTSD symptoms but do not necessarily meet the criteria for PTSD diagnosis. Concentrating on PTSD diagnosis would therefore leave out many people who may have been severely affected by the traumatic event. The current study will ignore PTSD diagnosis as the inclusion criteria and instead focus on the general PTSD symptoms exhibited by the participants as the measure of severity. The symptoms will also be conceptualized to represent the initial trauma processing strategies that survivors formulate as protective strategies against their trauma.

Lambert and Lawson (2013) sought to find out the PTG differences between those who suffered direct exposure to Hurricane Katrina and the volunteer workers who later offered to help the victims. The study adopted the quantitative approach where professional counselors who provided services to those affected by Hurricanes Katrina and Rita filled the PTGI and Professional Quality of Life Scale. The study found that the participants who had direct exposure to this disaster portrayed higher levels of PTG than those who served as volunteers. The sample that was directly exposed was considered to have experienced higher trauma severity as compared to the one that experienced the trauma by serving the affected victims. The fact that some participants in this study were professional counselors while others were not, could have informed the differences in the findings of this study. To refine the comparison of trauma severity and PTG, the current study will narrow to a relatively homogenous sample of participants drawn from those who experienced direct exposure to the traumatic event. The approach used in measuring severity in this study was guided by the degree of exposure to the traumatic event; however, it may not be automatic that those who get direct exposure to the traumatic event will have high severity. The current study conceptualizes severity as an individual's subjective interpretation of the traumatic event. This gap will be filled by using

the researcher's developed questionnaire to have the survivors report on the severity of their trauma rather than allowing the researcher to generalize severity based on exposure degree.

The pattern emerging from these studies seems to consistently show a curvilinear relationship between PTG and trauma severity. However, Sleijpen, Haagen, Moore and Kleber (2016) have shown contrary findings. Their study found no association between trauma severity and PTG, and concluded that the two are independent constructs. The sample used in this study was adolescents, and age as a factor could have informed the findings. It has been cited that trauma processing requires a certain level of maturity and therefore younger individuals may fail to conceptualize severe events.

The studies reviewed seem to have used populations outside Africa. The current study examines the possibility of replicating similar findings on the Kenyan population, specifically the survivors of Garissa university terrorist attack. The contradicting findings too cannot be ignored but call for further research to explore the possibility of the generating similar contradictions or agreements with different populations. The researcher also seeks make his personal voice heard in the findings by deviating from the practice of using secondary data as seen by studies on meta-analysis and instead collect primary data from the field and critique the findings. The conceptualization of trauma severity will also be done with respect to the subjective interpretation of the survivors and not generalize the severity levels to all survivors with similar trauma exposure degree as seen in the earlier studies.

2.4.5 Relationship between Cognitive Trauma Processing Strategies and Posttraumatic Growth of Trauma Survivors

To withstand the threats posed by traumatic events, individuals usually work towards normalcy by processing and interpreting the traumatic experience in order to alleviate negative

feelings. According to Maercker and Zoellner (2004), trauma processing is a two face approach, an illusionary domain and a constructive domain. The illusionary face involves distorting the trauma experience in order to counter the negative effects. This is majorly the activation of defense mechanisms, which is not necessarily maladaptive, and reduces over time. On the other hand, the constructive side of trauma processing involves actual change, and is associated with positive accommodation of the trauma experience into the individuals world view. Maercker and Zoellner (2006) argue that this face is the most permanent and increases with time. It involves the individual's cognitive processes. Both processes co-exist from the onset of the traumatic event but the illusionary processing reduces with time. The biological basis of trauma would view this as the point where the survival mode of the body following trauma experience is deactivated paving way for the cortex to logically process the trauma memories (Keeton, 2009 March 3).

Several studies have identified varying illusionary trauma processing strategies used by trauma survivors to mitigate the painful effects of traumatic events. He, Xu and Wu, (2013), identified problem solving, self-blame, asking for help, having fantasies, problem avoidance and rationalization as the coping strategies employed by trauma survivors. Their study involved a sample of 2080 adult survivors of Wenchuan earthquake selected from 19 different countries. Social Support Scale (SSS), Coping Scale (CS) and PTGI were used in data collection. The sample used in this study was rich in terms of cultural differences due to selection from different countries. However the quantitative nature of the study could have left out key subjective information from the participants. The current study explores this gap by integrating both quantitative and qualitative approaches in a single study in order to obtain in-depth understanding of the phenomenon.

Prati and Pietrantoni (2009) reported a relationship between positive coping strategies and PTG. The study was a meta-analysis of 103 studies on posttraumatic growth. The study also concluded that the design used moderated the effect of reappraisal coping. The use of these strategies by trauma survivors could be short term solutions to the problem of trauma distress. It could be possible that these first steps of managing trauma transform into long term phenomenon of posttraumatic growth. However it is also not clear why some of these short term strategies have shown positive relationship with PTG while some do not. The current study attempts to replicate the same results using a mixed method approach especially after previous findings indicate that research methodology could have effected how trauma processing strategies relate with posttraumatic growth.

Aslam and Kamal (2015) established coping strategies such as self-distraction, denial, substance use, humor, self-blame, religious coping, and acceptance coping. They used Brief Cope Inventory (BCI), Depression, Anxiety, Stress Scale (DASS) and PTGI to collect data from 1862 individuals exposed to floods in Pakistan. Hierarchical multiple regression was used in analysis. After controlling for gender, age, education and marital status, coping strategies such as positive reframing, religious coping and acceptance coping accounted for 31% variance in posttraumatic growth. The study also classified these strategies into positive and negative, and concluded that positive strategies such as humor, religious coping and acceptance coping accounted for variance in posttraumatic growth. The current study will focus on a different population, terrorist attack survivors, to investigate trauma processing strategies. The methodological gap of this study will be addressed by the current study attempt in using mixed methods approach.

Studies on the long term cognitive processing strategies have also been conducted by various scholars. Arandia, Mordeno and Nalipay (2016) assert that it is not trauma experience that causes the long term outcome of posttraumatic growth but how individuals cognitively process the events. In their correlational study among 217 Filipino women who had undergone intimate partner violence they examined the relationship between PTG and CPOTS domains. The results showed that the survivors who were more engaged in cognitive restructuring, downward comparison and acceptance of trauma experience achieved more PTG on all the five domains. Contrary to available literature, the same study reported that denial and regret, which are negative cognitive processing strategies, were significantly and positively related to PTG. This implies that the survivors who try to ignore the trauma experience or engage in self-blame are likely to have higher PTG. This contradiction of the findings of this study with other related studies warrants further investigation of the phenomenon under study making the current study necessary.

On the contrary, other studies have shown that negative cognitive strategies are illusionary and keep the survivor from trauma recovery and growth (Maerker & Zoellner, 2006). It is possible that the negative strategies are short term and provide initial buffer against trauma effects later, paving way for the more permanent positive cognitive strategies. The growth process after adversity could be said to depend on the way survivors accommodate the trauma experience into their world view or how they alter their world view to accommodate the new trauma experience. Triplett, Tedeschi, Cann and Reeve (2011) have also demonstrated the importance of cognitive processing in recognizing PTG by trauma survivors. The study asserts that people identify the PTG domains through the process of interpreting and trying to understand the traumatic experience and make meaning out of it. The study used two samples

of 165 and 215 undergraduate psychology students from a University in South Eastern United States. Data were collected using Core Beliefs Inventory (CBI), Event Related Rumination Inventory (ERRI) and PTGI, in an online survey. Blix, Hansen, Birkeland, Nissen and Heir (2013) also view PTG not as a spontaneous process but a by-product of cognitive processes and other coping strategies the survivors choose to use in the after math of adversity. The current study's approach of data collection through face to face interviews instead of online survey will add more quality to the findings since observation techniques during data collection will help generate interpretation of the qualitative data collected.

Both illusionary and constructive trauma processing strategies have been reported to influence PTG by various studies (Maerker & Zoellner, 2006). The current study focuses on a population that underwent traumatic event four years ago. It therefore follows that the illusionary strategies of trauma processing have declined while the constructive strategies have increased. It is therefore possible that the survivors are currently engaging the more permanent and cognitive trauma processing strategies. The current study will therefore deviate from other studies that have majorly focused on short term illusionary coping strategies and focus on the relationship between PTG and cognitive processing of trauma strategies. These strategies will be assessed using Cognitive Processing of Trauma Scale (Williams, Davis, & Millsap, 2002). The domains of cognitive processing of trauma that will be assessed include:

- Positive cognitive restructuring which is concerned with how trauma survivors restructure their beliefs and begin looking at the positive aspects of trauma.
- Resolution or acceptance which is concerned with coming into terms and accepting the traumatic experience.

- Downward comparison which involves looking at the traumatic experience as less devastating as compared to that of others.
- Regret where the survivor gets preoccupied with the things they should have done better.
- Denial which is the inability to accept the traumatic experience.

The use of cognitive processing as trauma recovery strategy has been studied and results show conflicting findings. Caspari, Bogdan-Raque, McRae, Simoneau and Ash-Lee (2017) using a sample of 169 breast and prostate cancer survivors found positive cognitive processing accounted for 42.7% of variance in PTG. This indicates that positive cognitive processing is a key factor that could influence the emergence of PTG. This study was quantitative and used hierarchical regression models to find relationship between the constructs under study. The current study will focus on both quantitative and qualitative approaches in order to obtain the survivors subjective meaning of the strategies used to process their trauma and at the same time compute correlation between variables.

The aspect of negative cognitive trauma coping strategies being an inhibitor of posttraumatic growth has been contested by other scholars. For instance, Cann, Calhoun, Tedeschi, Triplett, Vishnersky and Lindstrom (2011) argue that self-blame is a deliberate effort to think about the traumatizing event and a pathway to understanding the self and the world after adversity. Chan, Ho, Tedeschi and Leung (2011) also observed that self-defeating thoughts were important in building one's growth after traumatic events. It could be possible that a person who engages in self-blame and regret may end up evaluating self to find out what he failed to do and thereby developing better strategies for subsequent traumatic experiences. This therefore follows that both positive and negative cognitive trauma processing strategies

could be beneficial to survivors of trauma. However the analyzed studies have not reached consensus on this debate. The number of studies done on this area remains minimal. To generate more data to inform the relationship between these variables, there is need for more research, which is the gap that the current study intends to fill. It was also noted that most studies have hardly analyzed the demographic differences in the trauma processing strategies. The current study conceptualized demographic factors as key variables that may help deepen the understanding of trauma processing hence the need to address this gap.

The understanding of these strategies and how they relate to PTG may help trauma practitioners design interventions that could enhance the cognitive faculties of survivors hence facilitate the corresponding PTG domains in the affected individuals. However from the analyzed literature it remains unclear to trauma practitioners whether to empower the survivors' negative or positive trauma cognitive strategies. More research is required in order to address this inconsistency and give clarity on trauma intervention formulation. The current research aims at availing findings to contribute to this course.

2.4.6 The Role of Counseling in Posttraumatic Growth

In the last six years the world has witnessed tremendous increase of traumatized populations as a result of terrorism. This has been aggravated by the Arab uprising that began in 2011 leading to collapse of many nations in the Middle East (United Nations High Commission for Refugees, 2014). The uprising has led to increased terror activities worldwide resulting to escalation of traumatic events such as rape, torture, enslavement, beatings and mass killings almost every year (Ozden, 2013; Dabashi, 2012). The current vicious cycle of violence has led to economic decline which deprives the already traumatized population of its basic survival needs (Naufal, 2012; Ozden, 2013).

Apart from the physical harm, economic decline and spread of communicable diseases, caused by terrorism, studies show increasing multiple psychological conditions such as anxiety, depression, memory and concentration impairment, sexual dysfunction, prolonged grief disorder and PTSD among others (Nickerson, Liddell, Mccullum, Steel, Silove & Bryant, 2014). With limited resources, many nations across the world are in dilemma of whether to support provision of basic needs to the traumatized populations, address the increasing spread of communicable diseases, or provide professional mental health services to the victims. To address this dilemma, many nations continue to ignore mental health complications of the traumatized populations and focus on the physical aspects despite the available evidence for increasing complexity of unaddressed psychological problems (Seedat, 2013; Norris, Aroian & Nickerson, 2011; Lambert & Alhassoon, 2015).

Despite the neglect of mental health concerns of traumatized populations, there is evidence for entrenchment of counseling interventions in the rehabilitation programs for trauma survivors due to advocacy from counseling professionals (d'Ardenne, 2012; Alayarian, 2011; Forbes, Lewis, Varker, Phelps, O'Donell, Wade, Ruzzek, Watson, Bryant & Creamer, 2011). However this development appears to be facing resistance from the consumers of counseling services (specifically from the African context) who prefer alternative helpers in times of crisis (Munywoki, Karuri, Gikandi, Kaithuru, Nyagah & Asatsa, 2017). It is a common practice for many survivors of life crises to depend on self-help methods or religious rituals to address their psychological distress. Even though self-help coping and religious rituals are not necessarily unhealthy, the survivors usually require the services of professional counselors in order to process their pains and fears.

It has also been indicated that most counseling interventions on trauma focus on alleviating the negative outcomes of trauma. Since both negative and positive outcomes of trauma can coexist, it is not clear whether posttraumatic growth could be enhanced by counseling interventions or it develops on its own. Availability of such knowledge will play a vital role in tailoring the counseling interventions to address both the negative and positive outcomes of trauma.

Xu, Hu, Song, Lu, Chen, Wu and Xia (2016) conducted a study examining the effect of positive psychological intervention on posttraumatic growth among primary health care workers in China. A sample of 579 health care workers from Shenzhen filled the PTGI and compared the scores with response after exposure to Chinese traditional psychological interventions. Correlation research design was used together with experimental approach. Pearson correlation analysis was used to analyze the data. The findings revealed that scores on PTGI were significantly higher after the psychological intervention than before. The domain of 'new possibilities' benefited most from the interventions. The current study seeks to explore the counseling implication using the qualitative approach in order to obtain rich and subjective views of the survivors since correlation coefficients alone may not bring out sufficient information about the counseling experience, which is unique to every person.

Jeon, Han, Choi, Ko and Kim (2016) also conducted a study on a sample of 10 survivors of large scale maritime disaster that occurred in South Korea. The aim of the study was to investigate the therapeutic value of Eye Movement Desensitization and Reprocessing (EMDR) on posttraumatic growth. The results indicate that after 3 months from treatment completion, significant increase in posttraumatic growth was observed. It was concluded that EMDR therapy enhanced posttraumatic growth in disaster survivors. Even though the study is one of

the few that attempt to investigate the role of counseling in posttraumatic growth, the sample used was relatively lower to make a generalization. The results of this study may only be limited to the population under study which warrants similar studies on other populations worldwide. The current study explores the perception about counseling services administered to trauma survivors using a relatively larger sample. It is also not just limited to one counseling approach as seen in this study but will explore all forms of counseling interventions that might have been used on the population under study.

The most common approach used in helping trauma survivors in Kenya has been Critical Incident Debriefing. This is usually done within 72 hours of the traumatic event. However some scholars reject this model citing greater distress among the survivors about 3 years after the event (Mayou, Ehlers & Hobbs, 2002). Within the first two weeks of the attack, Garissa university terror survivors received psychological first aid, Critical Incident Debriefing and psychosocial support from government bodies, professional associations and humanitarian organizations (Gicobi, 2015) just like the survivors of other previous crises. The weakness of this model is that many professionals take it as counseling and leave so many unresolved issues due to the limited time involved. The focus on superficial quelling of the painful symptoms after traumatic event leaves the real issues of the survivors unattended. However Mwania and Muola (2013) negated this view and instead recommended counseling for the victims of post-election violence in Kenya in order to reduce the effects of posttraumatic stress disorder (PTSD). It should be noted that the brief interventions provided immediately after a crisis only stabilize the survivor but may not necessarily address the long term emerging trauma issues.

Thielman (2005) reported the response by Kenyans to the 1998 bombing of the US embassy in Nairobi and cited training of counselors and conducting therapy as some of the key

responses. The study also indicated that several psychologists were invited in media houses to offer psycho-education. People also sought help from religious leaders and the family members. When the survivors were evaluated one year after the attack, Thielman (2005) reported that the most beneficial models according to the survivors were faith, prayer and God (20%), family support (18%), group therapy (9%), counseling (6%) and personal resourcefulness (3%). It would be argued that by 1998 counseling was not fully developed and appreciated in the country as it is today and this might have led to the low ranking of the counseling services among the 1998 terror survivors.

As noted earlier, posttraumatic growth is a long term process that begins sometime after the experience of a traumatic event. Majority of survivors of the Garissa terror attack received the brief and immediate psychological interventions. It is not however clear what number got the opportunity for long term counseling relationship. However it is possible that many of these survivors accessed professional counseling services. This study intends to investigate the experiences that Garissa University terror survivors had from the various counseling interventions they received. The aim is to compare the emerging themes with the posttraumatic growth domains of the survivors and identify any possible patterns that may be instrumental in designing future crisis interventions in the country and beyond.

The current study also considered demographic differences in consumption of counseling services to be vital in improving future crisis intervention. As noted in the cited studies, exploration of demographic differences in counseling has not attracted enough research. The current study explored this area with the aim of identifying the different factors that affect counseling of crisis survivors in order to inform the improvement of future crisis counseling.

2.5 Summary of Gaps in Research on Posttraumatic Growth

Despite the commendable studies that have been done on PTG in the past, there are certain limitations that the current study strives to address. The gaps noted by the current study include the following: Earlier studies exploring the predictors of PTG reported conflicting findings. Due to lack of consensus among researchers on some of the predictors of PTG, existing literature may not be sufficient to make generalizations on certain aspects of PTG. The current study aims at testing some of these factors in order to contribute to the growing discourse on this subject.

Past studies tend to rely on either quantitative or qualitative paradigms of research separately. Each of these paradigms, used separately, has limitations; for instance the use of qualitative data alone may not be validated, generalized, or test significance of variation in certain constructs under study. Quantitative data on the other hand may not be able to obtain subjective meaning of patterns revealed by figures. The approach also tends to generalize findings without regard to individual and cultural differences. The current study combines both paradigms in a single study to complement each other and bring out a holistic picture of PTG.

Previous studies also tend to classify PTG outcomes into five broad thematic areas. The current study addresses the possibility that studies which generated these themes may not have reached saturation hence new themes might emerge. Most studies on the PTG domains have been carried out on individualistic western societies. The current study focused on the collective African culture with an aim of finding the subjective experience of these domains in a collectivistic cultural background.

Almost all the previous studies used posttraumatic growth inventory (PTGI) as the dominant data collection instrument. This is a self-perceived instrument on which some studies

have raised questions of validity since some survivors may report positive outcome even when it is absent (Frazier, Coyne & Tennen, 2014; Jayawickreme & Blackie, 2014). To counter this, the current study used both PTGI and interviews and later examined convergence on each of the domains of posttraumatic growth. Apart from the survivors, the researcher also interviewed parents of the survivors with the aim of corroborating the information with that of the survivors. The design of the interview questions was done in order to capture pre-trauma and post-trauma functioning of the survivors. This helped in assessing the changes that actually occurred in the functioning of the survivors. This is a deviation from the other studies which only focused on the post-trauma functioning of the survivors as a means of assessing posttraumatic growth.

It was also noted that research on trauma processing strategies had some areas that still required further investigation. On trauma symptoms and processing strategies it was noted that most studies had focused on the collective prevalence of trauma symptoms. The current study focused more on the prevalence of each individual symptom in order to bring a deeper understanding of how different people experience trauma. The prevalence of both short term and the long term trauma processing strategies had been investigated by earlier studies but demographic differences in these strategies appeared to be neglected by majority of studies. The current study analyzed the trauma processing strategies in relation to demographic factors. This was instrumental in directing the design of individual focused trauma interventions in future.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter covers the locale of the study, research design, and target population, sampling procedures, data collection techniques, instrumentation and operationalization of the study and data analysis.

3.2 Locale of the Study

The study was carried out at Moi University's main campus in Uasin Gishu County. The university had a total enrolment of about 30,000 students who were spread across four campuses: Main campus, Town campus, Eldoret west campus and Odera Akang'o campus. The university also has two constituent colleges: Garissa University College and Rongo University College. The main campus was chosen for this study since it received the highest number of students who were transferred from Garissa University College.

3.3 Research Design

The study adopted the mixed methods sequential explanatory design by combining the correlational and phenomenological research design. According to Ivankova, Cresswell, and 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 aim of the quantitative data was to promote understanding of the general research problem as well as the relationship between variables and hypothesis testing. The quantitative data also guided the selecting information-rich sample for the qualitative phase. This was arrived at by selecting participants who recorded the highest scores on the PTGI and later be followed up for in-depth probing.

The qualitative data on the other hand aimed at explaining the patterns that emerged from the quantitative phase. The follow-up model of the explanatory design was used in this case. In this study, 10 students with the highest scores were selected to provide in-depth information on posttraumatic growth and counseling interventions on the terror survivors. The aim of the probe was to provide data that brought out the subjective experience of posttraumatic growth to give further elaboration on the scores for posttraumatic growth on the PTGI. The probing also sought to explain the variation in PTG as a result of different counseling interventions used in counseling survivors of Garissa University terror attack. Further, qualitative data was obtained from 10 significant others of the 10 students. This was to provide collateral information to corroborate the data provided by quantitative tools and interviews from student participants.

3.4 Target Population

The target population was estimated to be 650 Garissa University terror attack survivors, who were transferred to Moi University in Eldoret. The study targeted students and their parents with more focus being on the students. Following the temporary closure of the university after the attack, majority of the students who had survived from 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. It can be concluded that none of them had graduated by the time of conducting the study and therefore the researcher was able to access most of the participants from this population. In this population, 409 were male while 241 were female. Majority of these students (about 500) were Christians, 93 were Muslims while 57 belonged to other religions. The population is shown in Table 1 below.

Table 1

Target Population

Target populations		**Religious Affiliation**	
Male	409	Christians	500
Female	241	Muslims	93
		Others	57

Following the Garissa University terrorist attack, some of the survivors were relocated to the main campus in Eldoret to continue with their studies. 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. For instance, there were those who attended only the critical incident debriefing and never received follow up counseling, and there are also those who received formal counseling for various sessions up to termination level. 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.

3.5 Sample Size

Mugenda and Mugenda (2003) defined sampling as the process of selecting a number of individuals for study in such a way that the characters selected represent the large group from which they were selected. This implies that a sample is a small proportion of a population selected for observation and analysis. To get the required sample for this study, Yamane's formula was employed (Yamane, 1967). Yamane's formula is: $n=\frac{N}{1+N\,(e)2}$

Where n= desired sample size

N=the population size

e=error

In this study the population size was N=650 for students and e=0.05.

$n=\frac{650}{1+650\,(0.05)2}$

n= 247

The total sample size for this study was therefore 257 participants of which 247 were students selected by simple random sampling after grouping them in terms of male and female for representation purposes. Ten parents were selected by automatic inclusion to give qualitative data.

3.5.1 Sampling Procedure

The sample was selected with the assistance of Moi University dean of students who knew the students well. After obtaining permition from Moi University administration to collect data from the survivors, the researcher proceeded to the office of the dean of students. From the dean's office the researcher established that only 425 survivors were in session at that time. It was also established that these students had an association they had formed to offer social support and regularly met while on campus. Through the dean's office, the

researcher was linked to the student leaders of this association who became the research assistants. The researcher arranged to meet the entire group of survivors during their next immediate meeting. On meeting the survivors, only 327 turned up for the meeting. The researcher addressed them on the intention to conduct research and invited those willing to participate to remain after the meeting after which 267 remained. The researcher randomly issued numbered cards with numbers 1 to 267 and issued questionnaire only to those who had numbers 1 to 247. After returning the questionnaires, extreme case sampling was used to select 10 survivors to provide qualitative data. According to Gerring (2007), this is a purposive sampling technique that focuses on participants with unique characteristics. In this study, participants who recorded the highest scores on the Posttraumatic Growth Inventory (PTGI) were selected to form the qualitative sample. On this scale, total scores ranged from 35 to 105 with any score above 90 being considered extreme of which 27 participants met the criteria. The qualitative sample resulting from this was 10 participants which was selected randomly. Guetterman (2015) asserts that the average sample size used in many phenomenological studies is 10 to 31 participants. A further 10 participants were selected from parents of the qualitative sample by automatic inclusion in order to give collateral information for corroboration with information provided by survivors. The summary of the sampling procedure is captured in Table 2.

Table 2

Sampling Matrix

Population	Sampling Technique	Sample Size	Purpose
650 students	Simple random sampling	247	Quantitative Data
247 students	Extreme case sampling	10	Qualitative Data
10 parents	Automatic inclusion	10	Corroborative Data

3.6 Pilot study

A pilot study was conducted in order to ascertain the reliability and validity of the instruments. The standardized instruments for study were developed, normed and standardized on various populations of different cultures from the population under study. The pilot study helped in making any necessary adjustments to align the instruments to the culture of the population under study.

This pilot study was conducted at Moi university town campus in Eldoret, which had not been selected for the main study. The pilot study used a sample size of 16 participants of which 12 were students (6 male and 6 female) and 4 from parents (2 male and 2 female). Analysis of the pilot data was done before the main study commenced. The findings informed the restructuring of the research instruments to fit the population of this study.

3.7 Instrumentation and Operationalization of the Study

In this study, data collection was done using standardized questionnaires, a researcher's developed questionnaire (Initial Trauma Response Scale, ITRS), and open ended interviews. The standardized questionnaires used were; Posttraumatic Growth Inventory (PTGI), Posttraumatic Stress Disorder check list (PTSD Checklist- PCL-5), and Cognitive Processing of Trauma Scale (CPOTS). Qualitative data was collected using an open ended interview guide.

3.7.1 Posttraumatic Growth Inventory (PTGI)

This is a 21 item Likert scale developed by Tedeschi and Calhoun (1996). The questionnaire was normed using a sample of 604 participants ranging from 17 to 25 years of age. The inventory was used to measure the factors of PTG among the survivors of Garissa university terrorist attack. The inventory had five scales and the initial validation reported good reliability. The scales included: 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. Tedeschi and Calhoun (1996) reported the overall reliability of the inventory to be 0.90. Some of the sampled items from the inventory included: 'I changed my priorities about what is important in life', 'I developed new interests', 'I have greater feeling of self-reliance' and 'I have greater sense of closeness with others'. Participants responded to items on the inventory by selecting choices from 0 to 5 with the following interpretations: 0= I did not experience this change as a result of my crisis, 1= I experienced this change to a very small degree as a result of my crisis, 2= I experienced this change to a small degree as a result of my crisis, 3= I experienced this change to a moderate degree as a result of my crisis, 4= I experienced this change to a great degree as

a result of my crisis and 5= I experienced this change to a very great degree as a result of my crisis.

The overall score was obtained by averaging all responses to the items while factor scores are obtained by adding responses to items on each factor. Cadell, Suarez and Hemsworth (2015) repot that the PTGI has also been translated to various languages retaining good reliability. For instance the French version of inventory reported internal consistency of alpha= 0.87, the German version had internal consistency of 0.90, Chinese version 0.83 and the Spanish version had internal consistency of 0.92. However Weiss and Berger (2015) reported that the Spanish, Bosnian, and Chinese versions of PTGI did not replicate the original five factors. This shows that cultural variations may have some effect on the reliability of the tool.

In the current study, the tool showed high internal consistency with Cronbach's alpha coefficient of 0.859. This proved to be a psychometrically sound tool to be adopted in the study. Apart from the psychometric properties of the tool, the norming population used in its validation was college students and this was similar to the population studied in this research. The scale was used in its totality as directed by the developer.

3.7.2 Post Traumatic Stress Disorder Checklist (PCL-5)

This is a 20 item Likert scale questionnaire developed by the United States National Centre for Post-Traumatic Stress Disorder in 2013 (Weathers, Litz, Keane, Palmieri, Witte & Domino, 2015). The items are designed to respond to PTSD symptoms in the Diagnostic Statistical Manual of Mental Disorders (5th Edition) (American Psychiatric Association, 2013). It was normed using a sample of 278 college students. The initial internal consistency was 0.94 and test retest reliability was 0.82 (Blevins, Weathers, Davis, Witte & Domino (2015). The PCL-5 is therefore a psychometrically sound tool to assess (screen) PTSD severity. The

checklist was used to assess trauma severity among the survivors of Garissa university terrorist attack. Participants were asked to indicate how much they had been bothered by each of the PTSD symptoms on a scale of 0 to 4. The total symptom severity score was obtained by adding scores of the 20 items. The scores range from 0 to 80 with the cut off point for low and high severity being 33. The higher the score the higher the severity of trauma. Examples of items on PCL-5 include: In the first month of the terror attack, how much were you bothered by: Repeated, disturbing and unwanted memories of the terrorist attack? Repeated disturbing dreams of the terrorism experience? Feeling very upset when something reminded you of the terrorism experience? The responses are chosen from: 0= Not at all, 1=A little bit, 2= moderately, 3= Quite a bit, 4= extremely.

The above scale was not used in the main study but only in the pilot together with the researchers' developed scale of Initial Trauma Response Scale (ITRS) for the purpose of computing correlation in scores to determine concurrent validity. The scale was modified to make it specific to the population under study. For instance the words 'terrorism experience' was used instead of 'stressful experience.' The other modifications included item 14, 15 and 16, which the researcher found to have compound statements that could not have been easily understood by the participants. The researcher restated the items in simple statements.

3.7.3. Cognitive Processing of Trauma Scale (CPOTS)

It is a 17 item 7 point Likert self-report questionnaire developed by Williams, Davis and Millsap (2002). It was designed to measure cognitive processing of trauma experience and has five subscales. The subscales include: positive cognitive restructuring, resolution or acceptance, downward comparison, regret, and denial. The first 3 sub scales are considered positive while the rest are negative trauma processing strategies.

The norming population comprised of a sample of 229 undergraduate students aged 18 to 48, 76.2% being of Caucasian origin, 10.1% Hispanics, 5.7 % Asian, and 2.6% African American. The internal consistency of the sub scales ranged from alpha 0.71 to 0.85 while the total reliability was 0.92. Some of the sample items on the scale include: There is ultimately more good than bad in this experience, I say to myself this isn't real, I blame myself for what happened and I wish I would have handled this differently. For the current study reliability test was conducted and high internal consistency recorded. The Cronbach's alpha of the tool was 0.769 as shown in appendix 6.

The responses range from -3 to 3, with -3=Strongly Disagree; -2= Moderately Disagree; -1=Slightly Disagree; 0= Neither Agree or Disagree; 1= Slightly Agree; 2= Moderately Agree and 3= Strongly Agree. Scoring is obtained by adding 3 to each item score then computing the mean score within subscales. Higher scores indicate endorsement of the cognitive processing of trauma strategy. This scale was modified to fit to the population under study in order to guide the researcher on the specific changes that need to be made on the scale items.

3.7.4. Initial Trauma Response Scale (ITRS)

This is an 18 item researcher's developed rating scale that measures the initial trauma response strategies usually exhibited in terms of symptoms. The scale assessed the response strategies on 4 subscales namely avoidance response, cognitive alteration response, arousal alteration response and intrusion response.

The proposed scale was given to three trauma experts to assess the content validity. The views of the experts were incorporated in drafting the final scale used in this study. Criterion validity was determined during piloting by giving this scale together with PCL-5 to

the pilot sample and later used to compute the relationship in the scores. The reliability was computed after pilot study using the Cronbach Alpha technique. The reliability of the tool in the current study was high with a Cronbach's alpha of 0.833. The validity of this tool was tested using Posttraumatic Stress Disorder Checklist (PLC-5), which is a standardized tool. Both instruments were issued to same participants and Pearson correlation analysis of the total scores computed. In the current study the two instruments had a correlation coefficient of 0.915. This score shows that the ITRS was very similar to PLC-5 in terms of the construct they measured.

Some of the items on this scale included: I worked hard to push away thoughts, I developed the tendency of easily getting angry and I often experienced terrifying dreams. The scoring was computed by getting the average score of each of the 4 subscales. The maximum possible average was 4 on each subscale. A score of 0-2 represented low severity of trauma while 3-4 was high severity of trauma on each of the 4 subscales. The total severity score was obtained by summation of scores on all the18 items, with the maximum possible score being 72. A score of 0-24 showed low severity, 25-49 indicated moderate severity while 50-72 indicated high severity of trauma.

3.7.5 Interview Guide

An interview guide was used during the second phase of the study to collect qualitative data on the indicators of PTG and evaluation of the role of counseling in PTG of trauma survivors. The purpose of the interviews was to bring out the subjective experience and reporting of the indicators of posttraumatic growth, which could be different from those captured by the standardized tool. This took care of the possibility of more dimensions of this construct emerging by allowing participants to report their experiences subjectively. The

researcher also probed the reasons behind the different kinds of manifestations of PTG reported by the participants. Participants were also probed on their experience with counseling after the terror attack with the view of evaluating the interventions and process used in order to improve trauma counseling strategies

This section examines the quality of the research instruments and provides strategies for quality assurance during the process of data collection.

3.8 Validity of the Quantitative Instruments

Mugenda and Mugenda (2011) stated that validity is the statistical measure of a test's ability to measure what it intends to measure. Researchers use different instruments to collect data. The quality of these instruments is very critical because the conclusions researchers draw are based on the information they obtain using these instruments (Creswell, 2014). This study used three types of validity to assure the quality of the data collection instruments namely face validity, content validity and concurrent validity.

Face validity is concerned with the extent to which the research instrument is subjectively viewed to measure what it purports to measure. It may be influenced by the appropriateness of the language used in the test items. In this study the face validity was determined by the critique of supervisors and examiners. During piloting, the instruments were subjected to the participants in order to check any difficulties with the test items, iron out ambiguity and point out issues that are not culture sensitive for restructuring before the main study.

Content validity examines if a research instrument captures the sample behaviour it purports to measure. In this study the content validity of the researcher's developed tool was determined by subjecting the draft tool to 3 trauma experts for critique. The opinions and

suggestions of the experts were used in altering the items to come up with the final scale that was used in this study. The items in this scale were developed from trauma symptoms listed in the DSM-5 (APA, 2013) which is an authority in mental health issues across the globe. For the standardized tools, the researcher assumed that during the standardization and licensing process, the tools were subjected to expert critique and their certification by international test bodies is proof that the tools measure the constructs they purport to measure.

Concurrent validity compares the scores of the research instrument with the scores of another valid instrument measuring the same construct. If the correlation between the scores is high then the instrument is valid. In this study the concurrent validity of the self-developed scale was determined during piloting by subjecting it together with the PCL-5 to the participants and computing the correlation coefficient which came to 0.833 as shown in appendix 6. This helped in developing the final copy of the questionnaire before the main study. For the standardized tests concurrent validity was determined during the standardization process and has been replicated in other parts of the world as indicated in literature.

3.8.1 Reliability of the Research Instruments

Reliability means the likelihood of obtaining the same results when the researcher measures the same variable more than once, or when more than one person measures the same variable (Brink, 2008). Reliability therefore, relates to the measurement accuracy of the data collection instrument. An instrument can be said to be reliable if its measurement accurately reflects the true scores of the attribute under investigation (Polit & Beck, 2004). In this research, Cronbach Alpha technique which requires only a single test to determine the internal consistency of the instruments was used. The Cronbach Alpha technique is generally the most

appropriate type of reliability test for survey research especially the use of questionnaires in which there is a range of possible answers for each item (Mc Millan & Schumacher, 2001).

Even though the instruments have been standardized and translated into different languages with satisfactory reliability, the researcher computed reliability during the pilot study in order to obtain an Alpha coefficient for the population under study. According to Creswell (2014), a reliability coefficient should be at least 0.70. The reliability coefficients of the instruments for this particular study were 0.833 for ITRS, 0.859 for PTGI and 0.769 for CPOTS as show in appendix 6. It was concluded that the instruments were valid and reliable and therefore able to measure the constructs for which they were designed to measure with insignificant errors.

3.8.2 Trustworthiness of Qualitative Instruments

The criterion for assessing the trustworthiness of naturalistic inquiries was discussed by Creswell, Vicki and Clark (2011) who outlined four components inherent to trustworthiness in qualitative research: credibility, transferability, dependability, and conformability. These four elements work together to help assure rigor in qualitative research. There are a number of techniques that have been developed by qualitative researchers to address the issues of credibility. These include: member checking, peer review and research journaling (Willis, 2007). This study used member checking to assure credibility. This is where the researcher contacted the participants after analysis of their responses to check whether they meant what has been captured by the researcher.

Transferability, also referred to as external validity in the positivist paradigm, can be described as a measure of generalizability exploring the populations, settings, and treatment variables, to which measurement variables can be generalized (Creswell, Vicki & Clark, 2011).

To enable comparisons across settings and people the researcher collected comprehensive notes, ensured saturation of data by participants, and carried out thick and vivid description of the phenomena.

According to Bitsch, (2005) dependability refers to the stability of findings over time. Dependability involves participants evaluating the findings and the interpretation and recommendations of the study to making sure that they were all supported by the data received from the informants of the study, (Cohen, Manion & Morrison, 2011). Dependability was established by peer examination of the transcribed data.

3.9 Data Collection Procedures

Before field work, the researcher obtained introduction letter from the university in order to seek research license from the National Commission for Science and Technology and Innovation (NACOSTI). Permission for use of the standardized questionnaires was obtained from the tool developers and is attached in the appendices. The researcher bought materials before the actual data collection guided by the research budget .The date and time for collecting data was planned in advance. A schedule of timelines to achieve particular stages of writing was strictly followed to ensure completion of the study on time.

The researcher reported to the administration of Moi University for identification and assistance on mobilizing the students targeted in this study. The researcher briefed the administration on the purpose of the visit. Letters of identification from the university and research license from NACOSTI were helpful in preventing any speculation or suspicion. The researcher then proceeded to the participants guided by the institution staff and introduced himself and the research team before issuing questionnaires to the participants nominated to take part in the study. The researcher participated and supervised the fieldwork during data

collection. Data was collected in two phases using coded questionnaires and interview guides respectively. The questionnaires were self-administered where the participants were asked to fill in. Phase one of the study collected quantitative data followed by analysis. The results guided the selection of the qualitative phase sample based on the extreme scores from the quantitative phase. Telephone numbers of the participants were recorded on coded cards matched with the questionnaire codes to facilitate meeting participants for the second phase of the study. Interviews were recorded by audio recorders with prior permission from the participants. The researcher retained copies of the questionnaire in soft copy and hard copy form as a backup in case the first ones are lost.

3.10 Data Analysis and Presentation

The researcher was guided by research questions in analyzing the data. Quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS). Qualitative data was organized and categorized using N Vivo software. Data for each of the six research questions was analyzed and presented differently depending on the nature of data collected for the question as shown below.

Research question 1: This was a quantitative question and therefore analyzed using simple univariate analysis. The prevalence was computed using means, percentages and presented in form of tables. Pearson correlation analysis and multiple regression analysis were also used to test relationships.

Research question 2: This was a qualitative question and therefore analyzed using thematic analysis backed by narratives from the participants. Data was cleaned, coded and categorized after which themes and patterns were extracted.

Research question 3: The question was quantitative and therefore analyzed using Analysis of variance (ANOVA) in order to compute the group differences of various demographic factors together with posttraumatic growth and trauma processing strategies.

Research question 4: This was a quantitative question and therefore analyzed using the Pearson correlation analysis and multiple regression analysis.

Research question 5: Being a quantitative question, analysis was done using Pearson correlation analysis and regression analysis.

Research question 6: The question was analyzed using simple univariate analysis, thematic analysis, and narratives from participants. Similar responses were categorized into themes and patterns in order to establish relationships in answering the research question. Narratives from participants were also cited to help in interpretation of the findings.

3.11 Ethical Considerations

Before collecting data, the researcher acquired permission from the University and a research permit from the National Commission for Science and Technology (NACOSTI) confirming that the researcher had the approval to carry out this study in the selected County. The researcher fully explained the research to the participants in advance in order to obtain their informed consent.

When studies involves human subjects, the principle of justice stresses equitable selection of participants, that is evading participant populations that may be unfairly compelled into participating such as prisoners and institutionalized children. The principle of justice was observed by selecting respondents from the targeted population within the Moi University, main campus.

The researcher then obtained consent from the participants and ensured they participated voluntarily. While carrying out the investigation, the researcher was sensitive at all times to ethical issues such as confidentiality and privacy of respondents. The researcher ensured that the participants understood that their replies were to be used for the purposes of research only. Anonymity of participants was adhered to by not letting participants indicate their names on the questionnaire and instead using codes on the questionnaire. Where names and contact details of the participants were required, the researcher took precaution to ensure that none of these details was used in the final report which will be a public document. This was adhered to through using separate documents in the field and report writing.

The researcher was open and honest when dealing with the respondents. This is where the researcher did not exploit respondents by changing agreements made with them. For instance, if the researcher discovered something else in the practice of carrying out the research and did it secretly without informing the respondents, it would be a form of exploitation and breach the principle of informed consent.

Due to the emotional nature of the phenomenon under study, the researcher put stringent measures in place to offer psychological debriefing to the participants after data collection. This was done by recruiting two qualified counselors to accompany the researcher throughout the entire data collection period and conduct debriefing sessions during or at the end of data collection in order to help participants return to normalcy. The researcher also kept all the recorded research data and filled questionnaires in safe custody after which they will be destroyed once this thesis has been approved by the University.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter discusses the study findings based on data gathered using questionnaires and interviews. Descriptive statistics were presented and summarized using frequency, percentages, tables, and charts such as bar charts and pie charts. Qualitative data was analyzed and presented using themes and charts. The main objective of the study was to examine the relationship between trauma processing strategies and posttraumatic growth among terrorist attack survivors at Garissa University, Kenya. The target population of this study was the former Garissa University terror attack survivors studying at Moi University main campus and their parents.

The chapter is divided into seven sections. The first section presents the demographic information of the participants; second section discusses the prevalence of initial trauma processing strategies and symptoms among terrorist attack survivors. The third section explores the indicators of posttraumatic growth among terrorist attack survivors. The fourth section assesses the demographic differences in posttraumatic growth among terrorist attack survivors, the fifth section tests the relationship between initial trauma processing strategies and posttraumatic growth among terrorist attack survivors and the sixth part examines the relationship between cognitive trauma processing strategies and posttraumatic growth among terrorist attack survivors. The last part examines the role of counseling in posttraumatic growth.

4.2 Response Rate

The researcher selected 247 former Garissa University students who had survived the terror attack to be the main respondents in the study. Ten parents of these students were also selected for interviews. The total sample was 257 of which 247 students were expected to respond to self-administered questionnaires while 10 were interviewed. All the 247 students were issued with the questionnaires while all the 10 parents were interviewed. A total of 53 students pulled out of the study leaving 194 who completed and returned all the questionnaires. With all the 10 parents participating in the interviews to completion the total number of participants who successfully completed the study was 204. The response rate is summarized in Table 3 below:

Table 3

Response Rate

Category	**Total instruments**	**Returned instruments**	**Response rate**
Students	247	194	78.5%
Parents	10	10	100.0%
Total	**257**	**204**	**79.4%**

The response rate for student participants was 78.5 % while the non-response rate was 21.5 %. For the parents, the response rate was 100%. These results were in line with Berg (2004) who argues that, a response rate of 60% and above is adequate to permit data analysis. The higher return rate was attained because the researcher personally administered the questionnaires and moderated the process.

4.3 Demographic Characteristics of Respondents

The study examined demographic characteristics of participants in order to define the sample characteristics for the sake of understanding the population in the current study and to enable future researchers on this topic carry out comparative analysis.

4.3.1 Age Distribution of Respondents

The age of the respondents was sought because age is a vital factor that contributes to how one experiences the world. Age was also considered as an important variable for the study because it could contribute to the level of cognitive ability and ability to learn new adaptation skills after experience of unpleasant events. Table 4 shows the results of the age distribution for the student sample.

Table 4

Age group of Participants

	Percent	**Valid Percent**	**Cumulative Percent**
19-22 Years	8.2	8.2	8.2
23-26 Years	83.0	83.0	91.2
27-30 Years	8.8	8.8	100.0
Total	**100.0**	**100.0**	

Table 4, demonstrated that the age of student participants raged between 19 and 30 years. Majority of the participants (83%) were in the age bracket of 23-26 years followed by those in age bracket 27-30 years (8.8%) and 27-30 (8.2%). Based on these findings, it can be acknowledged that the majority of the participants who were engaged in the study

belonged to the same age group and this could be very important in making conclusions about how this particular age group experienced the phenomenon under study.

4.3.2 Gender of Respondents

The gender of participants was analyzed in order to establish true representation of the participants in terms of their sex. Gender was an important factor in this study because it is one of the individual differences that could affect the results of the study. Table 5 shows the distribution of participants by gender.

Table 5

Gender of Participants

	Percent	**Valid Percent**	**Cumulative Percent**
Male	56.7	56.7	56.7
Female	43.3	43.3	100.0
Total	**100.0**	**100.0**	

Table 5 shows that majority of the participants were males forming 56.7% of the sample while the female formed 43.3% of the participants. This is an indication that both genders had opportunity to participate in the study, thus the findings of the study did not suffer from any gender bias. The researcher was aware that, some of the stereotypes in the society could affect the subjective interpretation of participants' world view and proportionate representation of both gender was necessary to address this issue.

4.3.3 Marital Status of Participants

Marital status of the participants was sought as an important form of human relationships which was one of the aspects of posttraumatic growth that the study aimed at exploring. The results were presented in Table 6 below.

Table 6

Marital Status of Participants

	Percent	Valid Percent	Cumulative Percent
Single	79.9	79.9	79.9
Married	20.1	20.1	100.0
Total	**100.0**	**100.0**	

Table 6 shows that majority of respondents (79.9%) were single while 20.1% were married. This variation could have been informed by the age bracket of the sample under study and the fact that majority of the participants were undergraduate university students who had joined university soon after high school hence transiting from the adolescence stage.

4.3.4 Religious Affiliation of Participants

Religion is an important component that informs how one constructs meaning from adversity. Religious affiliation of participants was therefore one of the demographic factors that the researcher sought to find out. Table 7 shows the distribution of religious affiliation of participants.

Table 7

Religious Affiliation of Participants

	Percent	Valid Percent	Cumulative Percent
Protestant	57.7	57.7	57.7
Catholic	29.9	29.9	87.6
Muslim	3.6	3.6	91.2
Others	8.8	8.8	100.0
Total	**100.0**	**100.0**	

From Table 7, majority of participants (57.7%) were Protestants, Catholics were 29.9% while Muslims and others were 3.6% and 8.8% respectively. The high percentage of the Christians in the sample could be due to the fact that majority of those students who were transferred from Garissa University after the attack were Christians. This was done based on the fact that during the attack students were separated in terms of their religion and majority who were targeted were Christians. Therefore during the process of relocating students from Garissa University more Christians compared to the other religions were willing to be transferred to Moi University.

4.3.5 Demographic Characteristics of the Interview Sample

The researcher interviewed participants to obtain collateral information about posttraumatic growth of the participants and the subjective interpretation of the same from the survivors. The demographic characteristics were presented in order to enable comparison with other similar studies in the past and future. The sample consisted of 10 survivors selected by extreme case sampling basing on the scores reported on the Posttraumatic Growth Inventory (PTGI) and 10 parents selected by automatic inclusion.

Table 8

Qualitative Sample from Parents of Survivors

Participant	**Gender**	**Age**
P01	M	63 years
P02	M	65 years
P03	M	55 years
P04	F	60 years
P05	M	68 years
P06	F	52 years
P07	F	71 years
P08	F	58 years
P09	F	67 years
P10	F	64 years

From Table 8, the sample of parents comprised of 10 participants 4 of whom were male while 6 were female. Their ages ranged from 52 years to 71 years. Parents were selected to give collateral subjective view of the changes noted in the survivors after the attack. This was in response to critics of posttraumatic growth who view the overreliance on self-reports as illusionary. The changes reported by parents in the survivors were later compared with what the survivors reported.

Table 9

Qualitative Sample from Survivors

Participant	**Gender**	**Age**
S01	M	27 years
S02	M	23 years
S03	F	24 years
S04	F	24 years
S05	F	26 years
S06	F	23 years
S07	M	27 years
S08	M	26 years
S09	M	24 years
S10	M	24 years

From Table 9, the qualitative sample of survivors comprised of 10 participants 4 of whom were female while 6 were male. The researcher selected parents by automatic inclusion but matched the gender of the parent to that of the survivor. This was to ensure that gender was fairly distributed in the qualitative sample too. Their ages ranged from 23 years to 27 years. The participants were selected to give their subjective reporting of posttraumatic growth to compare with similar data that had been collected by quantitative tools. This was meant to allow the researcher probe the participants for richer information on posttraumatic growth. This sample was also interviewed to evaluate the counseling services offered to survivors after the attack and give suggestions for improvement in future crisis counseling.

4.4 Descriptive Analysis of Demographic Factors

The study sought to know various demographic characteristics of participants and their distribution across the various measures used in this study. The factors included age group, gender, religious affiliation and marital status of participants. This section examined the distribution of trauma processing strategies, initial trauma severity, posttraumatic growth indicators, cognitive processing of trauma and counseling sessions attended across the demographic factors. The results are presented in form of tables.

4.4.1 Demographic Differences in Initial Trauma Processing Strategies

The survivors were asked to rate how often they experienced each of the 18 symptoms within the first month of the attack. The scores were clustered into four different groups representing the initial trauma processing strategies namely cognitive alteration response, avoidance response, arousal response and intrusion response. The scores were obtained by computing the mean for each strategy which ranged from 0 to 4. Table 10 shows distribution of initial trauma processing strategies in relation to demographic factors.

Table 10

Demographic Differences in Initial Trauma Processing Strategies

		Cognitive Alteration Response	**Avoidance Response**	**Arousal Response**	**Intrusion Response**
Gender of	Male	2.15	2.74	2.40	2.65
Participants	Female	2.33	3.04	2.60	3.24
Age group of	19-22	2.56	2.92	2.61	3.22
Participants	23-26	2.22	2.93	2.50	2.90
	27-30	2.00	2.29	2.22	2.72
Religion of	Protestants	2.17	2.79	2.38	2.90
Participants	Catholics	2.24	2.95	2.60	2.95
	Muslims	2.17	3.00	2.40	2.57
	Others	2.58	3.04	2.83	2.94
Marital status	Single	2.24	2.88	2.48	2.87
	Married	2.17	2.84	2.49	3.05

4.4.1.1 Gender of Participants and Initial Trauma Processing Strategies

The researcher targeted gender of participants in order to ascertain whether there were gender differences in the trauma processing strategies used by participants. The findings show that females reported higher means on all the four initial trauma processing strategies compared to men. The strategy with the highest prevalence was intrusion response with a mean of 3.24 for female and 2.70 for male followed by avoidance response with a mean of 3.04 for female and 2.74 for male. For arousal response females had a mean of 2.60 and 2.40 for male. Cognitive alteration response had the lowest mean of 2.33 for female and 2.15 for male. The

results show that the prevalence of trauma symptoms was higher in females as compared to males.

These findings replicated what other studies across the globe have found out. Tolin and Breslau (2007) reported that women were more likely to experience severe trauma symptoms as compared to men. The study was conducted as a follow up of a meta-analysis done by Tolin (2006) which had found that women were twice more likely than men to experience trauma symptoms that meet PTSD criteria. These findings are consistent with those of Crum-Cianflone and Jacobson (2014) who investigated the prevalence of trauma symptoms in US service man and women from the Iraq and Afghanistan conflicts. The results showed that women experienced posttraumatic symptoms to a higher degree as compared to their male counterparts. With the different populations used in these studies having different demographics but showing similar results it is clear there could be other individual differences that shape these results.

Craig and Sprang (2014) also replicated similar findings in a sample of children. The study examined prevalence of posttraumatic symptoms and found that girls reported higher total posttraumatic stress disorder than boys on admission and still retained higher symptom levels after treatment than boys. The researcher hypothesizes that this trend could be in line with cultural biases that socialize men to be ‘strong’ in the face of adversity with expression of emotions being seen as a ‘weakness’. Women on the other hand are socialized to freely express their emotions which could be a reason for expressing their PTSD vulnerability more in the analyzed studies as compared to men.

4.4.1.2 Age of Participants and Initial Trauma Processing Strategies

The study sought to explore the prevalence of initial trauma processing strategies in relation to age of the participants. The findings indicated that the mean of all the initial trauma processing strategies was highest at the lowest age and lowest at the highest age. Cognitive alteration response was highest for ages 19-22 (mean= 2.56) followed by ages 23-26 (mean=2.22) and ages 27-30 (mean=2.00). Avoidance response was highest for ages 23-26 (mean=2.93) followed by ages 19-22 (mean= 2.92) and ages 27-30 (mean=2.29). Arousal response was highest for ages 19-22 (mean=2.62) followed by ages 23-26 (mean=2.50) and ages 27-30 (mean=2.22). Intrusion response was highest for ages 19-22 (mean=3.22) followed by ages 23-26 (mean= 2.90) and ages 27-30 (mean= 2.72). The findings indicate that trauma symptoms were more prevalent for lower ages but to a large extent less prevalent as age increased.

Other studies recorded similar findings indicating that high trauma prevalence was associated with younger age. For instance Ditlevsen and Elklit (2010) using a sample of 6548 participants sampled from Danish and Nordic studies on trauma reported high prevalence of trauma for ages below 40 and the lowest prevalence for participants in 70s. Smith and Tyzik (2015) reported similar findings in their study that explored trauma symptomatology in women veterans in the US. They found that older adults above 65 years reported lower trauma symptoms as compared to those aged below 45 years. This trend could be explained by several factors but the current study attributes it to possible accumulated trauma over time. Older people are assumed to have had more trauma experiences in life compared to younger ones which contributes to their possible interpretation of trauma with less severity.

Another study identified a curvilinear relationship between age and trauma symptomatology (Koutana, Jelinek, Blatny & Kepak, 2017). The study found low trauma levels in children and older adults, with highest trauma levels being reported by young adults and middle aged participants. This could be supported by the fact that children lack the cognitive maturity to interpret certain traumatic events. This kind of relationship could not have been replicated by the current study because the population used (19 to 30 years) fell in almost the same developmental age bracket which could have implied similar characteristics.

4.4.1.3 Marital Status of Participants and Initial Trauma Processing Strategies

The study sought to explore group differences in initial trauma processing strategies with respect to marital status of the participants. The study findings show that among the married participants, the most prevalent initial trauma processing strategies were intrusion response (mean= 2.9) and avoidance response (mean=2.9) followed by arousal response (mean= 2.5) with the least prevalent being cognitive alteration response (mean=2.2). Among the single the most prevalent initial trauma processing strategy was intrusion response (mean=3.1) followed by avoidance response (mean= 2.8), arousal response (mean=2.5) with the least prevalent being cognitive alteration response (mean=2.2). Out of the possible highest mean of 4 for each strategy, both married and single participants reported prevalence of above average on each of the four initial trauma processing strategies. The results show that both the married and single participants reported equal prevalence on arousal response. Intrusion response was higher among the married participants with cognitive alteration being higher among the single participants.

Studies on demographic differences in trauma symptoms have been conducted (Crum-Cianflone and Jacobson, 2014; Craig and Sprang, 2014) but literature on differences based on

marital status is still scanty. The most analyzed demographic factors are gender, age and education level of participants. This was the rationale for the current study attempt to explore the differences trauma symptoms based on marital status of the participants in order to inform future research in trauma.

4.4.1.4 Religious Affiliation of Participants and Initial Trauma Processing Strategies

The study sought to find out the mean differences in the prevalence of initial trauma processing strategies based on the religious affiliation of the participants. The findings show that avoidance response was to a large extend more prevalent among participants of all religious affiliations with Muslims and Others (mean=3.0) followed by Catholics (mean=2.9), and Protestants (mean=2.8). This was followed by intrusion response with Catholics recording the highest prevalence (mean= 3.0) followed by Protestants and Others (mean=2.9) and Muslims (mean=2.6). The next most prevalent initial trauma processing strategy was arousal response with others recording the highest mean at 2.8 followed by Catholics (mean=2.6) and, Protestants and Muslims (mean=2.4). The least prevalence was recorded on cognitive alteration response with others (mean= 2.6) followed by Protestants, Catholics and Muslims (mean=2.2). From the results there is a general trend of highest prevalence of initial trauma processing strategies among participants of other religious affiliation followed by the Catholic participants and Protestants with Muslim participants recording the least prevalence except for avoidance response.

The role of religion in trauma resolution has become an area of focus for Psychologists. Brewer and Keenig (2014) assert that religion and spirituality play an important role in shaping how people interpret life events. In their study they argued that religion and spirituality could promote trauma resilience, meaning making and forgiveness and offer hope after trauma. In

the current study, there seems to be a consistent pattern of lower prevalence of cognitive alteration, intrusion and arousal among the Muslims as compared to the other religions. During the terrorist attack the perpetrators seemed to separate the victims based on the faith they professed with more killings targeted at Christians. This could explain the high prevalence of trauma symptoms among the non- Muslim participants who might have been overwhelmed by the profiling as opposed to their Muslim counterparts.

4.4.2 Demographic Differences in Initial Trauma Severity

The study sought to explore the demographic differences in trauma severity. The demographic factors explored included age, gender, religious affiliation and marital status of participants. The findings are shown in Table 11 below.

Table 11

Demographic Differences in Trauma Severity

		Low Trauma Severity	**Moderate Trauma Severity**	**High Trauma Severity**
		%	**%**	**%**
Gender of Participants	Male	87.5	62.3	46.3
	Female	12.5	37.7	53.8
Age group of Participants	19-22	0.0	7.5	10.0
	23-26	75.0	81.1	86.3
	27-30	25.0	11.3	3.8
Religion of Participants	Protestant	75.0	60.4	52.5
	Catholic	12.5	30.2	31.3
	Muslim	0.0	4.7	2.5
	Others			
Marital status	Single	12.5	4.7	13.8
	Married	75.0	79.2	81.3
		25.0	20.8	18.8

4.4.2 Age of Participants and Initial Trauma Severity

The study sought to explore the age differences in initial trauma severity of participants. The aim was to explore how each level of initial trauma severity was experienced within each of the three age groups of the participants. The study findings show that among the participants who reported low initial trauma severity participants aged 23 to 26 years were the majority at 75.0% followed by those aged 27 to 30 at 25.0 % with those aged 19 to 22 not recording any level of low trauma severity. For moderate initial trauma severity the participants aged 23 to 26 were the majority at 81.1% followed by ages 27 to 30 at 11.3% with the lowest being ages 19 to 22 at 7.5 %. For high initial trauma severity age 23 to 26 were the majority at 86.3% followed by age 19 to 22 at 10.0% with the lowest being age 27 to 30 at 3.8%. The results show that there was generally lower initial trauma severity among the younger participants with a steady increase in severity as age increased and later a decline at higher age.

This was supported by the findings of Ditlevsen and Elklit (2010) who reported high levels of trauma for ages under 40 years with the lowest levels for participants aged above 70 years. The findings show that younger people are conceptualized traumatic events more severe as compared to the older ones. Similar results were recorded by Smith and Tyzik (2015) in a study that explored trauma symptomatology in women veterans in the US. They found that older adults above 65 years reported lower trauma symptoms as compared to those aged below 45 years. This trend could be explained by several factors but the current study attributes it to possible accumulated trauma over time.

Older people are assumed to have had more trauma experiences in life compared to younger ones which contributes to their conceptualization of trauma as less severe. Another study identified a curvilinear relationship between age and trauma symptomatology (Koutana,

Jelinek, Blatny & Kepak, 2017). The study found low trauma levels in children and older adults with highest trauma levels being reported by young adults and middle aged participants. Children could appear to report low trauma severity on the basis of their cognitive level and few life achievements whose loss due to traumatic events could be instrumental in informing the level of trauma severity. For the older generation trauma severity could be low as a result of previous processes of assimilation and accommodation as conceptualized by the organismic valuing theory (Joseph & Linely, 2005). However in the current study conclusions about age differences cannot be authoritatively made because the age range of the sample is very small and the differences could be accounted for by other factors other than age.

4.4.2.2 Gender of Participants and Initial Trauma Severity

The study sought to explore the gender differences in initial trauma severity of participants. The aim was to explore how each level of initial trauma severity was experienced within each gender. The study found that for low initial trauma severity majority of the participants (87.5%) were male while female participants were 12.5%. For moderate initial trauma severity majority (62.3%) were male participants followed by female participants at 37.7%). For high initial trauma severity majority of the participants (53.7%) were female with males being 46.3%). The results show that initial trauma severity was higher among the female participants compared to the male participants.

These findings are agree with those of Crum-Cianflone and Jacobson (2014) who investigated the prevalence of trauma symptoms in US service man and women from the Iraq and Afghanistan conflicts. The results showed that women experienced posttraumatic symptoms to a higher degree compared to their male counterparts. Craig and Sprang (2014) also reported similar findings in a sample of children. The study examined prevalence of

posttraumatic symptoms and found that girls reported higher total posttraumatic stress disorder than boys on admission and still retained higher symptom levels after treatment than boys. The consistency in conceptualization of trauma severity with higher degree in women than men could be informed by cultural differences and historical issues of discrimination where society always blocked women from doing tougher jobs and facing more severe life crises. As a result this could have developed schemas skewed towards fear of adversity which could inform the continued higher rating of trauma severity in women than men.

4.4.2.3 Marital Status of Participants and Initial Trauma Severity

The study sought to explore the marital status differences in initial trauma severity of participants. The aim was to explore how each level of initial trauma severity was experienced according to the marital status of participants. The study found that for low initial trauma severity majority of the participants (75.0 %) were single while married participants were 25.0 %. For moderate initial trauma severity, majority of participants (79.2 %) were single participants followed by married participants (20.8 %). For high initial trauma severity majority of the participants (81.3 %) were single with the married being 18.8%). The findings show that trauma severity was higher among the single participants as compared to the married participants. With marriage and family offering an environment for social support after adversity, it is possible that the lower levels of trauma severity among the married could be as a result of the buffer effect of family support against the pain of trauma.

4.4.2.4 Religious Affiliation and Initial Trauma Severity

The study sought to explore the religious affiliation differences in initial trauma severity of participants. The aim was to explore how each level of initial trauma severity was experienced by participants of various religious backgrounds. The study found that for low

initial trauma severity majority of the participants (75.0 %) were Protestants followed by Catholics (12.5 %) and those from other religions (12.5 %) with Muslims being the lowest with 0.0%. For moderate initial trauma severity majority of participants (60.4 %) were Protestants followed by Catholics (30.2 %), Muslims (4.7 %) and others at 4.7 %. For high initial trauma severity majority of the participants (52.5 %) were Protestants followed by Catholics (31.3 %), others (13.8 %) and Muslims (2.5%).The findings show a general trend where initial trauma severity was highest among Protestants followed by the Catholic participants and other religions with the lowest severity being recorded by Muslim participants.

Religion has been reported as an important factor that could influence how people conceptualize events. Hood, Hill and Spika (2009) found that spirituality and religiosity can influence trauma outcomes. After adversity, the shuttered world view can be restored through spiritual and religious activities. Augustine (2014) observed that the difficult questions that people ask after traumatic events may be answered by religion. In such cases survivors' faith is strengthened and trauma could be interpreted as less severe. Sometimes the shuttered world view may challenge one's faith to a magnitude of losing it. In such cases meaning making process may be affected hence keeping the person distressed for long (Hood, Hill & Spika, 2009). Literature on religious differences in trauma severity for specific religious affiliations is scarce. Most studies examine religion as a whole without examining the contribution of each individual religion. The current study attempted to analyze the differences in trauma severity based on each of the religious affiliations in the study. This may be a baseline for future studies on religion and trauma.

4.4.3 Demographic Differences in Cognitive Trauma Processing Strategies

The study sought to explore the demographic differences in cognitive trauma processing strategies in terms of age, gender, marital status and religious affiliation of the participants. Majority of studies reviewed on cognitive trauma processing contain demographic factors of survivors analyzed independently with no attempt made to examine demographic differences in the trauma processing strategies. The current study examined these differences in order to guide trauma therapists in the choice of suitable therapeutic techniques for diverse groups of people.

Table 12

*Demographic Differences in Cognitive Trauma Processing Strategie*s

		Denial	**Acceptance**	**Regret**	**Positive Cognitive Restructuring**	**Downward Comparison**
Gender of	Male	2.55	3.77	2.57	3.45	4.07
Participants	Female	2.43	3.67	2.44	3.40	4.15
Age group of	19-22	1.72	3.27	2.48	2.71	4.75
Participants	23-26	2.64	3.73	2.55	3.51	4.10
	27-30	1.82	4.10	2.12	3.29	3.51
Religion of	Protestant	2.45	3.75	2.56	3.42	4.09
Participants	Catholic	2.45	3.73	2.49	3.39	3.97
	Muslim	2.61	3.43	2.29	3.62	4.14
	Others	2.88	3.68	2.35	3.53	4.69
Marital status	Single	2.48	3.76	2.38	3.41	4.02
	Married	2.55	3.58	3.02	3.49	4.46

4.4.3.1 Gender of Participants and Cognitive Trauma Processing Strategies

The study explored marital status differences in cognitive trauma processing strategies employed by the participants. Understanding these differences was important as it could help counseling practitioners in designing relevant intervention strategies for future trauma survivors. The study found that downward comparison was used to a large extent by the female participants with a mean of 4.2 followed by the male participants with a mean of 4.1. Acceptance on the other hand was higher among the male participants with a mean of 3.8 while the mean for female participants was 3.7. Positive cognitive restructuring had the same mean of 3.4 for both male and female participants. Denial had a mean of 2.5 among the male and 2.4 among the female participants. Regret was higher in males at a mean of 2.6 and 2.4 among female participants.

4.4.3.2 Age of Participants and Cognitive Trauma Processing Strategies

The study explored the age differences in the cognitive trauma processing strategies employed by the participants. Understanding age differences was important as it could help counseling practitioners in designing appropriate intervention strategies for future trauma survivors. The study found that downward comparison was used to a large extent by the participants aged 19 to 22 years with a mean of 4.7 followed by those aged 23 to 26 with a mean of 4.1 with those aged 27 to 30 recording the lowest mean at 3.5. Acceptance on the other hand had the highest mean among those aged 27 to 30 (4.1) followed by age 23 to 26 at mean 3.7 with the least being ages 19 to 22 with a mean of 3.3. Positive cognitive restructuring was highest among participants of ages 23 to 26 with a mean of 3.5 followed by ages 27-30 with mean of 3.2 with the lowest being ages19 to 22 at a mean of 2.7. Denial was highest among participants of ages 23 to 26 with a mean of 2.6 followed by those of ages 27 to 30 with mean

of 1.8 and lowest among participants of ages 19 to 22 with mean of 1.7. Regret was highest among participants of ages 23 to 26 with mean of 2.56 followed by ages 19 to 22 at a mean of 2.48 with the least being ages 27-30 at a mean of 2.1. The general trend from the findings shows that downward comparison was more prevalent among younger participants and less prevalent among the older participants. Acceptance was found to be higher among the older participants and less prevalent among the younger participants. Positive cognitive restructuring was least prevalent among the youngest participants with higher prevalence among those aged 23 to 26 and a slight decrease as age increased. Denial was lower among the younger and older participants with the highest prevalence being recorded by those aged 23 to 26. Regret was highest among the younger participants and lowest among the older participants.

4.4.3.3 Religious Affiliation of Participants and Cognitive Trauma Processing Strategies

The study explored the religious affiliation differences in the use of cognitive trauma processing strategies employed by the participants. Understanding these differences was important as it could help counseling practitioners in designing appropriate intervention strategies for future trauma survivors. The study found that downward comparison was used to a large extent by the participants from other religious affiliations with a mean of 4.7 followed by Protestant and Muslim participants with a mean of 4.1 with Catholics recording the lowest mean at 4.0. Acceptance had a similar mean of 3.7 among the Protestants, Catholics and other religious affiliations with the least mean being recorded by Muslims at a mean of 3.4. Positive cognitive restructuring was highest among the Muslim participants with a mean of 3.6 followed by participants from other religions with a mean of 3.5 with the lowest being recorded by Protestants and Catholics at a mean of 3.4 each. Denial was highest among participants of other religious affiliation with a mean of 2.9 followed by Muslim participants with mean of 2.6. The

lowest mean was recorded by Protestant and Catholic participants with mean of 2.5 each. Regret was highest among Protestant participants with mean of 2.6 followed by Catholics at a mean of 2.5. Participants from other religious affiliation recorded regret with a mean of 2.4 while the Muslims recorded the lowest mean of 2.3.

4.4.3.4 Marital Status of Participants and Cognitive Trauma Processing Strategies

The study explored the marital status differences in the cognitive trauma processing strategies employed by the participants. Understanding marital status differences was important as it could help counseling practitioners in designing intervention strategies for future trauma survivors. The study found that downward comparison was used to a large extent by the single participants with a mean of 4.5 while among the married participants had mean was 4.0. Acceptance was higher among the single participants with a mean of 3.8 while the married participants recorded a mean of 3.6. Positive cognitive restructuring was higher among the married participants with a mean of 3.4 compared to the single participants with a mean 3.4. Regret was higher among the married participants with mean of 3.0 with that of the single participants being 2.4. The results indicated that negative trauma processing strategies were more prevalent among female participants compared to their male counterparts. Positive trauma processing strategies on the other hand were employed more by the single participants as compared to the married. This was contrary to what was expected as it was assumed that married people would score higher on the positive processing strategies and less on the negative strategies due to social support.

4.4.4 Demographic Differences in the Number of Counseling Sessions Attended

The study sought to know the number of counseling sessions attended by the participants following the terror attack. Participants were asked to indicate the number of

counseling sessions they attended after the terror attack. This was important to help the researcher asses how counseling could have contributed to growth after adversity. The results were presented in Table 13 below.

Table 13

Number of Counseling Sessions Attended

	Percent	**Valid Percent**	**Cumulative Percent**
None	16.5	16.5	16.5
Critical Incident Debriefing	29.9	29.9	46.4
5-10	35.6	35.6	82.0
Above 10	18.0	18.0	100.0
Total	**100.0**	**100.0**	

From Table 13 majority of participants (35.6%) attended between 5 and 10 counseling sessions followed by those who attended critical incident debriefing for between one and five sessions at 29.9%. Those who attended above 10 sessions were 18% while those who never attended any session were 16.5% of the sample. From these findings there is evidence for overwhelming consumption of counseling services among the terrorist attack survivors.

This is contrary to the findings of Munywoki, Karuri, Gikandi, Kaithuru, Nyagah and Asatsa (2017) who reported that people with psychological issues preferred other helping avenues as opposed to counseling. However this study was conducted on the general population who had not gone through any event of a similar magnitude like the terror attack in the current study. In the current study 93.5% of the participants went for counseling which supports the argument that entrenchment of these services in response to the growing terror

attack cases in the world has increased over the last few years (d'Ardenne, 2012; Alayarian, 2011; Forbes et al, 2011).The findings indicate a good trend in the counterterrorism initiatives and trauma management. This is a deviation from the past as indicated by the findings of Thielman (2005) who found that after the 1998 bombing in Nairobi survivors sought help from diverse models ranging from prayer and God (20%), family support (18%), group therapy (9%), counseling (6%) and personal resourcefulness (3%). This shows that there wasn't much counseling then as it is today where consumption of counseling services has grown today However from the current study it was not clear whether the participants attending the counseling did it from their own intrinsic motives to grow or were motivated by the desire to do away with the intense pain from the experience of trauma.

4.4.4.1 Gender of Participants and the Number of Counseling Sessions Attended

The study explored gender differences in the number of counseling sessions attended by the participants. Understanding gender differences was important as it could help counseling practitioners in designing intervention strategies for future trauma survivors. Table 14 shows the number of counseling sessions attended by participants in relation to their gender.

Table 14

Gender Differences in Number of Counseling Sessions Attended

		Gender of Participants	
		Male (%)	**Female (%)**
Number of counseling sessions attended	None	18.18	14.29
	Critical Incident Debriefing	32.73	26.19
	5-10	33.64	38.10
	Above 10	15.46	21.43
Total		**100**	**100**

The findings show that majority of those who did not attend any counseling sessions (18.18%) were male while 14.29% of female participants did not attend any counseling. The male participants formed the majority (32.73%) of those who attended critical incident debriefing only compared to female participants (26.19%). For those who attended 5 to 10 counseling sessions female participants were the majority (38.10%) followed by the male participants (33.64%). For those who attended more than 10 counseling sessions female participants were the majority (21.43%) compared to the male participants (15.46%). The findings showed that men to a large extend attended counseling on short-term basis while more female participants attended the long-term counseling. This in consistent with the findings of Tanya, Cann, Calhoun, Tedeschi and Demakis (2010) which concluded that women were more likely to attend psychotherapy while men were less likely to self-disclose.

4.4.4.2 Marital Status of Participants and the Number of Counseling Sessions Attended

The study explored marital status differences in the number of counseling sessions attended by the participants. Understanding marital status differences was important as it could help counseling practitioners in designing intervention strategies for future trauma survivors. Table 15 shows the number of counseling sessions attended by the participants with respect to their marital status.

Table 15

Marital Status Differences in Number of Counseling Sessions Attended

		Gender of Participants	
		Single (%)	**Married (%)**
Number of counseling sessions attended	None	16.13	17.95
	Critical Incident Debriefing	29.03	33.33
	5-10	33.13	33.33
	Above 10	18.71	15.39
Total		**100.0**	**100.0**

The findings show that majority of those who did not attend any counseling sessions (17.94%) were married while 16.13% of single participants did not attend any counseling. The married participants were the majority (33.33%) of those who attended critical incident debriefing only, compared to single participants (29.03%). For those who attended 5 to 10 counseling sessions single participants were the majority (36.13%) followed by the married participants (33.33%). For those who attended more than 10 counseling sessions single participants were the majority (18.71%) compared to the married participants (15.39%).

4.4.4.3 Religious Affiliation of Participants and the Number of Counseling Sessions Attended

The study explored the religious affiliation differences in the number of counseling sessions attended by the participants. Understanding these differences was important as it could help counseling practitioners in designing intervention strategies for future trauma survivors. Table 16 shows the number of counseling sessions attended by the participants with respect to their religious affiliation.

Table 16

Religious Differences in Number of Counseling Sessions Attended

		Religion of participant			
		Protestants (%)	**Catholic (%)**	**Muslim (%)**	**Others (%)**
Number of counseling sessions attended	None	14.29	13.79	14.29	41.18
	Critical Incident Debriefing	33.93	27.59	28.57	11.76
	5-10	33.93	35.21	57.14	35.29
	Above 10	17.86	22.41	0.0	11.76
Total		**100.0**	**100.0**	**100.0**	**100.0**

The findings show that majority of those who did not attend any counseling sessions (41.18%) were from other religious affiliation, followed by Muslims and Protestants (14.29%), with least being Catholics (13.79%). The Protestants formed the majority (33.93%) of those who attended critical incident debriefing only, followed by Muslim participants (28.57%), Catholics (27.59%), with the least being others (11.76%). For those who attended 5 to 10 counseling sessions Muslim participants were the majority (57.14%) followed by participants from other religious affiliation (35.29%), Catholics (35.21%), with the least being Protestants

(33.93%). For those who attended more than 10 counseling sessions Catholic participants were the majority (22.41%) followed by Protestants (17.86%), participants from other religious affiliation (11.76%). No Muslims attended more than 10 counseling sessions.

4.4.4.4 Age of Participants and the Number of Counseling Sessions Attended

The study explored the age differences in the number of counseling sessions attended by the participants. Understanding these differences was important as it could help counseling practitioners in designing intervention strategies for future trauma survivors. Table 17 shows the number of counseling sessions attended by the participants with respect to their ages.

Table 17

Age Differences in Number of Counseling Sessions Attended

		Age group of participant		
		19-22 (%)	**23-26 (%)**	**27-30 (%)**
Number of counseling sessions attended	None	18.75	16.15	17.65
	Critical Incident Debriefing	43.75	31.68	0.0
	5-10	18.75	34.16	64.71
	Above 10	18.75	18.01	17.65
Total		**100.0**	**100.0**	**100.0**

The findings show that majority of those who did not attend any counseling sessions (18.75%) were those aged 19 to 22 followed by those aged 27 to 30 at 17.65% with those aged 23 to 26 being the lowest at 16.15%. For those who attended critical incident debriefing only those aged 19 to 22 were the majority (43.75%) followed by those aged 23 to 26 at 31.68% with those aged 27 to 30 not attending any critical incident debriefing. For those who attended 5 to 10 sessions participants aged 27 to 30 formed the majority (64.71%) followed by those aged 23 to 26 at 34.16% with the least being those aged 19 to 22 (18.75%). Participants aged

19 to 22 were the majority (18.75%) of those who attended above 10 sessions followed by ages 23 to 26 at 18.01% with the lowest being ages 27 to 30 at 17.65%.

4.5 Prevalence of Initial Trauma Processing Symptoms and Strategies among the Garissa University Terrorist Attack Survivors

Research question one sought to examine the initial trauma response strategies employed by the survivors within the first month of the attack. Following traumatic experience, survivors usually respond in diverse ways as they attempt to cope with the shock of the trauma. Trauma reaction can be identified from a number of symptoms exhibited by the survivors usually clustered in four groups namely cognitive alteration, avoidance, arousal and intrusion (American Psychiatric Association, 2013). This study sought to explore the prevalence of the individual trauma symptoms and the clusters among the survivors of the terror attack. The survivors were asked to rate how often they experienced each of the 18 symptoms within the first month of the attack. The scores ranged from 0 to 4 with the mean of each symptom being computed. The highest possible mean was 4 while the lowest possible mean was 0. A score of 0 would mean the participant did not experience the symptom while a score of 4 meant the participant experienced the symptom more frequently. Table 18 shows the prevalence of the symptoms.

Table 18

Initial Trauma Response Symptoms

	N	Mean	Std. Deviation
I worked hard to push away thoughts related to the attack	194	3.07	1.181
I could not remember key issues related to the attack	194	1.45	1.475
I often felt emotionally separated from others	194	2.77	1.354
I became extremely alert to any perceived threat.	194	3.43	1.032
I developed the tendency of easily becoming angry.	194	2.46	1.300
I often avoided conversations about the attack.	194	2.70	1.463
I suddenly lost interest in activities I enjoyed before the attack	194	2.44	1.350
I often experienced terrifying dreams.	194	2.92	1.259
I often experienced physiological reactions.	194	2.72	1.317
My normal sleeping pattern was disrupted	194	2.78	1.244
My concentration span on events reduced	194	2.38	1.283
I often blamed myself for failing to avoid the attack	194	1.48	1.551
I developed self-destructive behaviour.	194	1.85	1.438
I often avoided all reminders of the attack.	194	2.84	1.272
I often experienced flashbacks of the attack	194	3.27	1.162
I developed recklessness in my day to day behaviour	194	2.02	1.390
I experienced persistent negative emotions related to the attack	194	2.98	1.163
I experienced prolonged pain after exposure to reminders of the attack	194	2.71	1.271

The most prevalent trauma symptom experienced by the survivors was being extremely alert of any threat (mean= 3.43; standard deviation=1.03) followed by regular flashbacks of the attack (mean=3.27; standard deviation=1.16) and trying hard to push away thoughts related

to the attack (mean=3.07; standard deviation= 1.18). The least prevalent trauma symptoms exhibited by the participants included not being able to remember key issues related to the attack (mean=1.45; standard deviation= 1.48) followed by self-blame for failing to avoid the attack (mean=1.48; standard deviation= 1.55) and development of self-destructive behaviour (mean= 1.85; standard deviation= 1.44).

The study further computed the prevalence of each individual trauma symptom in relation to the number of participants who experienced it. The criteria for this computation were based on the mean score with scores below the mean of 2 being considered low frequency while scores above 2 being considered highly frequent. Table 19 shows the prevalence of each of the 18 trauma symptoms based among Garissa University terrorist attack survivors.

Table 19

Prevalence of Trauma Symptoms

	Mean >2 Percentage	**Mean<2 Percentage**
I worked hard to push away thoughts related to the attack	68.5%	31.5%
I could not remember key issues related to the attack	27.3%	72.7%
I often felt emotionally separated from others	65%	35%
I became extremely alert to any perceived threat.	82.5%	17.5%
I developed the tendency of easily becoming angry.	51.1%	48.9%
I often avoided conversations about the attack.	63.4%	36.6%
I suddenly lost interest in activities I enjoyed before the attack	53.1%	46.9%
I often experienced terrifying dreams.	68.6%	31.4%
I often experienced physiological reactions.	62.4%	37.6%
My normal sleeping pattern was disrupted	66%	34%
My concentration span on events reduced	50.5%	49.5%
I often blamed myself for failing to avoid the attack	32.5%	67.5%
I developed self-destructive behaviour.	34.5%	65.5%
I often avoided all reminders of the attack.	66.5%	33.5%
I often experienced flashbacks of the attack	77.8%	22.2%
I developed recklessness in my day to day behaviour	39.2%	60.8%
I experienced persistent negative emotions related to the attack	69.1%	30.9%
I experienced prolonged pain after exposure to reminders of the attack	64.4%	35.6%

The results show high prevalence of the trauma symptoms among the participants. Apart from not remembering key issues related to the attack, blaming self for failure to avoid the attack, developing self-destructive behaviour and developing recklessness, all other

symptoms were experienced by more than 50% of the participants. For instance the most prevalent symptoms were being extremely alert to any perceived threat (82.5 %), experience of flashbacks about the attack and experience of persistent negative emotions about the attack (69.1 %) among others. It is therefore evident that the prevalence of trauma symptoms among the Garissa University terror attack survivors was very high. However, considering that self-destruction and self-blame symptoms were among the least prevalent, it could be argued that survivors were on the right path towards recovery and normalcy.

The findings are consistent with those of Mark, Bradley, Lisa, Rebecca, Grant, Marc, Annie, David, Janina and Sandra (2001). The study was conducted on the general population after the September, 11, 2001 terrorist attack in the United States and reported that 68% experienced at least one symptom 'moderately'. About 90% of the population experienced at least one symptom 'a little bit'. The study targeted those who had trauma exposure through television and used a sample of 768 adults selected by simple random sampling from telephone directories. Data were collected using the Posttraumatic Stress Disorder Checklist (PCL-5). The study population and the data collection instrument used in this study were similar to those of the current study which could explain why the results were similar. Both studies used population which was drawn from terrorist attack survivors and the PLC-5 used to collect the data was the validating instrument in the current study. Studies on trauma prevalence in Kenya have reported lower prevalence compared to the current study.

A study on 1565 orphaned and separated children in Usain Gishu County reported post traumatic symptoms prevalence of 28. % in street children, 15% among households and 11.1% among children in children homes (Atwoli, Ayuku, Hogan, Koech, Vreeman, Ayaya & Braitstein, 2014). This study was carried out in the same locale as the current study but the

population of study was mainly children with varying trauma experiences. It can be argued that children could report lower trauma load since some kinds of trauma require certain cognitive functioning levels to comprehend, which children may lack. The cognitive skills among the young adult population in the current study could imply different conceptualization of trauma hence the difference in prevalence. Another study in Maseno on 1190 adults with exposure to severe trauma reported 10.6% trauma symptom prevalence (Jenkins, Otieno, Omollo, Ongeri, Sifuna, Kingora, Kiima & Ogutu, 2015). The researcher attributes the variations in the prevalence of trauma on various factors ranging from the type of trauma, age, and data collection instruments used in the studies. The high prevalence of trauma symptoms in the current study could also be a product of the magnitude of the terrorist attack which killed many people receiving high coverage in both the local and international media.

4.5.1 Initial Trauma Processing Strategies among the Garissa University Terrorist Attack Survivors

The study sought to explore the initial trauma processing strategies employed by the survivors in response to the terror attack. The strategies were computed by clustering the trauma symptoms into the DSM- V categories and finding their mean. The lowest possible mean was 0 while the highest possible mean was 4. A strategy with a mean of 0 would mean that no participant employed the strategy in processing of trauma while a score of 4 would mean the strategy was used by majority of participants in processing trauma. The strategies included cognitive alteration, avoidance response, arousal response and intrusion response. Within the first month of experiencing trauma these strategies are normal but if they persist for over one month beyond the recommended threshold, the survivor is considered to have

developed Posttraumatic Stress Disorder (PTSD), which will require specialized attention. The initial trauma processing strategies reported by the survivors are shown in figure 5.

According to Maercker and Zoellner (2006) Janus two component theory conceptualizes trauma in terms of constructive and illusionary side. The illusionary side is a cognitive and deceptive side perceived as a defense mechanism. It is an avoidance strategy that begins shortly after exposure to the traumatic event and can have disastrous psychological effect in the long run. The illusionary strategy is not necessarily unhealthy as it may act as a temporary buffer against the effects of the traumatic event. The four initial trauma processing strategies explored by the current study are temporary strategies used to buffer against the dangers of trauma.

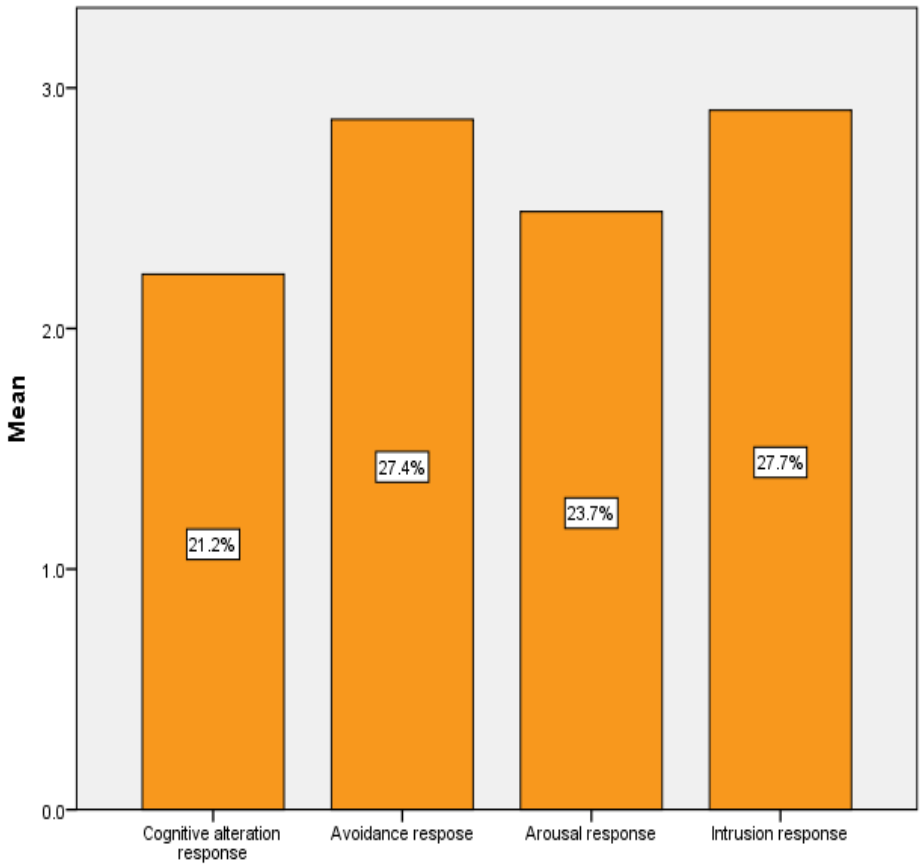

Figure 2. Initial trauma processing strategies

The most prevalent trauma processing strategy employed by the participants was intrusion response with a mean of 2.907 with followed by avoidance response with a mean of 2.869. The least prevalent strategies were cognitive alteration response with a mean of 2.226 followed by arousal response with a mean of 2.485. With the lowest possible mean being 0 and the highest possible one being 4, the findings indicate that all the four initial trauma processing strategies were used by the survivors above average.

The findings are consistent with Nyagaya, Chepchieng, Njonge and Ombura (2014) who reported slightly closer means on avoidance symptoms (mean=2.31), Intrusive symptoms (mean= 2.28) and arousal symptoms (mean= 1.86). The study examined secondary stress among psychotherapists in Nairobi and Nakuru counties of Kenya and used a sample of 302 Psychotherapists drawn from the Kenya Counseling Association. Just like the current study, findings in this sample reflect higher levels of avoidance and intrusive symptoms. In another study conducted by Gomez and Dana (2008) using a sample of 67 emergency nurses from three general community hospitals, arousal symptoms were reported to have high prevalence (54%) followed by avoidance symptoms (52%) with the least prevalent being intrusion (46%). The study explored the prevalence of secondary traumatic stress among emergency nurses.

Contrary to the current study, the two studies focused on populations that underwent secondary trauma. The studies also concentrated on three initial trauma response strategies avoidance, arousal and intrusion with none investigating cognitive alteration. The current study focused on a population that had been exposed to primary trauma the assessment including cognitive alteration as a response to trauma. The general trend from the studies show that avoidance and intrusion strategies of initial trauma response are more prevalent among

traumatized populations of diverse traumatic events. The findings tend to converge despite the differences in the population and locale used in the studies.

Hypothesis Testing

This study examined the relationship between initial trauma processing strategies and posttraumatic growth using Pearson correlation analysis. The initial trauma processing strategies Cognitive alteration response, Avoidance response, Arousal response and Intrusion response were examined in relation to total posttraumatic growth. The study hypothesized that, 'There was no significant relationship between initial trauma processing strategies and posttraumatic growth of Garissa University terror survivors. Pearson correlation analysis was computed and Table 20 shows the correlation coefficients.

Table 20

Pearson Correlation Analysis of Initial Trauma Processing Strategies and Posttraumatic Growth

		Relating to others	**New possibilities**	**Personal strength**	**Appreciation of life**	**Spiritual change**	**Total posttraumatic growth**
Cognitive alteration response	r	.072	.122	.057	.238	.034	.144
	sig	.315	.091	.428	.001	.641	.045
Avoidance response	r	.035	.022	.005	.118	.017	.055
	sig	.627	.761	.949	.102	.810	.444
Arousal response	r	.190	.218	.158	.325	.050	.262
	sig	.008	.002	.028	.000	.485	.000
Intrusion response	r	.269	.216	.125	.395	.168	.322
	sig	.000	.003	.082	.000	.019	.000
	N	**194**	**194**	**194**	**194**	**194**	**194**

The study found weak positive and statistically significant correlation between Intrusion response and all the 5 scales of posttraumatic growth namely relating to others ($p<0.05$; $r=0.269$), new possibilities ($p<0.05$; $r=0.216$), appreciation of life ($p<0.05$; $r=0.395$), spiritual change ($p<0.05$; $r=0.168$) and total posttraumatic growth ($p<0.05$; $r=0.322$). This implies that an increase in intrusion response led to a corresponding increase in posttraumatic growth on all domains.

The study also found weak positive and statistically significant correlation between arousal response and all the 5 scales of posttraumatic growth namely relating to others ($p<0.05$; $r=0.19$), new possibilities ($p<0.05$; $r=0.218$), personal strength ($p<0.05$; $r=0.1581$), appreciation of life ($p<0.05$; $r=0.325$) and total posttraumatic growth ($p<0.05$; $r= 0.262$). This implies that an increase in arousal response led to an increase in posttraumatic growth of Garissa University terrorist attack survivors.

The findings showed weak positive statistically insignificant correlation between cognitive alteration response and 4 scales of posttraumatic growth namely relating to others ($p>0.05$; $r=0.072$), new possibilities ($p>0.05$; $r=0.122$), personal strength ($p>0.05$; $r=0.057$) and spiritual change ($p>0.05$; $r=0.034$). However cognitive alteration was found to have weak positive statistically significantly correlation with appreciation of life ($p<0.05$; $r=0.238$) and total posttraumatic growth ($p<0.05$; $r=0.045$). This implies that an increase in cognitive alteration led to an increase in appreciation of life and total posttraumatic growth among survivors of Garissa University terrorist attack. For the four scales relating to others, new possibilities, personal strength and spiritual change the correlation was as a result of chance and could therefore not be used in making conclusions about the relationship.

The results showed weak positive statistically insignificant correlation between avoidance response with all the 6 posttraumatic growth scales namely relating to others ($p > 0.05$; $r=0.35$), new possibilities ($p>0.05$; $r=0.22$), appreciation of life ($p>0.05$; $r= 0.118$), spiritual change ($p > 0.05$; $r=0.017$), personal strength ($p>0.05$; $r=0.005$) and total posttraumatic growth ($p>0.05$; $r= 0.055$). This implies that the correlations were as a result of chance and could therefore not be relied on to make inferences on the relationship.

As shown in Table 20, there was weak positive and statistically significant correlation between arousal response, intrusion response and all 5 scales of posttraumatic growth. However, for cognitive alteration response and avoidance response no statistically significant correlation was found. We therefore reject the null hypothesis and adopt the alternative hypothesis (for intrusion and arousal response). We conclude that there is statistically significant weak positive relationship between initial trauma processing strategies and posttraumatic growth among Garissa University terror attack survivors. For cognitive alteration and avoidance response, fail to reject the null hypothesis and conclude that there is no statistically significant relationship between initial trauma processing strategies and posttraumatic growth. For counseling practitioners it would imply that special attention should be given to clients who exhibit more of cognitive alteration and avoidance strategies as these strategies do not predict significant posttraumatic growth.

A similar study in Israel by Dmitry, Mooli and Nira (2013) using a sample of 65 fire fighters found significant correlation between the Intrusion, avoidance and hyperarousal on the total posttraumatic growth score. In this study intrusion was significantly higher than avoidance and hyperarousal. Appreciation of life and personal strength were on the other hand higher than the other PTG dimensions. A study on the survivors of Sichuan earthquake in

China one year later found significant positive predictive correlation between intrusion and hyperarousal and posttraumatic growth (Xu & Liao, 2011).

The findings are replicated by the current study which found significant correlation between arousal and intrusion and posttraumatic growth. This could be as a result of the similar populations under study which comprises of survivors who had experienced primary trauma of high magnitude. The low correlation between avoidance and posttraumatic growth appears to be consistent across the reviewed studies which warrant further research to explore the reasons behind this. For cognitive alteration the reviewed studies have not explored it at all which makes the current study among the maiden studies to examine the construct in relation to posttraumatic growth. The merging pattern on this construct in the current study may therefore be a base for future trauma scholarly debate.

4.6 Posttraumatic Growth Indicators among the Garissa University Terrorist Attack Survivors

Research question three sought to explore the participants' subjective and objective experience of posttraumatic growth. The exploration was done using both quantitative and qualitative tools. Participants were given the self-administered Posttraumatic Growth Inventory (PTGI) which measures posttraumatic growth on five domains: relating with others, new possibilities, personal strength, appreciation of life and spiritual change. The Inventory also has an additional scale that shows the total posttraumatic growth, which is the sum of all the domains. The domain scores were obtained by computing the means. The lowest possible score was 0 while the highest possible score was 5. Participants were required to rate how they experienced each of the 21 items after the Garissa University terrorist attack. Qualitative data were captured through in depth interviews where participants were asked to describe the

various positive transformations they had undergone as a result of their experience with the terrorist attack.

Table 21

Posttraumatic Growth Levels of Garissa University Terrorist Attack Survivors

Descriptive Statistics	N	Minimum	Maximum	Mean	Std Deviation
Relating to others	194	1.7	5.0	3.828	.7310
New possibilities	194	1.2	5.0	3.699	.8278
Personal strength	194	1.3	5.0	3.789	.8962
Appreciation of life	194	1.0	5.0	3.611	.9491
Spiritual change	194	0.0	5.0	4.000	1.1081
Total posttraumatic growth	194	35.0	105.0	79.103	13.9023

The highest growth was recorded on the spiritual domain (mean=4.00; standard deviation=1.10), followed by relating to others (mean=3.83; standard deviation=0.73), personal strength (mean=3.79; standard deviation=0.90), new possibilities (mean=3.70; standard deviation=0.83) with the least growth recorded on appreciation of life (mean=3.61; standard deviation=0.95). 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. 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 themes were quantified as shown in Figure 3. The results show the posttraumatic growth indicators for the survivors of Garissa University terrorist attack.

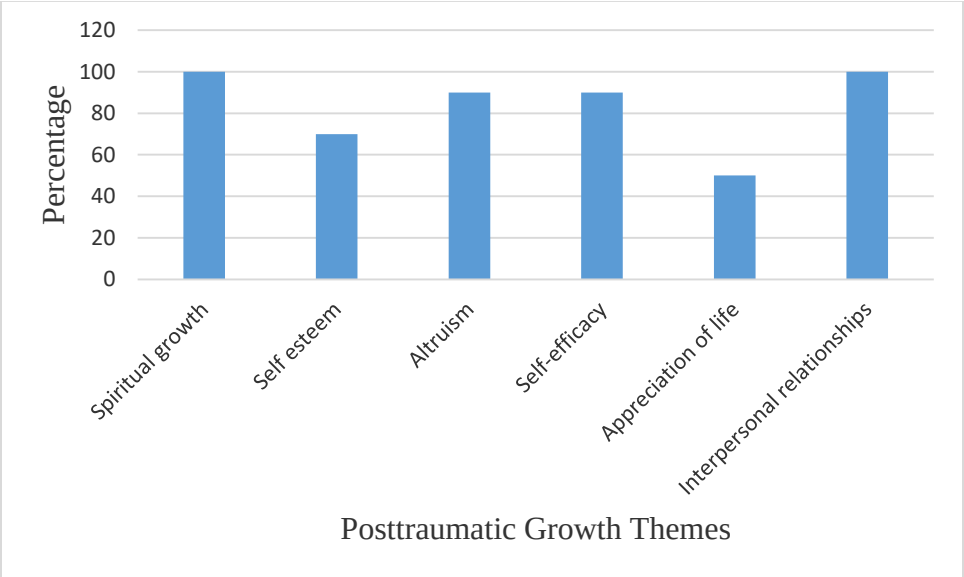

Figure 3. Posttraumatic growth themes

Majority of participants (100%) reported positive transformation in terms of spiritual growth and interpersonal relationships followed by altruisms and self-efficacy (90%), improved self-esteem (70%) and appreciation of life (50%).

A sample of ten parents to the interviewed survivors was recruited through automatic inclusion. Interviews were conducted through telephone with the aim of generating corroborative data on the posttraumatic growth dimensions reported by the survivors. 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 responses were coded, categorized and themes extracted. Three themes emerged from response of the survivors' parents namely spiritual change, interpersonal relationships and altruism

4.6.1 Spiritual Growth

In the current study spiritual change reported the greatest growth yet it was the least area of growth in both the American and Japanese samples (Taku, 2013). Mardani, Alipour, Qaderi and Sabzi (2017) reported similar findings on earthquake survivors in East Azerbaijan. The scores included relating to others 2.22, new possibilities 2.32, personal strength 2.29, spiritual change 2.24, appreciation of life 2.45 and total posttraumatic growth 48. The current study stands out with the highest posttraumatic growth levels in comparison to the reviewed studies that represent different cultures and diverse traumatic events. For instance the total posttraumatic growth of 79 in the current study is far much higher than the reviewed studies which had scores of 45, 48 and 39. It can therefore be concluded that the trauma survivors in the current study recorded higher posttraumatic growth on all the domains above other global traumatized populations.

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, March 1, 2018)

Another participant reported,

> I used to hear about God before the attack but now I own 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, Feb March 1, 2018)

Participants who were already committed to the teaching 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, March 1, 2018).

There were other participants who got restructuring of their faith in God. God was not seen as a distance 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, March 1, 2018).

Spiritual growth has widely been reported among many other trauma survivors across the world. Kryger and Lindren (2011) investigated posttraumatic growth among former child soldiers of the Lord's Resistance Army 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, McIntosh, Calhoun, Jordan, Carter and Bell (2017) on the survivors of Canterbury earthquake series. The findings showed that 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. These studies were supported by findings from interview of survivors' parents. All parents interviewed affirmed the spiritual growth reported by the survivors. They reported to have noticed increased participation of their sons and 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, March 1, 2018). 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, March 2, 2018).

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.

Spiritual growth in the current study corresponded to the spiritual change of PTGI. The researcher attributed the improvement in relating with God among trauma survivors to the bargaining process of getting assurance for future protection from similar threats. Bargaining for protection in the face of adversity is a two way process that calls for obedience to the teachings of the religion professed by the survivors as a way of reciprocating to God. Contrary findings were reported by Taku (2013) which showed spiritual growth as the least posttraumatic growth dimension among Japanese and American sample. However the findings of Kryger & Lindgren (2011) indicated greater spiritual growth among trauma survivors.

4.6.2 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. 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 arise they are sorted out before escalation. One participant reported,

> 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, March 1, 2018).

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, March 1, 2018).

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 prefer 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, March 1, 2018).

Improvement in interpersonal skills corresponds to relating with others reported by survivors of traumatic events from the posttraumatic growth inventory. This is what Kryger and Lindren (2011) identified as social support where participants emphasized on the caring family, close friends effort in relationships and the need for acceptance. Smith, McIntosh, Calhoun, Jordan, Carter and Bell (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) 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 and 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.

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, 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 reported,

> 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, March 1, 2018,).

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, Feb27, 2018). The findings of the current study were similar to others global studies which reported improved interpersonal relationships (Hungerbuehler, Vollrath, and Landolt 2011; Calhoun, Tedeschi, Cann, & Hanks, 2010).

4.6.3 Personal Strength

In this study personal strength recorded 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, March 1, 2018).

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 and Pyszczynki (2012), TMT holds the view that self-esteem is attained by living according to the standards proposed by one's world view. The experience of traumatic events shutters peoples' world view hence their self-esteem. Improvement in self-esteem after adversity is therefore an attempt by individuals to reclaim their shuttered world view and buffer against mortality salience. 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, March 1, 2018)

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, March 1, 2018). The findings of Smith, McIntosh, Calhoun, Jordan, Carter and Bell (2017) identified this 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 and 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.

4.6.4 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 way 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, March 1, 2018).

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 are less stressful since their minds are more occupied by the positive things and achievements they have 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 is 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, March 1, 2018).

> 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.

The findings of Smith, McIntosh, Calhoun, Jordan, Carter and Bell (2017) identified this theme as appreciating the present more. Participants reported focusing more on counting their blessings, appreciating others and living each day fully after the trauma experience.

4.6.5 Altruism

Interview data revealed development of altruistic behaviour 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 have 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, March 1, 2018).

Development of altruistic behaviour 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 behaviour 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 behaviour 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 been 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, March 5, 2018).

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, March 1, 2018). 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, March 1, 2018).

The researcher did not relate altruism with any of the existing posttraumatic growth domains and treated it as a new theme in posttraumatic growth. In the findings of Smith, McIntosh, Calhoun, Jordan, Carter and Bell (2017) greater sense of community was identified as a theme that was independent from the five existing posttraumatic growth domains. Participants had reported feeling more indebted to the community and welfare of others.

Altruism in the current study is similar to Thrasher (2013) findings on pride among US servicemen from the Iraqi war. This was described as being able to serve others and depend on them. It was also exhibited by strong attachment towards one's choices and actions after encounter with adversity. The current 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 trauma survivors in the reviewed studies to their communal consciousness after adversity. The convergence of various studies on the presence of several similar themes that are not within the five domains of posttraumatic growth indicate that PTG should not be limited to the five domain model but more studies need to be done to explore more possible areas of growth after adversity.

On the five dimensions of posttraumatic growth, only three were reported by the parents interviewed. The three domains are 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 behaviour and interpersonal relationships is easier, hence the few reported dimensions of posttraumatic growth as reported by the parents.

The rationale of collecting similar data on posttraumatic growth from parents and students using different tools was meant to address the weaknesses of the widely used PTGI. Some scholars have raised concern for overreliance on one tool to collect posttraumatic growth data since some survivors may report positive outcome even when it is absent (Frazier, Coyne & Tennen, 2014; Jayawickreme & Blackie, 2014).

From the findings the current study has shown the replication of posttraumatic growth domains even when tools of data collection change to interview guides. From the themes generated by the interviews, four posttraumatic growth domains namely, relating to others, personal strength, spiritual change and appreciation of life were replicated by the current study and other studies across the world. This shows that PTG is a phenomenon that cuts across many cultures. From the themes reported by student participants, the domain of new possibilities was not revealed from interviews but only through the PTGI scores. This variation could be as a result of the complimentary role of the quantitative and qualitative tools used. It is possible that the PTGI could have been designed to capture certain aspects of the phenomenon that interviews alone could not reveal.

Interviews with parents revealed three of the posttraumatic growth domains only namely altruism, interpersonal relationships and spiritual change. This varies from what the interviewed survivors revealed. The difference could be as a result of the covert nature of these factors. Given that the parents were reporting on the changes noticed in their children after experience of the terror attack, some changes like personal strength and new possibilities were

intrinsic and could not be observed by others. New possibilities was not reported by parents who were reporting on the changes that survivors exhibited. This could be one of the domains conceptualized by the current study as covert which could have made it impossible for parents to observe. The new themes reported by the current study indicate that the widely accepted five domains of posttraumatic growth are not exhaustive and research tools and methods in this area need to be diversified in order to reveal more unexplored areas of posttraumatic growth.

Even though posttraumatic growth is a relatively new concept, studies have been done in different parts of the world with evidence of five dimensions being replicated in many studies. A study by Dmitry, Mooli and Nira (2013) on Israeli fire fighters reported posttraumatic growth on the five domains with means below the 2.5 except for personal strength domain. The means included relating to others 1.64, new possibilities 1.62, personal strength 2.32, spiritual change 1.75 and appreciation of life. In another study comparing posttraumatic growth levels in American and Japanese men Taku (2013) reported the following posttraumatic means for the American sample: relating to others 2.09, new possibilities 2.02, personal strength 2.56, spiritual change 1.57, appreciation of life 2.68 and total posttraumatic growth 45. The Japanese sample reported growth of 2.16 on relating with others, new possibilities 2.13, personal strength 1.43, spiritual change 0.79, appreciation of life 2.07 and total posttraumatic growth 39. In the Israeli sample personal strength had the highest growth, while in the American and Japanese samples the highest domains were appreciation of life and relating to others respectively.

4.7 Demographic Differences in Posttraumatic Growth Levels of the Garissa University Terrorist Attack Survivors

The study sought to examine the demographic differences in posttraumatic growth in terms of gender, age, marital status and religious affiliation of participants. Participants filled the posttraumatic growth inventory after which means were computed and analyzed in relation to the demographic factors of the participants. The findings were presented in Table 22 below.

Table 22

Demographic Differences in Posttraumatic Growth

		Relating to Others	**New Possibilities**	**Personal Strength**	**Appreciation of Life**	**Spiritual Change**	**Total Posttraumatic Growth**
Gender of Participants	Male	3.77	3.66	3.75	3.55	3.83	77.80
	Female	3.90	3.75	3.84	3.70	4.22	80.81
Age group of Participants	19-22	3.96	3.60	3.90	3.77	4.22	80.88
	23-26	3.80	3.68	3.77	3.59	3.95	78.53
	27-30	4.01	4.01	3.90	3.62	4.29	82.88
Religion of Participants	Protestant	3.84	3.67	3.75	3.66	3.94	78.96
	Catholic	3.86	3.72	3.81	3.47	4.15	79.22
	Muslim	3.33	3.46	3.57	3.29	3.36	71.14
	Others	3.88	3.95	4.06	3.88	4.15	82.94
Marital Status	Single	3.79	3.70	3.79	3.62	3.96	78.79
	Married	3.98	3.71	3.77	3.58	4.17	80.33

4.7.1 Gender of Participants and Posttraumatic Growth

The findings indicated that females reported higher posttraumatic growth on all the scales as compared to males. On relating to others female reported growth with mean 3.90 and standard deviation 0.68 while male reported growth with mean 3.77 and standard deviation 0.76. For new possibilities females recorded growth with mean 3.75 and standard deviation 0.72 while the male reported growth of mean 3.66 and standard deviation 0.90. On personal strength female reported growth of mean 3.84 and standard deviation 0.86 while the male reported growth of mean 3.75 and standard deviation 0.92. On appreciation of life females reported growth of mean 3.70 and standard deviation 0.91 while males reported growth mean 3.54 with standard deviation of 0.98. On spiritual change females reported growth of mean 4.22 and standard deviation 0.99 while the males reported 3.83 growth and standard deviation1.77. On total posttraumatic growth females reported growth of 80.81 with standard deviation 11. 75 while the males reported growth of 77.8 with standard deviation 15.25.The results indicated that posttraumatic growth was greater among the female participants as compared to the males.

Similar findings were reported by Koutana, Jelinek, Blatny and Kepak (2017) who found significant gender differences in PTG with female participants reporting higher posttraumatic growth than male participants in a sample of 97 participants. Unlike the current study which collected data from the participants at once, this study used longitudinal research design where data was collected from same participants at different ages. Tanya, Cann, Calhoun, Tedeschi and Demakis (2010) analyzed 70 studies (N=16076) and reported a moderate gender difference in self-reported posttraumatic growth with women reporting higher PTG than men.

Even though most studies have reported higher PTG among women as compared to men, there were other studies that reported higher PTG in men (Jin, Xu, Liu & Liu, 2014; Andrien & Naggy, 2011). The study reported gender differences in PTG with men scoring higher than women. The studies were conducted among the Chinese earth quake survivors and Somali refugees respectively. The inconsistencies in the findings, despite using the same data collection instrument, could be an indication of cultural differences or other biases in the population used. Andrien and Naggy (2011) used 44 men and 9 women and ended up reporting more PTG in men than women. This disparity in the gender representation in the sample could have skewed the results in favor of men. The population from which the sample was chosen is also known to follow Muslim tradition where the society is highly patriarchal.

4.7.2 Age of Participants and Posttraumatic Growth

The study sought to examine age differences in posttraumatic growth for the domains: relating to others, new possibilities, personal strength, appreciation of life and spiritual change. Posttraumatic growth was measured by computing the domain means from the Posttraumatic Growth Inventory. The findings show minor differences in posttraumatic growth across the age groups of the participants. On spiritual growth participants in age group 19-22 years reported growth of mean 4.2 with age group 23-26years reporting growth of mean 3.9 while age group 27-30 years reported growth of mean 4.3. On relating with others, age group 19-22 years and 27-30 years both reported a mean growth of 4.0 while age group 23-26 years recorded mean growth of 3.8. On personal strength age group 19-22 years and 27-30 years both reported mean growth of 3.9 while age group 23-26 years reported mean growth of 3.8. The results show that posttraumatic growth for relating to others, spiritual change and personal strength was highest in the youngest and oldest participants and lowest among the participants

aged 23 to 26 indicating a curvilinear kind of relationship. Growth on new possibilities was lowest among the youngest participants and highest among the older participants. For appreciation of life greater growth was experienced by the youngest participants with the older participants recording the lowest growth.

Similar results were reported by Tremolada, Bonichini, Basso, and Pillon (2016) who found negative correlation between age and PTG. The study showed 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).These findings show greater posttraumatic growth among the younger participants as compared to the older ones. This could be explained by the plasticity of younger participants where change is more viable than in older people.

Contrary results were reported by Koutana, Jelinek, Blatny and Kepak (2017) who found positive relationship between age and posttraumatic growth. The study reported higher PTG among adolescents than younger children. Ullman (2014) indicated that older age, higher education and ethnic minority were significantly related to higher posttraumatic growth. Even though younger age could imply plasticity, there could be an age at which certain cognitive skills to process trauma are required. This could explain the change in pattern of posttraumatic growth where older participants reported higher growth as compared to the younger ones. However there is need for more studies to be done in order to specify the optimum age below which posttraumatic growth may not occur. The other studies could also be reporting different results from the current one because of the differences in the characteristic of the populations

used in the studies. For instance the sample for the current study fell between age 19 and 30 years while the other studies have bigger age range.

4.7.3 Religious Affiliation of Participants and Posttraumatic Growth

The study sought to examine the mean differences in posttraumatic growth domains in relation to religious affiliation of the participants. The findings show that posttraumatic growth was highest among participants of other religious affiliation (relating to others= 3.88, new possibilities= 3.95, personal strength= 4.05, appreciation of life=3.88 and spiritual change= 4.15) followed by Catholic participants (relating to others= 3.86, new possibilities= 3.72, personal strength= 3.81, appreciation of life=3.47 and spiritual change=4.15). Posttraumatic growth among Protestants was slightly lower than that of Catholics (relating to others=3.83, new possibilities= 3.67, personal strength=3.75, appreciation of life= 3.67 and spiritual change= 3.94. The lowest posttraumatic growth means on all domains was recorded by the Muslim participants (relating to others= 3.33, new possibilities= 3.46, personal strength=3.57, appreciation of life= 3.29 and spiritual change= 3.36). Total posttraumatic growth was highest among participants of other religious affiliations followed by Catholic participants, Protestant participants and the least was experienced by the Muslim participants.

Posttraumatic growth is not a new concept to various religions across the world. According to Tedeschi and Calhoun (1996), different religious hold the view that suffering makes one stronger. This is a view that has been justified by several studies on posttraumatic growth. This was also confirmed by the current study where participants from various religions reported posttraumatic growth means above average. The findings of Joseph, and Linley (2005) associated positive religious coping, religious openness and readiness to face existential questions, religious participation, and intrinsic religiousness with PTG. The positive

correlation between religion and posttraumatic growth appears to be consistent in PTG literature with varying justification.

The findings of Guse and Hudson (2014) showed that religion and chaplaincy provided important answers to complicated existential questions among offenders. This helped in creating new meaning hence facilitating posttraumatic growth. The answers to difficult existential questions and development of meaning after adversity facilitated by religion could be viewed as a process of reconstructing the shuttered world view of the survivors. From the PTG literature, attempt to relate religion to posttraumatic growth has been done extensively. However there appears to be no attempt to compare posttraumatic growth in terms of the various religious affiliations of participants. Examining religion as a compound factor affecting PTG while ignoring the numerous differences in each of the religious affiliations could conceal significant information. The current study deviated from the general approach of other studies by analyzing each of the various religious affiliations as separate variables. The findings showed that participants from each of the religious affiliations experienced posttraumatic growth differently, which warrants the need for further research.

4.7.4 Marital Status of Participants and Posttraumatic Growth

The study sought to examine the mean differences in posttraumatic growth domains relating to others, new possibilities, personal strength, appreciation of life and spiritual change in terms of marital status of the participants. Posttraumatic growth was measured by computing the domain means from the Posttraumatic Growth Inventory. The study sought to explore the mean differences in posttraumatic growth according to the marital status of participants. The findings indicate that both the married and single participants reported same posttraumatic growth on new possibilities (mean=3.7), personal strength (mean=3.8) and appreciation of life

(mean=3.6). On relating to others the single reported slightly lower posttraumatic growth (mean=3.8) compared to the married who reported a growth of mean 4.0. The married also reported higher mean on spiritual change (mean=4.2) as compared to the single who had a mean of 4.0. The findings show a general trend where spiritual change and relating to others were greater among the married participants as compared to the single ones. On the other hand personal strength and appreciation of life was greater among the single as compared to the married. Growth on new possibilities was equally experienced by both the single and married participants. Total posttraumatic growth was slightly higher in the married than the single participants.

In a study carried out by Augustine (2014) in which a sample of 301 tsunami survivors was tested for posttraumatic growth, family type and family communication were found to be significant predictors of PTG. Similar findings were also reported by Joseph (2011) who argues that supportive network or even an encounter with a single person propelled people to continue searching for meaning which could enhance posttraumatic growth. From the current study the married participants reported higher growth on the spiritual domain, relating with others, and total posttraumatic growth compared to the unmarried participants. These domains require outward expression and the presence of social support avenues could create an enabling environment for growth. With the married participants having an expended social support environment, growth on these domains would therefore be expected to be higher than that of the unmarried. On the other hand the unmarried participants reported higher growth on personal strength and appreciation of life which are more intrinsic and do not require much of external support to develop.

Contrary findings were reported by Akbarpor, Farahani, Rasouli and Jambarsang (2015) among spinal cord injury patients where no significant PTG differences were found between the married and unmarried participants. Considering the age range of the population in the current study, the married participants seem to be within their first five years of marriage. The slight difference PTG scores of the married and single participants could be as a result of the duration of the marital relationship duration. It could be expected that the longer one had been in marriage relationship, the higher the quality of social support and PTG.

4.7.5 Hypothesis Testing

The study hypothesized that there were significant demographic differences in posttraumatic growth among survivors of Garissa University terrorist attack. This hypothesis was tested using one way ANOVA and independent T- test. The findings are shown in Tables 17, 18, 19 and 20.

4.7.5.1 Age Differences in Posttraumatic Growth

Age differences in posttraumatic growth were tested using one way ANOVA. The results are shown in Table 23 below.

Table 23

Age Differences in Posttraumatic Growth

		Sum of Squares	df	Mean Square	F	Sig.
New Possibilities	Between Groups	1.907	2	.953	1.397	.250
	Within Groups	130.353	191	.682		
	Total	132.260	193			
Personal Strength	Between Groups	.484	2	.242	.299	.742
	Within Groups	154.517	191	.809		
	Total	155.002	193			
Appreciation of Life	Between Groups	.426	2	.213	.235	.791
	Within Groups	173.441	191	.908		
	Total	173.867	193			
Spiritual Change	Between Groups	2.685	2	1.342	1.094	.337
	Within Groups	234.315	191	1.227		
	Total	237.000	193			
Total Posttraumatic Growth	Between Groups	346.299	2	173.150	.895	.410
	Within Groups	36955.639	191	193.485		
	Total	37301.938	193			

The study found no statistically significant group differences between age and new possibilities (p= 0.25), personal strength (p= 0.742), appreciation of life (p=0.791), spiritual change (p= 0.337) and posttraumatic growth (p= 0.41) of the Garissa University terrorist attack survivors.

4.7.5.2 Gender Differences in Posttraumatic Growth

The study sought to determine gender differences in posttraumatic growth. The independent sample t test was used to assess the differences. The results are shown in Table 24 below.

Table 24

Gender Differences in Posttraumatic Growth

	Gender of participant	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
New possibilities	Male	110	3.658	.9007	.0859
	Female	84	3.752	.7232	.0789
Personal Strength	Male	110	3.748	.9245	.0881
	Female	84	3.841	.8604	.0939
Appreciation of life	Male	110	3.545	.9804	.0935
	Female	84	3.696	.9052	.0988
Spiritual change	Male	110	3.832	1.1658	.1112
	Female	84	4.220	.9920	.1082
Total posttraumatic	Male	110	77.800	15.2675	1.4557
growth	Female	84	80.810	11.7519	1.2822

		Levene's Test for Equality of Variances		t-test for Equality of Means					
								95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
New Possibilities	Equal variances assumed	2.415	.122	-.785	192	**.434**	-.0942	-.3310	.1426
	Equal variances not assumed			-.808	191.494	.420	-.0942	-.3242	.1358
Personal Strength	Equal variances assumed	1.537	.217	-.714	192	**.476**	-.0928	-.3492	.1637
	Equal variances not assumed			-.721	184.604	.472	-.0928	-.3468	.1613
Appreciation of Life	Equal variances assumed	.234	.629	-1.098	192	**.273**	-.1510	-.4221	.1201
	Equal variances not assumed			-1.110	185.164	.268	-.1510	-.4193	.1173
Spiritual Change	Equal variances assumed	6.801	.010	-2.450	192	.015	-.3884	-.7011	-.0757
	Equal variances not assumed			-2.504	189.712	**.013**	-.3884	-.6945	-.0824
Total Posttraumatic Growth	Equal variances assumed	7.692	.006	-1.499	192	.136	-3.0095	-6.9700	.9510
	Equal variances not assumed			-1.551	191.983	**.122**	-3.0095	-6.8358	.8167

The study found statistically significant gender differences in spiritual change for female (Mean= 4.22; SD= 0.99) and male (Mean= 3.33; SD= 1.17) conditions t (192) = 2.45 $p < 0.05$). No statistically significant gender differences were found in new possibilities, personal strength, interpersonal relationships, appreciation of life and total posttraumatic growth ($p > 0.05$) of the Garissa University terrorist attack survivors.

4.7.5.3 Marital Status Differences in Posttraumatic Growth

The study sought to determine gender differences in posttraumatic growth. The independent sample t test was used to assess the differences. The results are shown in Table 25 below.

Table 25

Marital Status Differences in Posttraumatic Growth

	Marital status	N	Mean	Std. Deviation	Std. Error Mean
New possibilities	Single	155	3.697	.8222	.0660
	Married	39	3.708	.8607	.1378
Personal strength	Single	155	3.794	.8975	.0721
	Married	39	3.769	.9021	.1444
Appreciation of life	Single	155	3.619	.9663	.0776
	Married	39	3.577	.8888	.1423
Spiritual change	Single	155	3.958	1.1019	.0885
	Married	39	4.167	1.1317	.1812
Total posttraumatic growth	Single	155	78.794	14.0124	1.1255
	Married	39	80.333	13.5634	2.1719

		Levene's Test for Equality of Variances		t-test for Equality of Means					
								95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
New possibilities	Equal variances assumed	.061	.806	-.073	192	**.942**	-.0109	-.3042	.2823
	Equal variances not assumed			-.071	56.718	.943	-.0109	-.3170	.2951
Personal Strength	Equal variances assumed	.101	.751	.151	192	**.880**	.0243	-.2931	.3418
	Equal variances not assumed			.151	58.394	.881	.0243	-.2988	.3474
Appreciation of life	Equal variances assumed	.425	.515	.249	192	**.804**	.0424	-.2938	.3786
	Equal variances not assumed			.262	62.597	.794	.0424	-.2816	.3664
Spiritual change	Equal variances assumed	.018	.893	-1.051	192	**.295**	-.2086	-.6001	.1828
	Equal variances not assumed			-1.034	57.484	.305	-.2086	-.6124	.1952
Total posttraumatic growth	Equal variances assumed	1.199	.275	-.617	192	**.538**	-1.5398	-6.4600	3.3804
	Equal variances not assumed			-.629	60.081	.531	-1.5398	-6.4327	3.3532

The study found no statistically significant marital status mean differences in all the posttraumatic growth domains of Garissa University terrorist attack survivors ($p>0.05$).

4.7.5.4 Religious Affiliation Differences in Posttraumatic Growth

The study sought to determine religious affiliation differences in posttraumatic growth. The one way ANOVA was used to assess the differences. The results are shown in Table 26 below.

Table 26

Religious Affiliation Differences in Posttraumatic Growth

		Sum of Squares	df	Mean Square	F	Sig.
New possibilities	Between Groups	1.646	3	.549	.798	.496
	Within Groups	130.613	190	.687		
	Total	132.260	193			
Personal strength	Between Groups	1.766	3	.589	.730	.535
	Within Groups	153.236	190	.807		
	Total	155.002	193			
Appreciation of life	Between Groups	3.356	3	1.119	1.246	.294
	Within Groups	170.512	190	.897		
	Total	173.867	193			
Spiritual change	Between Groups	4.883	3	1.628	1.332	.265
	Within Groups	232.117	190	1.222		
	Total	237.000	193			
Total posttraumatic growth	Between Groups	697.277	3	232.426	1.206	.309
	Within Groups	36604.661	190	192.656		
	Total	37301.938	193			

The study found no statistically significant religious affiliation differences in all the posttraumatic growth domains of Garissa University terrorist attack ($p>0.05$). Independent sample t- test and one way ANOVA were used to test the hypothesis as shown in Table 23, 24,

25 and 26. The findings imply that there was generally no statistically significant relationship between demographic factors and posttraumatic growth because the p-value is greater than 0.050 which is equal to standard probability ratio of 0.05. We therefore fail to reject the null hypothesis and conclude that there were no statistically significant demographic differences in posttraumatic growth of Garissa University terrorist survivors. Even though there were slight differences in posttraumatic growth based on demographic factors in the population under study, this could be attributed to chance with no statistically significant differences being established.

This was consistent with the findings of Akbarpor, Farahani, Rasouli and Jambarsang (2015) which found no significant PTG differences between the married and unmarried participants among spinal cord injury survivors. However the findings of Joseph, and Linley (2005) associated positive religious coping, religious openness and readiness to face existential questions, religious participation, and intrinsic religiousness with PTG. 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). The findings of the current study which appeared to conflict and agree with findings from other global studies could be attributed to the similar demographic characteristics shared by the sample in the current study. For example the sample belonged to the same age group, same university, and dominantly belonged to the Christian faith.

4.8 Relationship between Initial Trauma Severity and Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

Initial trauma severity was measured in terms of the DSM-V trauma symptoms. Participants were asked to rate how they experienced each of the trauma symptoms on a scale

of 0 to 4. Total scores were computed with the lowest possible score being 0 and the highest possible score being 72. A low total score 0 to 24 was considered normal as it reflected low prevalence of trauma symptoms. A score of 25 to 49 was considered moderate and 50 to 72 was considered high severity. The persistence of these symptoms beyond one month would expose the trauma survivor to the possibility of developing PTSD. Table 27 shows the various levels of initial trauma severity experienced by the survivors of Garissa University terrorist attack.

Table 27

Initial Trauma Severity

	Percent	**Valid Percent**	**Cumulative Percent**
Low Trauma Severity	4.1	4.1	4.1
Moderate Trauma Severity	54.6	54.6	58.8
High Trauma Severity	41.2	41.2	100.0
Total	**100.0**	**100.0**	

The results indicated that majority of survivors (54.64%) had moderate severity of trauma after the terror attack, 41.24% had high severity of trauma after the attack while 4.12% had low trauma severity after the attack. The results show that majority of the participants were to a large extent severely affected by the terror attack. Trauma severity is an important variable in posttraumatic growth as it contributes a great deal in shuttering survivors' assumptive world whose reconstruction leads to posttraumatic growth (Ferrito, Vetere, Adshead, Moore, 2012). They argue that posttraumatic growth is triggered by the experience of distress and awareness of pain that arises from adversity. The current findings showed that most of the participants

experienced significant distress after the terrorist attack. This necessitated further analysis in terms of demographics and posttraumatic growth levels in order to gain deeper insight in the role of trauma severity in PTG.

4.8.1 Initial Trauma Severity and Posttraumatic Growth

The study sought to explore the variation in posttraumatic growth in relation to initial trauma severity. Posttraumatic growth was measured in terms of the five domains: relating to others, new possibilities, personal strength, appreciation of life and spiritual change. The mean of each domain was computed and compared with the levels of initial trauma severity. Figure 4 shows the variation in posttraumatic growth according to initial trauma severity.

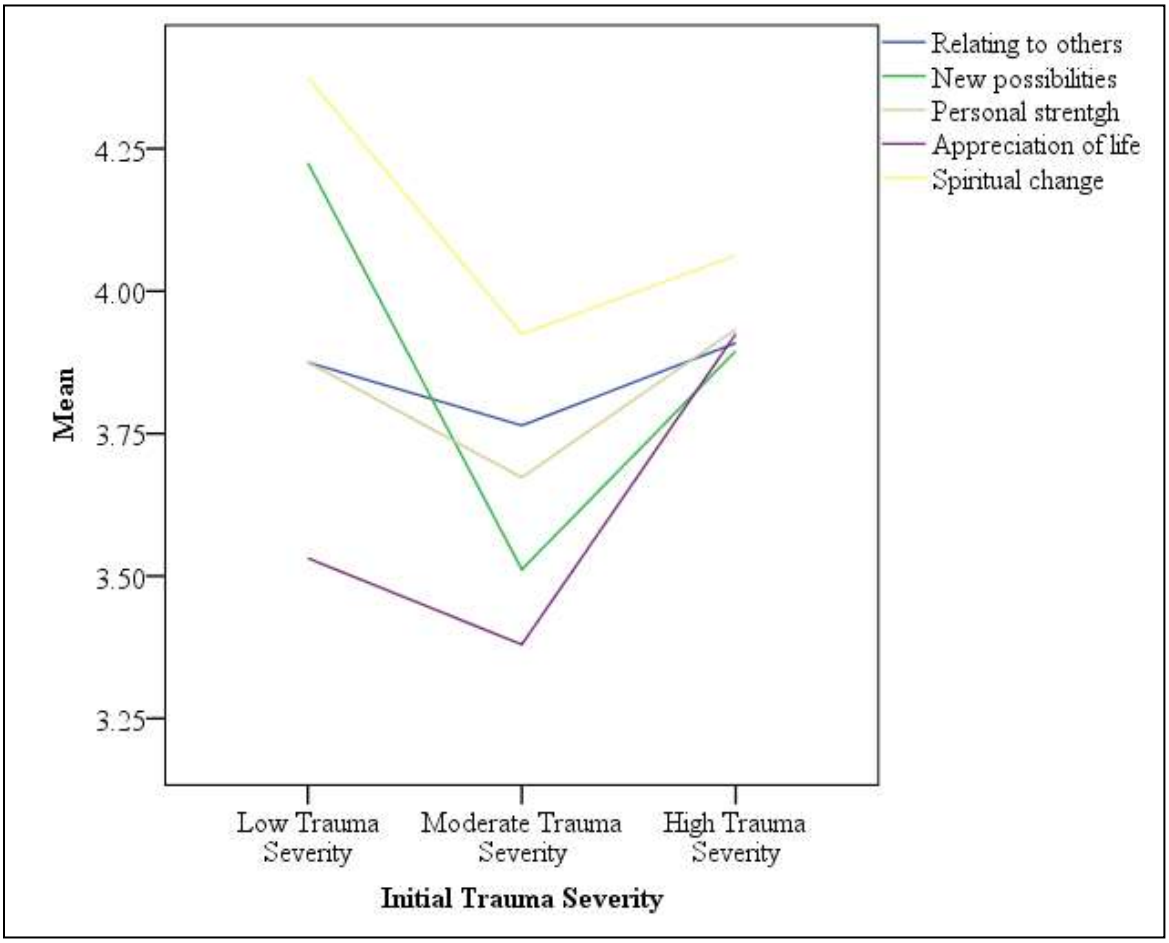

Figure 4. Initial trauma severity and posttraumatic growth

The findings show that posttraumatic growth was experienced differently by participants at various levels of initial trauma severity. Participants who experienced low trauma severity recorded the highest posttraumatic growth mean on the domains of new possibilities (mean=4.23) and spiritual change (mean=4.38). Participants who experienced high initial trauma severity recorded the highest posttraumatic growth mean on the domains relating to others (mean= 3.91), personal strength (mean= 3.93) and appreciation of life (mean=3.93). Participants who experienced moderate trauma severity recorded the lowest posttraumatic growth mean on all the five domains relating to others (mean= 3.76), new possibilities (mean =3.51), personal strength (mean= 3.67), appreciation of life (mean =3.38) and spiritual change (mean=3.93). From these findings the general trend shows posttraumatic growth was experienced to a larger extent among participants with low severity and high severity of trauma with moderate severity recording the lowest posttraumatic growth. This pattern shows a kind of quadratic relationship.

These findings are inconsistent with those of other studies on the relationship between initial trauma severity and posttraumatic growth. Schubert, Schmidt and Rosner (2015) found that trauma survivors with PTSD symptoms exhibited more PTG than those without. The study analyzed 140 studies of which 19 fulfilled the inclusion criteria that required a population that was fully diagnosed with PTSD and concluded that there was a linear relationship between trauma severity and posttraumatic growth. Their study arrived at the conclusion based on secondary data from other studies with survivors of varied traumatic events as opposed to the current study which analyzed primary data from survivors of a common traumatic event experience. The concentration of the study with survivors who had been fully diagnosed with PTSD and those without PTSD symptoms could further explain the variation in findings from

the current study. Relying on these two extremely opposite populations might have left out participants who exhibited moderate trauma symptoms which the current study included in its sample.

Lambert and Lawson (2013) conducted a study to compare PTG levels between those who suffered direct exposure to Hurricane Katrina and the volunteer workers who later offered to help the victims. The study adopted the quantitative approach where professional counselors who provided services to those affected by Hurricanes Katrina and Rita filled the PTGI and Professional Quality of Life Scale. The study found that the counsellors who had direct exposure to this disaster portrayed higher levels of PTG than those who served as volunteers implying a linear relationship between the two constructs. Even though the study used a similar tool with the current study, the PTGI, its assessment of trauma severity seemed to have been based on the level of exposure to the traumatic event. The current study acknowledges that trauma severity may not be measured by the level of exposure only but the individual personal interpretation of participants' experience with this exposure. The current study used a self-report questionnaire based on trauma symptoms listed in the DSM-5 to sasses severity of trauma which might have captured the participants own assessment of severity instead of relying on the researchers perceived trauma severity.

Other studies showed curvilinear relationship between trauma severity and posttraumatic growth of trauma survivors (Karanci, Isikli, Aker, Gul, Erkan, Okzol & Guzel, 2012; Zara & Yilmaz, 2016; Joseph, Murphy & Regel, 2012). These studies show that low trauma severity and high trauma severity were predictors of low posttraumatic growth with moderate trauma predicting high posttraumatic growth. This is directly opposite of the findings of the current study which shows greater posttraumatic growth for both low and high trauma

severity and low posttraumatic growth for moderate trauma severity. Unlike the current study which concentrated on a population with similar demographic characteristics, the earlier studies drew their samples from diverse populations with varying trauma experiences. These could have accounted for the differences in the findings among all these studies.

4.8.2 Hypothesis Testing

The study examined the relationship between initial trauma severity and posttraumatic growth using Pearson correlation analysis. The study hypothesized that, 'There was no significant relationship between initial trauma severity and posttraumatic growth of Garissa University terrorist attack survivors'. The results are presented in Table 28 below.

Table 28

Pearson Correlation Analysis for Initial Trauma Severity and Posttraumatic Growth

		Initial Trauma Severity
Relating to others	R	.190
	Sig. (2-tailed)	.008
New possibilities	R	.199
	Sig. (2-tailed)	.005
Personal strength	R	.121
	Sig. (2-tailed)	.092
Appreciation of life	R	.359
	Sig. (2-tailed)	.000
Spiritual change	R	.087
	Sig. (2-tailed)	.228
Total Posttraumatic growth	R	.265
	Sig. (2-tailed)	.000
	N	**194**

The study found weak, positive and statistically significant correlation between initial trauma severity and relating to others ($r= 0.190$, $p < 0.05$), new possibilities ($r= 0.199$, $p< 0.05$), appreciation of life ($r= 0.359$, $p< 0.05$) and total posttraumatic growth ($r= 0.265$, $p< 0.05$). No statistically significant correlation was found between initial trauma severity and personal strength ($p > 0.05$), and spiritual change ($p> 0.05$). This finding implies that there was a general significant relationship between initial trauma severity and posttraumatic growth because the p-value is less than the standard probability ratio of 0.05. As shown in the correlation analysis in Table 28 an increase in initial trauma severity resulted to an increase in posttraumatic growth domains relating to others, new possibilities, appreciation of life and total posttraumatic growth. This means that independent variable was significant in explaining the variation in the dependent variable. We therefore reject the null hypothesis and adopt the alternative hypothesis. We therefore conclude that there is statistically significant weak positive relationship between initial trauma severity and posttraumatic growth of Garissa University terrorist attack survivors.

The findings agree with those of Lambert and Lawson (2013) who found that those who had direct exposure to Hurricane Katrina reported higher PTG compared to those who had vicarious experience. This implies that perception of trauma as highly severe led to more posttraumatic growth compared to low trauma. It may be noted that highly severe trauma may cause greater restructuring of the survivors' worldview which in turn triggers greater posttraumatic growth. This was however contrary to the findings of Joseph, Murphy and Regel (2012) which reported a curvilinear relationship between initial trauma severity and posttraumatic growth. The study reported that people with low trauma severity and high trauma severity reported lower posttraumatic growth than those with moderate trauma severity.

Trauma practitioners may therefore find it important to explore trauma severity of survivors in designing intervention strategies. For instance where survivors report severity that is associated with lower growth, trauma practitioners may need to be more innovative and develop strategies that are unique to the clients in question.

4.9 Relationship between Cognitive Trauma Processing Strategies and Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

Research question five sought to explore the various relatively permanent trauma processing strategies that the survivors employed in mitigating the effects of trauma and their relationship with posttraumatic growth. The major strategies, which were measured by the Cognitive Processing of Trauma Scale (CPOTS), included denial, acceptance, regret, positive cognitive restructuring and downward comparison. The scale was a self-report questionnaire with possible mean scores per strategy ranging from 0 to 6. The scores on this scale were based on the survivors' current state of functioning. For the positive strategies acceptance, positive cognitive restructuring and downward comparison higher scores indicate better psychological functioning while for the negative strategies denial and regret higher scores indicate problematic functioning. The results are shown in Table 29 below.

Table 29

Descriptive Analysis of Cognitive Trauma Processing Strategies

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Denial	194	.0	6.0	2.496	1.3252
Acceptance	194	.5	6.0	3.724	1.3662
Regret	194	.0	6.0	2.510	1.5446
Positive cognitive restructuring	194	.3	6.0	3.426	1.4773
Downward comparison	194	.0	6.0	4.105	1.5232
Valid N (list wise)	**194**				

The results indicated that majority of the survivors had processed their trauma to a large extent using the positive trauma processing strategies namely downward comparison with a mean of 4.11, acceptance with a mean of 3.72 and positive cognitive restructuring with a mean of 3.43. The results further indicated that the negative trauma processing strategies such as denial (mean=2.50) and regret (mean=2.51) were to a small extent used by the survivors in processing the trauma. The findings further indicated that all participants scored above average on the positive trauma processing strategies and below average on the negative trauma processing strategies.

Similar trauma processing strategies were identified by other studies. The findings of Vanhooren, Lijssen and Dezutter (2018) identified trauma processing strategies such as denial, substance abuse, emotional support, disengagement, religious coping and search for meaning

among incarcerated people. In this study positive trauma processing strategies search for meaning, religious coping and emotional support were experienced to a larger extent as compared to negative ones. This appears to be replicated by the current study which reported lower levels of negative trauma processing strategies.

Oginska and Zadworna (2018) found emotional support, active coping, planning and venting to be the most prevalent following the death of a child. Negative trauma processing strategies such as blaming, substance abuse and behavioral disengagement were among the least prevalent strategies. However self-destruction behaviour was highly prevalent in the current study. The general trend in the processing of trauma show that majority of trauma survivors used positive trauma processing strategies as opposed to negative ones. The findings of the current study indicated that trauma processing among the Garissa University trauma survivors was generally healthy. There was generally higher use of positive cognitive trauma processing strategies as opposed to negative strategies.

4.9.1 Hypothesis Testing

This study examined the relationship between Cognitive trauma processing strategies and Posttraumatic growth using Pearson correlation analysis. The cognitive trauma processing strategies included denial and regret which are considered to be negative strategies, and acceptance, positive cognitive restructuring and downward comparison which are considered to be positive strategies. The study hypothesized that there was no significant relationship between cognitive trauma processing strategies and posttraumatic growth among the Garissa University terror attack survivors. The results are shown in Table 30 below.

Table 30

Pearson Correlation Analysis for Cognitive Trauma Processing Strategies and Posttraumatic Growth

	Relating to Others	**New Possibilities**	**Personal Strength**	**Appreciation of Life**	**Spiritual Change**	**Total Posttraumatic Growth**
Denial	-.014	-.051	-.008	-.024	-.131	-.016
	.842	.477	.915	.739	.070	.825
Acceptance	.440	.347	.391	.151	.289	.428
	.000	.000	.000	.035	.000	.000
Regret	-.052	-.003	-.021	-.020	-.079	-.002
	.474	.967	.775	.780	.275	.976
Positive cognitive restructuring	.215	.430	.240	.187	.141	.327
	.003	.000	.001	.009	.049	.000
Downward comparison	.282	.095	.180	.056	.107	.199
	.000	.189	.012	.439	.138	.005
	194	**194**	**194**	**194**	**194**	**194**

The study findings showed that there was weak positive and statistically significant correlation between acceptance and all the posttraumatic growth scales namely relating with others ($p< 0.05$; $r =0.44$), new possibilities ($p<0.05$; $r=0.347$), personal strength ($p<0.05$; $r=0.391$), appreciation of life ($p< 0.05$; $r=0.151$), spiritual change ($p<0.05$; $r=0.289$) and total posttraumatic growth ($p<0.05$; $r= 0.428$). This implies that an increase in cognitive trauma processing strategy acceptance led to increase in posttraumatic growth of Garissa University terrorist attack survivors.

Similarly the study found weak positive and statistically significant correlation between positive cognitive restructuring and all the posttraumatic growth scales namely relating with others ($p< 0.05$; $r =0.215$), new possibilities ($p<0.05$; $r=0.43$), personal strength ($p<0.05$; $r=24$), appreciation of life ($p< 0.05$; $r=0.187$), spiritual change ($p<0.05$; $r=0.141$) and total posttraumatic growth ($p<0.05$; $r= 0.327$). This implies that an increase in positive cognitive restructuring led to an increase in posttraumatic growth of Garissa University terrorist attack survivors.

The results further showed weak positive and statistically significant correlation between downward comparison and posttraumatic scales relating with others ($p<0.05$; $r=0.282$), personal strength ($p<0.05$; $r=0.012$) and total posttraumatic growth ($p<0.05$; $r=0.199$) except for new possibilities, appreciation of life and spiritual change which had no statistically significant correlation. In terms of the negative cognitive trauma processing strategies, the study found weak negative but statistically insignificant correlation between regret and denial ($p > 0.05$), on all the posttraumatic growth domains.

Pearson correlation analysis was conducted to examine the relationship between cognitive trauma processing strategies and posttraumatic growth. Table 30 summarizes the findings. This finding implies that there is a general significant relationship between positive cognitive trauma processing strategies (acceptance, positive cognitive restructuring and downward comparison) and posttraumatic growth because the p-value was less than the standard probability ratio of 0.05. We therefore reject the null hypothesis and adopt the alternative one. We conclude that there was statistically significant positive relationship between positive cognitive trauma processing strategies and posttraumatic growth of Garissa University terrorist attack survivors. The study found no statistically significant relationship

between negative cognitive trauma processing strategies and posttraumatic growth of Garissa University terrorist attack survivors.

The lack of correlation between negative cognitive trauma processing strategies and posttraumatic growth has been reported by other studies across the globe. Philips and Lindsay (2011) reported that strategies such as denial, avoidance, behavioural disengagement and substance abuse were known to impede posttraumatic growth in the general population. Similar findings have been reported by Schuettler and Boals (2011) who found that maladaptive trauma coping strategies such as denial, avoidance and drug abuse had negative effect on posttraumatic growth. In the current study, denial and regret were conceptualized as negative trauma processing strategies. The two strategies could have been conceptualized as positive if not utilized by survivors beyond one month from the time of the attack (APA, 2013, DSM-5). Denial and regret are among the initial responses that unconsciously evoked by individuals following adversity as emergency responses to protect the psyche from further damage after trauma experience.

This is consistent with Janus two phase theory which posits that response to trauma has an illusionary side that sets in immediately a person encounters a traumatic event (Maerker & Zoellner, 2004). According to organismic valuing theory denial and regret reported in the current study could have been as a result of failure of participants to develop accommodation and instead maintained the pre-trauma schemas which gave the short term reprieve (Joseph & Linley, 2005). However after some time the mind reduces the use of these defense mechanisms and engages more cognitive and processes to interpret the event more rationally. Barrera, Szafranski, Ratcliff, Garnaat and Norton (2016) asserted that cognitive restructuring involved disputing negative thoughts and replacing them with positive affirmations after adversity. They

noted that following traumatic events, core beliefs and world view of the survivors significantly change which translates into painful feelings.

The process of cognitive restructuring helps in reconstructing the shuttered world view which results to growth after adversity. Shikatani, Antony, Cuo and Cassin (2014) reported that cognitive restructuring involved thinking rationally, facing difficult situations with courage and encouraging less negative thoughts. In the current study, positive trauma processing strategies were positively correlated with posttraumatic growth, which indicates restructuring of pre-trauma schemas to accommodate the new trauma information as argued by the organismic valuing theory (Joseph & Linley, 2005).

The findings of Caspari, Bogdan-Raque, McRae, Simoneau and Ash-Lee (2017) using a sample of 169 breast and prostate cancer survivors found that positive cognitive processing accounted for 42.7% of variance in PTG. The findings show that there is general consensus among various studies and the currents study on the positive relationship between cognitive trauma processing strategies and posttraumatic growth of trauma survivors.

4.10 The Role of Counseling in Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

This section sought to find out how posttraumatic growth varied among the participants in relation to the number of counseling sessions attended after the attack. Demographic differences in relation to the number of counseling sessions attended by the participants were assessed and presented in form of tables. In-depth interviews were also conducted to assess the value that counseling added to the participants, evaluate areas of participants' issues that counseling did not address and seek suggestions for areas of improvement for counseling future crisis survivors. The study classified participants in terms of those who did not undergo

any counseling, those who attended critical incident debriefing only (1-5 sessions), those who attended counseling for 5- 10 sessions and those who attended more than 10 sessions. Means for posttraumatic growth dimensions were computed and presented in form of tables.

4.10.1 Relationship between the Number of Counseling Sessions Attended and Posttraumatic Growth

Participants reported varying means on the various posttraumatic growth dimensions in relation to the number of counseling sessions attended. The results were presented in Figures 5, 6, 7, 8, 9, 10 and 11.

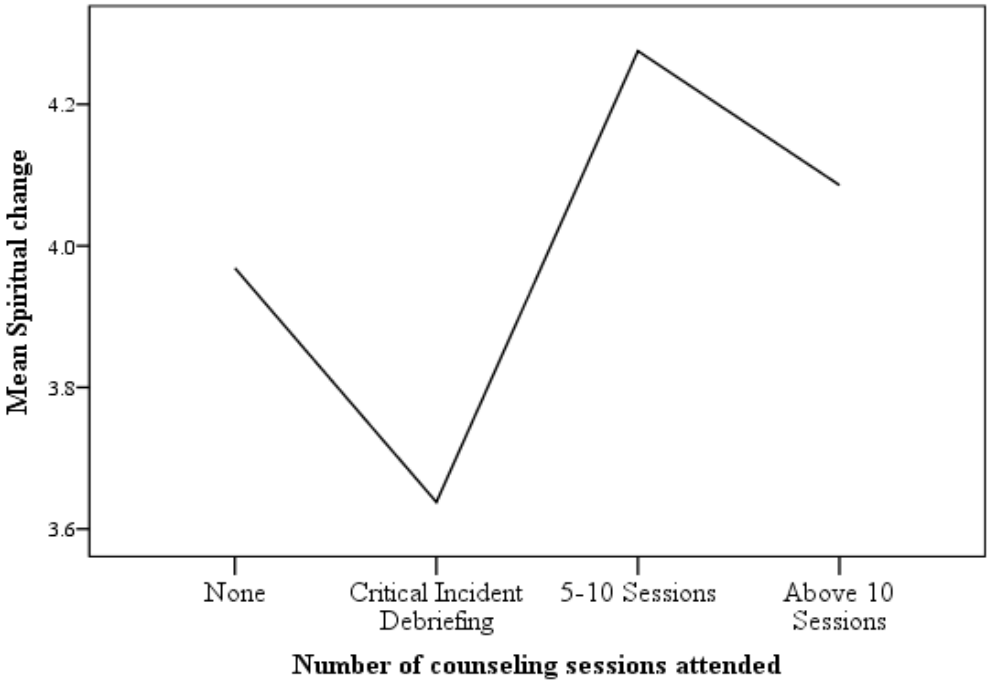

Figure 5. Number of counseling sessions and spiritual change

On the spiritual change dimension survivors who attended critical incident debriefing only recorded the lowest growth (mean= 3.64; standard deviation= 1.18) followed by those who did not attend any counseling sessions (mean= 3.97; standard deviation= 1.13). Those who attended more than 10 sessions had a mean= 4.09 and standard deviation= 1.26, with the highest growth being reported by those who attended between 5 and 10 counseling sessions

(mean= 4.28; standard deviation= 0.87). This might have been due to dependency on the counselor which might have caused the continued attending of counseling despite being well.

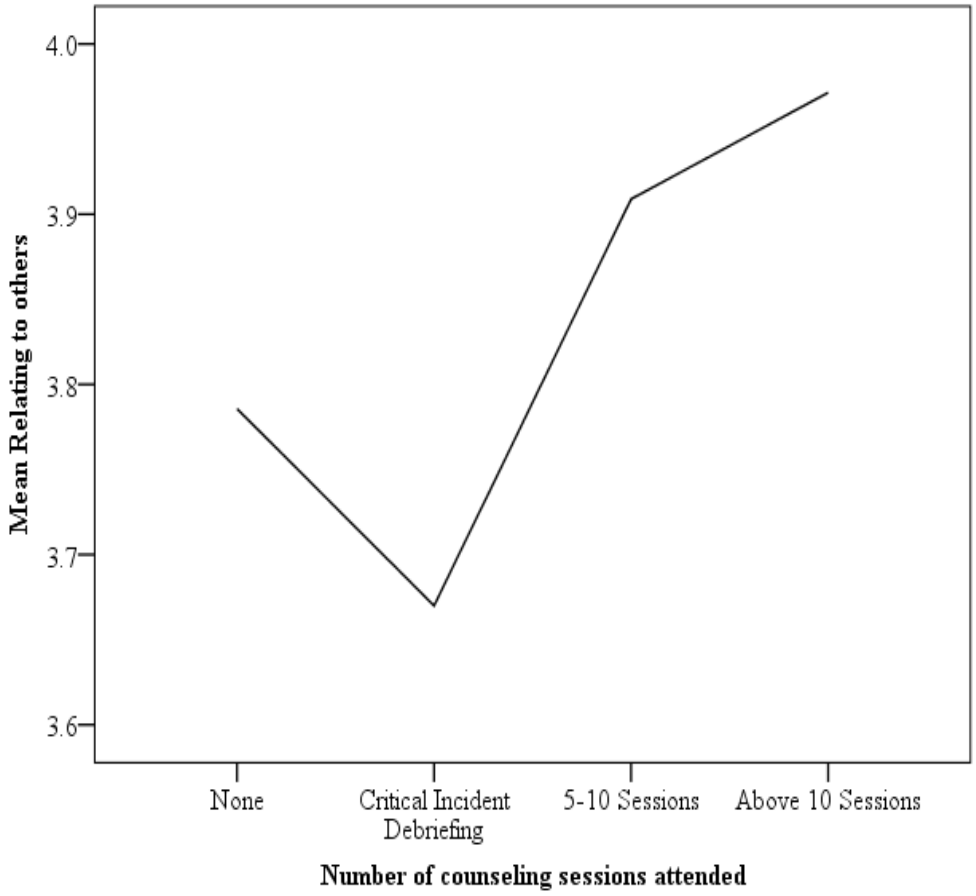

Figure 6. Number of counseling sessions and relating to others

On relating to others dimension survivors who attended critical incident debriefing only recorded the lowest growth (mean=3.67; standard deviation= 0.73) followed by those who did not attend any counseling sessions (mean= 3.79; standard deviation= 0.82). Those who attended between 5 and 10 sessions had mean= 3.91; standard deviation=0.69, with the highest growth being reported by those who attended more than 10 counseling sessions (mean=3.97; standard deviation= 0.71).

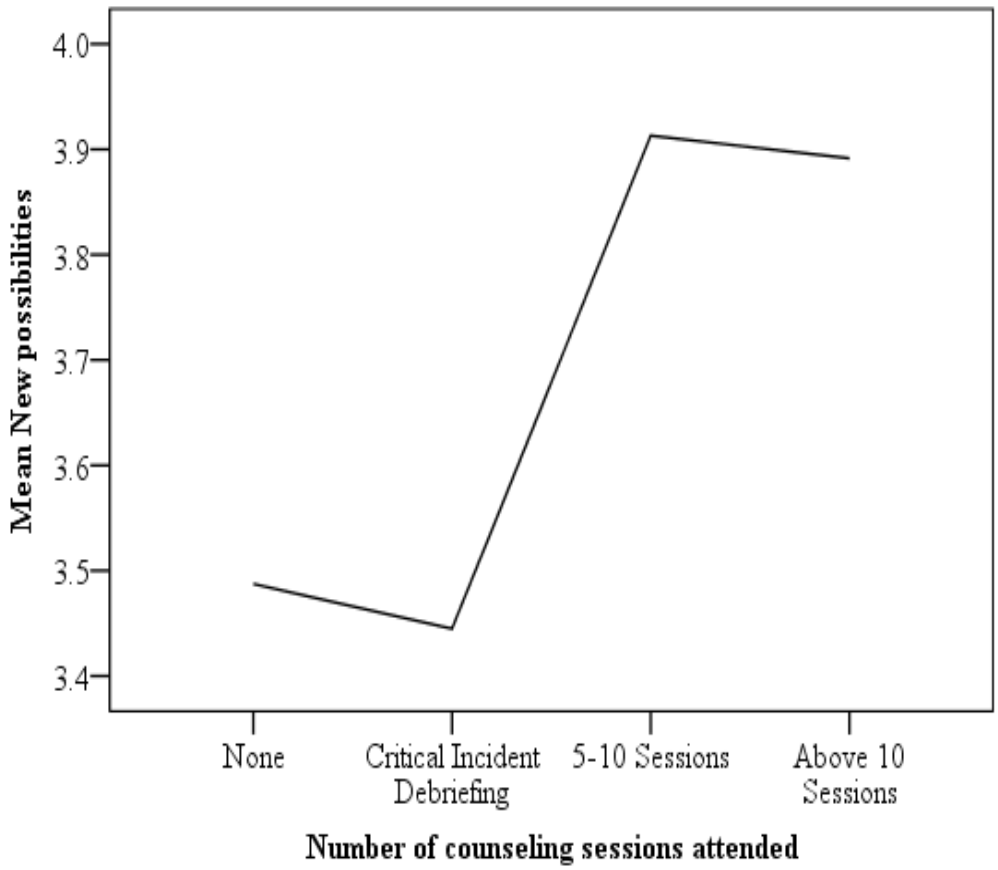

Figure 7. Number of counseling sessions and new possibilities

On the new possibilities dimension survivors who attended critical incident debriefing only recorded the lowest growth (mean=3.45; standard deviation=0.81) followed by those who did not attend any counseling sessions (mean=3.49; standard deviation=1.00). Those who attended more than 10 counseling sessions had mean=3.89 and standard deviation=0.67, with the highest growth being recorded by those who attended between 5 and 10 sessions (mean=3.91; standard deviation=0.76).

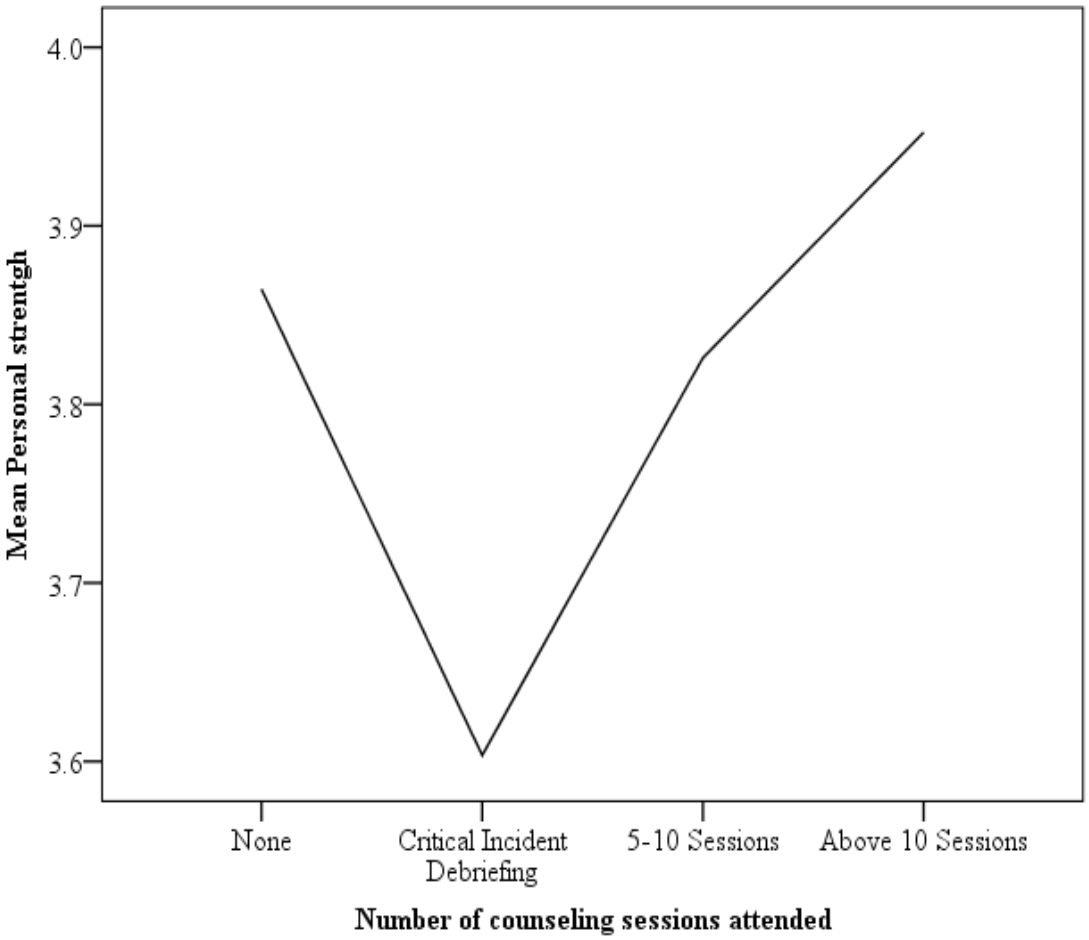

Figure 8. Number of counseling sessions and personal strength

On the personal strength dimension survivors who attended critical incident debriefing only recorded the lowest growth (mean=3.60; standard deviation=0.84), followed by those who attended between 5 and 10 sessions (mean=3.83; standard deviation=0.89). Those who did not attend any counseling sessions had a mean=3.87and standard deviation=0.91, with the highest growth being reported by those who attended more than 10 sessions (mean=3.95; standard deviation=0.96).

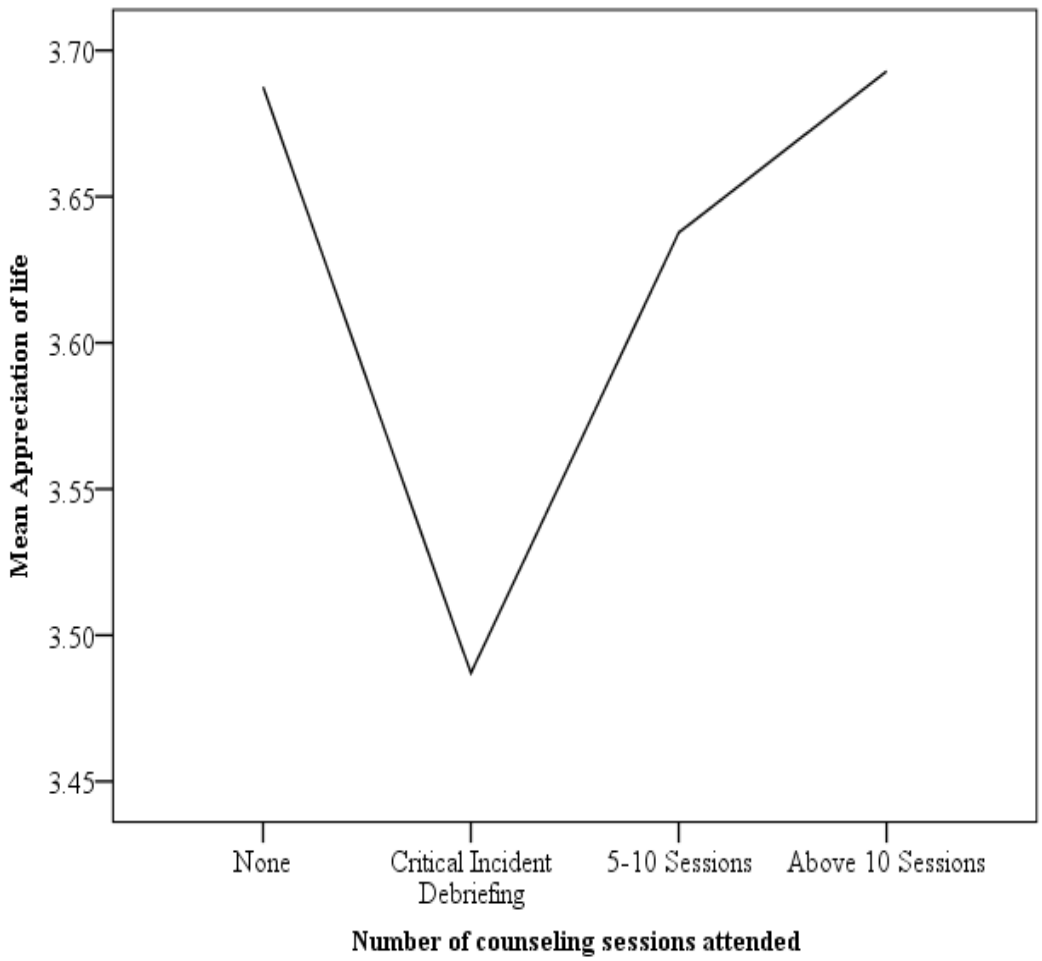

Figure 9. Number of counseling sessions and appreciation of life

On appreciation of life dimension the highest growth was recorded by those who did not attend any counseling session and those who attended more than 10 sessions (mean=3.69; standard deviation=1.08 and 1.01 respectively) followed by those who attended between 5 and 10 sessions (mean=3.64; standard deviation=0.90) with the lowest growth being recorded by those who attended critical incident debriefing only (mean=3.49; standard deviation=0.90).

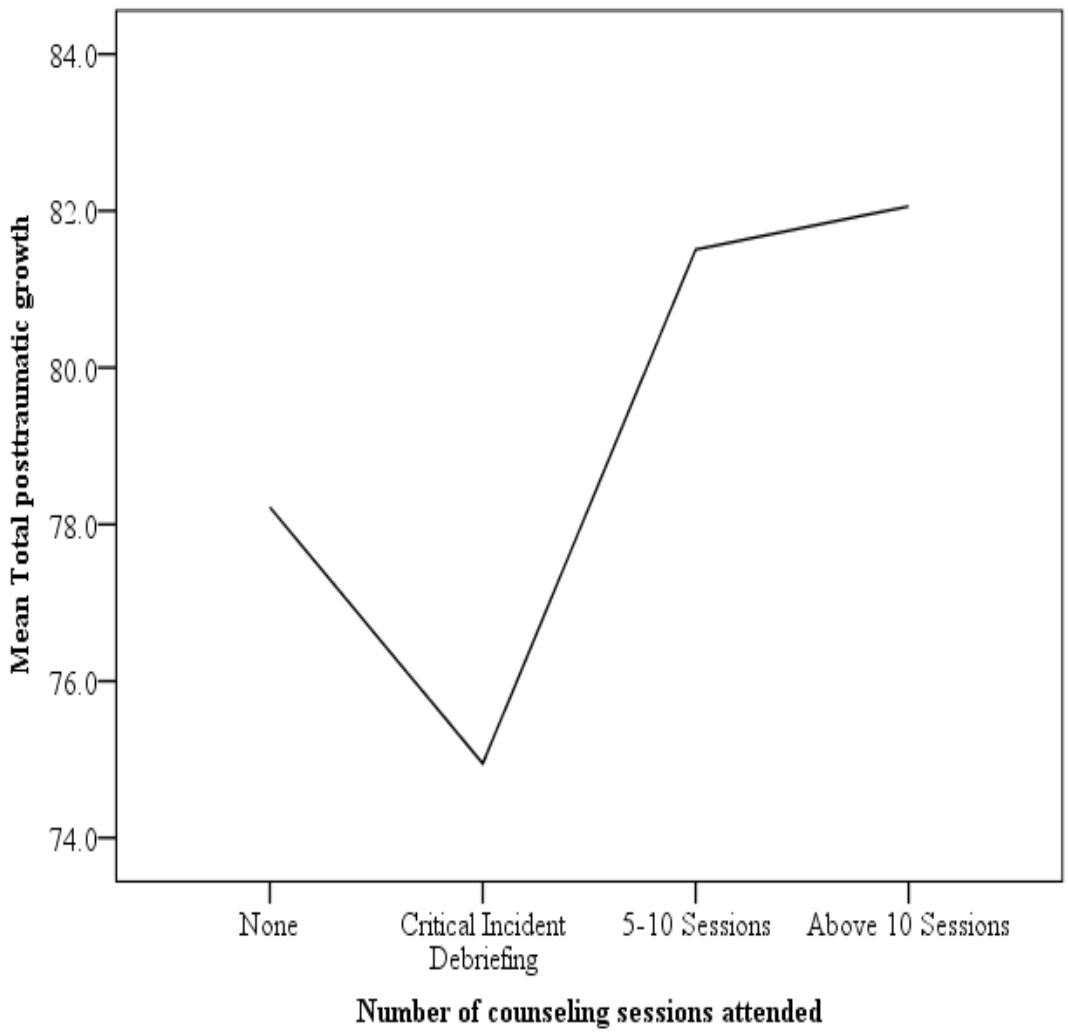

Figure 10. Number of counseling sessions and total posttraumatic growth

For total posttraumatic growth the lowest growth was reported by survivors who attended critical incident debriefing only (mean= 74.95; standard deviation=13.81) followed by those who did not attend any counseling (mean=78.22; standard deviation=15.46), those who attended between 5 and 10 counseling sessions (mean=81.51; standard deviation=12.55) with the highest growth being recorded by those who attended more than 10 sessions (mean=82.06; standard deviation= 13.90).

Participants were also to explain the value that counseling added to them after the attack, the issues that counseling did not address and areas in which counselors need to improve

in during counseling for future crisis survivors. The data was corded, categorized and various themes extracted. Frequencies of the various themes were computed and explanation and interpretation of the themes was done. Five themes were identified as shown in Figure 11 below.

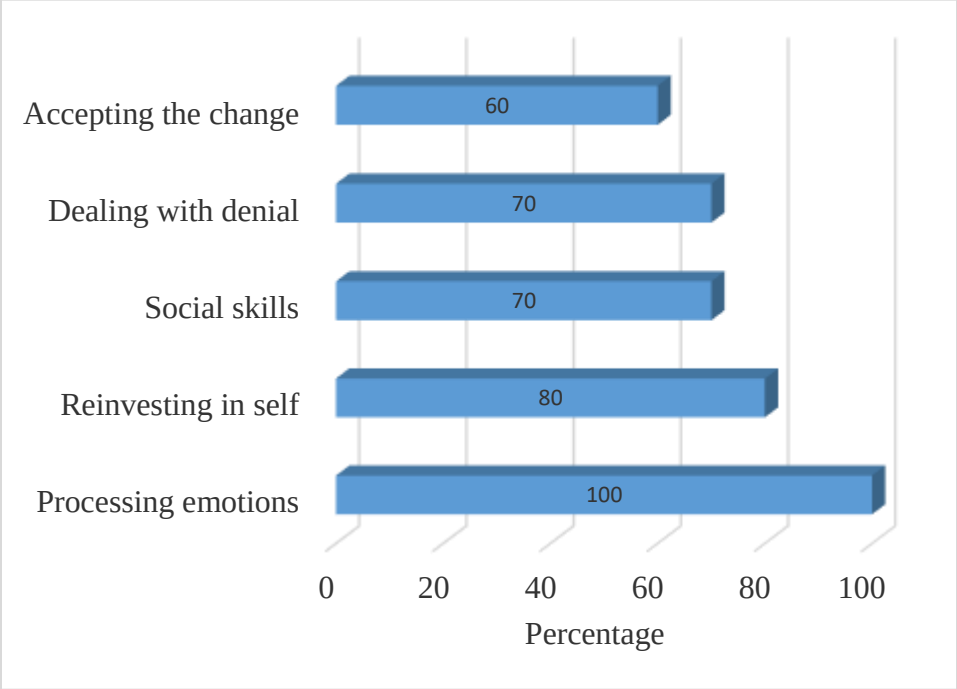

Figure 11. Themes for value added by counseling to survivors

Majority of the participants reported that counseling helped them process their emotions (100%), reinvest in self (80%), enhance social skills (70%), deal with denial (70%) and accept the change (60%).

The findings show that counseling enhanced posttraumatic growth among the survivors of Garissa University terrorist attack. This is in agreement with other studies across the world. Jeon, Han, Choi, Ko and Kim (2016) conducted a study with a sample of 10 survivors of large scale maritime disaster that occurred in South Korea, to investigate the therapeutic value of

Eye Movement Desensitization and Reprocessing (EMDR) on posttraumatic growth and reported similar results. The results indicated that after 3 months from treatment completion, significant increase in posttraumatic growth was observed. It was concluded that EMDR therapy enhanced posttraumatic growth in disaster survivors. Similarly Xu, Hu, Song, Lu, Chen, Wu and Xia (2016) conducted a study examining the effect of positive psychological intervention on posttraumatic growth among primary health care workers in China using a sample of 579 health care workers from Shenzhen. The PTGI scores before and after psychological interventions were compared. The findings revealed that PTGI scores were significantly higher after the psychological intervention than before.

This was supported by qualitative data from participants who reported that counseling had helped them in processing of emotions related to the attack. Participant reported to have experienced mixed negative emotions after the attack. There were feelings of anger, guilt, hatred, rejection, grief and bitterness among others. Most survivors reported that they had unusual emotional burden after the attack that kept them disturbed. The questions of 'why me?' 'Where was God when this happened?' kept them in a state of confusion and pain. The exploration of these aspects during the counseling period brought relief and hope for the future. A participant reported,

> During the attack, I witnessed friends separated and executed on the basis of religion that one professed. My friends were shot because they were not Muslims. The bullet that was logged in my arm was as a result of my Christian faith…. After the attack I hated Muslims with passion….I burned with anger every day and harbored bitterness in my heart. One day I went to hospital and found a Muslim making enquiry at the reception and I walked out. I carried this burden for long but through counseling I began

> to see Muslims as human beings and to direct my hatred towards the terrorists. At the moment I can meet and talk to them and some of my friends are Muslims. (Participant 04, personal communication, Feb 27, 2018).

Another participant said,

> I wanted to know why my friends had died at such a young age. I kept wondering if God was still powerful and why He did not protect us when we needed him most. Every night I kept awake for long hours thinking on how life could be without my friends. Our counselors allowed us to verbalize these questions. I got assurance that the feeling was normal and the questions I was asking were relevant even if they had no answers. I was helped to mourn and through that I now feel better. (Participant 06, Personal communication, Feb 27, 2018).

It was reported that majority of the counselors were focused on emotion processing which helped the survivors most of whom had blocked emotions to vent them out. This finding agrees with Vanhooren, Leijssen and Dezutter (2018) who reported that emotional support was positively correlated with posttraumatic growth among incarcerated individuals. Calhoun and Tedeschi (2013) described counseling as expert companionship which help trauma survivors to process their painful emotions and develop new ways of thinking. The focus of counselors on emotional issues of participants was therefore crucial to healing and functioning beyond the pre-trauma levels. According to Alayarian (2011), emotional blockage can be one way of harboring trauma in the body and liberation from this could mark the beginning of progress in trauma healing. The presence of emotional blockage among the participants, could have been an impediment to their cognitive processes which are vital in posttraumatic growth.

A study in South Africa on posttraumatic growth among prisoners, reported that there were significant group differences between those who attended psychotherapy and those who did not (Vanhooren, Lijssen & Dezutter, 2018). Those who attended psychotherapy reported higher posttraumatic growth on all the domains. In the current study psychological intervention contributed to higher posttraumatic growth. This could be attributed to the ability of counseling to help survivors process the negative thoughts about the terror attack hence paving way for positive transformation.

Other participants reported to have been helped to reinvest in life, improve on their social skills and accept the changes that came with the attack and deal with denial. They reported that the shock from the attack brought their lives to a halt. A number of them had opted to abandon education as it was perceived to be the main reason that took them to Garissa from different parts of the country. To them, had it not been for education, they could not have gone through this pain. Parents were also possessive of their children after the attack and they too supported the idea of withdrawal from college. The survivors attributed their decision to proceed with education to the counseling sessions they underwent. A participant stated,

> Had it not been counseling, I would not have continued with my education. My parents too softened their stance on this issue after they had some sessions with my counselor. Counseling challenged me to view education not only as the reason I went through the terrorist attack experience but a reason to defeat the terrorists who had wanted to terminate it. (Participant 07, personal communication, March 1, 2018).

Some of the participants also took short courses in counseling for personal development. After the counseling sessions, there was reevaluation of life and alterations in the priorities that survivors had in life. One participant said, *"I have reorganized my entire*

life….. I have worked on motivating others and I think am a good motivational speaker." (Participant 06, personal communication, March 1, 2018).

According to Barrington and Shakespeare-Finch (2013) reinvesting in self after trauma helps survivors to return to normalcy. Traumatic events cause major disruption in life and alter normal routines in the life of survivors. These disruptions may further intensify trauma as they constitute loss. In the current study, the focus of counselors on survivors re-investing in self was a key step towards trauma recovery. The challenge towards reorganization of life after trauma among these survivors could have boosted self-introspection hence finding meaning. According to terror management theory reinvesting in self may take the form of beginning projects that may outlive the concerned person as a way of reducing death anxiety (Solomon, Greenberg & Pyszczynki, 2015). From the testimonies of participants in the current study, it is clear that some of participants decided to invest in self as a way of defeating the awareness of death.

4.10.1.1 Social Skills Development

Counseling was reported to have had major influence on social skills enhancement after the attack. With trust of the survivors having been greatly severed by the attack, interpersonal skills were affected too. Feelings of suspicion, bitterness, and anger that engulfed the survivors were negative to relationship building. Survivors reported that it was through group counseling sessions that they began to build their trust for friends again. The sessions provided an opportunity for the survivors to make new friends and practice the friendship enhancement skills. Participant 03 (personal communication, March 1, 2018) reported, "*The most important thing that counseling did for me was enhancing my relationship with others. I formed new friendships in my new environment and now feel more connected than when I first relocated*

from Garissa University. This sentiment was echoed by participant 10, (personal communication, March 2, 2018) who attributed his reconnection with friends to the support given by peer counselors.

> The peer counselors did a wonderful job. They offered support the time I needed it. The peer counselors' support helped me so much in breaking the resistance I had towards friendship formation. They became my first new friends in Moi University and helped me develop trust to take the risk of acquiring other friends on campus.

Calhoun and Tedeschi (2013) referring to counseling in posttraumatic growth as expert companion imply that counseling is a relationship built on trust and empathy. By virtue of the process of counseling being a relationship, development of social skills among the survivors would be inevitable. The findings of Vanhooren, Leijssen, Dezutter (2017) agree with the current study on the development of interpersonal skills through counseling. In their study which used qualitative research design participants reported to have improved in the way they related with others. Among the social skills reported by the participants included improved empathy, perceiving others differently, being authentic in relationships, and improved self-disclosure.

4.10.1.2 Dealing with Denial

As a result of the sudden and surprising nature of the attack trauma intensity was high and most of the survivors remained in denial for some time. They reported disbelief and inability to come to terms with the fact that their close friends had been murdered in the heinous attack. Participant 05 (personal communication, Feb 27, 2018) said,

> It is through counseling that I was able to confront my denial and come to terms with the loss of my friends. Initially I refused to believe that they were dead. When I attended the funerals of a few of them I told myself that it was not my friends who was being buried but empty caskets.

Participant 07 (personal communication, March 1, 2018) had similar feelings. He reported that, *"I did not believe my friends were dead. I thought it was a movie. For some weeks I strongly believed they did not die but had been abducted and that they would be reuniting with us soon."*

Counseling was instrumental in helping the survivors process denial. Other participants reported pain during the denial stage. They felt that failing to accept the death of their friends was the most painful experience as it disrupted their sleeping patterns and general life routines. This is consistent with the findings of Barbara (2013) that counseling was instrumental in reducing denial among children with sexual behaviour problems. Freda (2014) reported similar findings confirming the role of counseling in processing of negative coping mechanisms among trauma survivors. The current study found that negative cognitive processing strategies namely denial and regret negatively predicted posttraumatic growth. The role played by counseling in reducing denial could therefore have paved way for enhancement of posttraumatic growth among the participants.

4.10.1.3 Accepting the Change

The participants saw the attack as a major disruption in their lives. They were forced to suspend their studies for some time as rescue and identification of bodies took place. Transferring from Garissa University, the location of the attack, was a long arduous process especially at a time when trust in people had been shuttered. Accepting all these changes was not easy for majority of the survivors. They expressed that counseling played a significant role

in helping them settle in the new environment and accept the abrupt change from their previous campus. Participant 01 stated,

> In Garissa I was staying in the hostels within campus but on relocating here, I had to stay outside the campus in my own rented house. I did not have friends here and it was like starting all over again. Counsellors helped me navigate through this uncertainty and after some time I have been able to settle in this new environment (Personal communication, March 3, 2018).

Survivors felt that to a large extent, counseling helped them live with the reality of having lost their friends through death. Some were expecting that their dead friends would come back one day, but counseling sessions helped them to live with the hope of meeting them in future as opposed to them coming back. The lost items, lost time in the education process and lost peace as a result of change in routine were a great concern for the survivors. Counseling provided reassurance that normalcy would return. The philosophical questions that kept lingering in the minds of the survivors on what would happen next were addressed through counseling. One participant reported,

> The confusion in which I found myself after this attack was so overwhelming. I had many questions as I tried to comprehend what the future would look like. When I faced my counselors my thinking changed. I was helped to see some order ahead despite the current status of confusion I was in. I thank the counselors. (Participant 05, personal communication, March 3, 2018).

Literature shows that the reduction of denial and other negative coping mechanisms, after counseling, automatically pave way for acceptance and other positive trauma coping

strategies (Freda, 2014; Barbara, 2013). In the current study participants accepted the reality of the terrorist attack despite the pain associated with it. McHugh, Forbes, Bates, Hopwood and Creamer (2012) found that psychotherapy helped survivors of trauma to develop gratitude and forgiveness, virtues that are important in letting go of the past and embracing growth.

From the findings of the current study, it is surprising that participants who attended critical incident debriefing only, which is the most common response to traumatic events by mental health professionals reported the lowest posttraumatic growth on all the 5 domains and the total growth. These findings are supported by Mayou, Ehlers and Hobbs (2002) who argued that despite dealing with short term pain in trauma survivors, people who rely on critical incident debriefing alone develop greater distress three years after the traumatic event. The findings also showed that the group of survivors who did not attend any counseling sessions recorded some posttraumatic growth level that was higher than those who attended critical incident debriefing only. This could be justified by the organismic valuing theory which posits that humans have inborn ability to seek growth, know what is important for them and the direction that will lead them to greater wellbeing (Joseph & Linely, 2005). It is possible that the reason for substantial posttraumatic growth among the group of participants that did not attend any counseling sessions was the inborn human nature. This shows that individuals are responsible for the initiation of their own growth and all other factors only come in to enhance the growth. The meaning management theory holds the same assumption that humans have inborn motivation for survival and find meaning in their survival (Wong, 2008). The non-directed growth witnessed in this group could not be explained by any other factor other than inborn characteristics. This prompted the researcher to probe the participants to find out what areas of their concerns that counseling did not address. The interview sought to explore the

issues that counseling did not address effectively. The survivors' expectations about counseling and the counseling that was actually offered were examined with focus on the inconsistencies between the two situations.

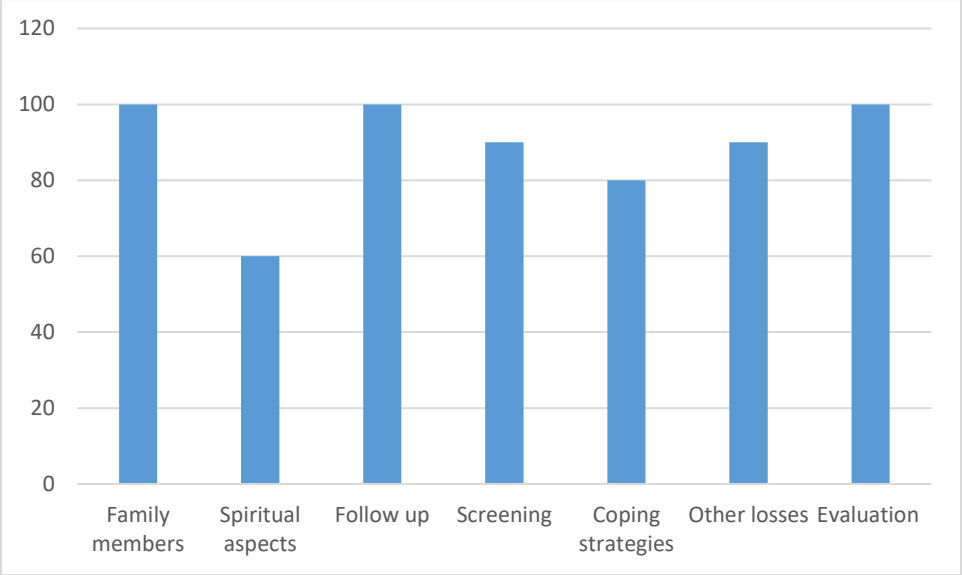

Figure 12. Themes on what counseling did not address

4.10.1.4 Family Members of Survivors

There was a general concern among majority of the survivors that no attempt was made to incorporate their family members in the counseling programmes after the attack. The main focus of the counseling was the survivor as an individual. The fact that the survivors were part of a family system was ignored. The survivors reported that their significant others in the family were equally traumatized but remained disturbed due to neglect by counselors and other organizations that were involved in the rescue operation. To the survivors, seeing their traumatized parents and siblings struggling without any help was much traumatizing to them.

The survivors observed that the attack too shattered the functioning of the entire family. Parents and siblings also required help on how to live with their traumatized children but absence of this left them helpless and painful. One participant reported,

> Since the attack, my parents and siblings have changed. They became overly protective and I feel they keep surveilling me to ensure am safe. Whenever they hear of accidents or reports of any other attack in any part of the country they keep calling me to find out if am safe. If they fail to get me on the phone they go through much pain thinking I might be dead. (Participant 03, personal communication, March 1, 2018).

The survivors felt that they could not achieve psychological wellness if their families were still living with the pain of the attack. They reported that the neglect of the entire family in the counseling process was based on the fact that the counseling was designed to end within a given period of time. Involving the family would therefore have required more time, which they felt most of the concerned organizations were avoiding. One participant stated,

> I think the whole counseling process was never focused on our well-being but to finish the given work on time and get money from the donors. If they were interested in our healing process, they would not have neglected our family of origin. What was the need of being counseled to adjust to our new campus and when we go back home we seeing our parents still devastated? (Participant 02, personal communication, March 1, 2018).

Another participant reported,

> For me as long as my family members still suffer in silence as a result of the terror, I may never recover fully. The pain and sickness of my parents affects me too. I wish

> my family members could also have received psychological help with urgency with which I received it. (Participant 06, personal communication, March 1, 2018).

This study has demonstrated that terrorism is a psychological war aimed at hurting or killing a few people to devastate many. Lopez and Pineda (2011) reported that the Oklahoma City bombing in 1995, caused 168 fatalities but over 8000 individuals sought crisis intervention. This argument was supported by the findings of Nasim and Aziz (2014) who conducted a survey on the effects of terrorism in Pakistan. They reported 3.9% physical effects, 17.2% social effects and 79.2% mental health effects. This trend demonstrates that with the 148 deaths of the Garissa University terrorist attack, thousands of other people could have been traumatized through vicarious trauma. Among those affected could be the relatives of the deceased and survivors, the aid workers and security forces involved in the rescue operation, the general public who received the news of the attack through mass media and friends of the survivors who continue to hear the narration of the survivors about the attack. Focusing counseling services on the students who survived the attack alone left out a large percentage of traumatized people who continue to suffer in silence.

As indicated by respondents in the current study, leaving out family members of the survivors during counseling was a serious flaw that left many psychological wounds unattended to. It is also possible that this neglect may continue to serve as secondary trauma to the already traumatized survivors. It is not possible to sustain the trauma healing achieved during counseling when the images of traumatized parents and relatives continue to be witnessed whenever the survivors go back home. The researcher was aware that the focus of counseling on the trauma survivors to the victims alone could have been a product of many other factors ranging from inadequate finances for the implementing organizations and a

limited number of trained professional counselors to serve the general public. However it is also important to note that expanding the counseling network to capture the close relatives of the survivors and the deceased could have improved the long term outcomes of the counseling process at a relatively lower cost.

4.10.1.5 Screening of Survivors

The survivors reported that no screening was done before grouping them for counseling sessions. They felt that due to the magnitude of the attack and the coverage it was given in the media, counselors approached the survivors with their own assumptions about the issues they were going through. Survivors felt that the counselors were preoccupied with the terror attack to the point of not being able to capture and explore the issues that required immediate attention. Little effort was made to explore the survivors' pain and priorities before help. Survivors were grouped haphazardly and taken through similar counseling as if they had same level of pain. One participant asked,

> How can you group someone who lost a laptop, who survived a gun shot, lost a friend and the one who lost a child together and take them through the same counseling process? Do these people have anything in common on the pain they went through? (Participant 06, personal communication, March 1, 2018)

Other survivors reported that counseling was imposed on them without first exploring if they were ready to talk about the attack. For instance some survivors reported that they were pushed to attend counseling yet they felt they were not receiving any help. The reason for this was that they required time alone to process the shock before opening up to talk about it. They reported that counselors were not keen to find out the reason for their resistant to counseling but went on with counseling assuming the process was smooth. One survivor said,

> The time they brought counseling to me, I was not prepared to talk. However after some weeks, I felt I needed to share my pain with someone. I think this was the time I was ready for counseling but unfortunately, the counseling sessions had been terminated (Participant 09, personal communication, March 2, 2018).

The crisis nature of counseling was an impediment for the normal growth of clients. The survivors reported that there was a rush by counselors to help them within the shortest time possible to avoid a bigger crisis. Even though survivors desired to walk through the process with people who could understand them, counselors focused on fixing their problem. Participation of the survivors in conceptualizing their own problem was ignored. The end result was that counselors ended up addressing issues that were less important to the survivors.

According to Mustaffa, Afsaneh and Ahmad (2013), assessment is an essential part of the counseling process which acts as a guide to making decisions about which intervention strategies to use. With the absence of proper screening for the population in the current study, chances of having used wrong interventions could be high. Bray (2010) asserts that a successful treatment plan in psychotherapy depends on the nature of assessment of the problem done. The decision not to do screening for the survivors of Garissa University terror attack could have been informed by the nature of publicity the event received in the local and international media. It could be possible that most counselors attended to the survivors basing on the information they received through the press and neglected the subjective feelings of the individual survivors. This could be justified by the numerous issues that participants listed as part of what counselors failed to address in their struggle with trauma.

4.10.1.6 Coping Strategies for Survivors

The expectation of majority of the survivors was that counseling could help them explore on the coping strategies to handle the aftermath of the attack. Survivors reported that the attack brought new challenges that survivors had never experienced before such us intrusive thoughts about their deceased friends, hypervigilance and constant existential questions. To the surprise of many survivors, the counselors kept insisting on forgetting the pain of the attack, the deceased friends and lost items and moving on with life. They were encouraged to talk about the event and assured that if they did so, the nightmares would stop and yearning for their deceased friends would end. One participant said, *"How could I forget my best friend who had died in the attack?... how could I forget a painful event of such magnitude?"*(Participant 09, personal communication, March 2, 2018). Another participant reported,

> Despite assurance from my counselor that after speaking about my friends I could forget about them, their image stuck in my mind. The night mares about their screams as they were dying remained fresh in my mind……. For me it was more painful trying to get rid of these memories than being helped on how to live with the memory (Participant 10, personal communication, March, 2018).

The participants felt that exploring ways of living with the painful memories could have been the best approach to be used by counselors instead focusing on forgetting and moving on. Some of the cognitive functions of the survivors such as memory, decision making and rational thinking had been shaken and focus on learning new skills and how to handle this new state was the desire for majority of the survivors. For those who were going through grief, counselors challenged them to release their deceased friends to the world of the dead. The

survivors who still felt attached to their friends were reminded that the world of the dead and the living could not coexist and it was time to let go the deceased friends. Participants felt it was premature to let their friends go before properly mourning for the loss. One participant said,

> Two weeks was not enough for me to have finished with my deceased friends. I wanted more time to mourn, cry and remember my friends before I could let them go. I needed to know how to live with the memory of my dead friends before I could know how to let them go. (Participant 03, personal communication, March 1, 2018).

The exploration of coping strategies after trauma experience has been supported by the findings of Oginska and Zadworna (2018) who reported that avoidance strategies played a greater role in posttraumatic growth than strategies focusing on the problem. The study used quantitative approach with a sample of 80 emergency medical workers. Similar findings were reported by Oginska and Kobylarczyk (2017) who found that seeking social support and other coping strategies enabled people who had experienced trauma to adapt to the situation and development of posttraumatic growth. The urge of the participants to be given coping strategies also implied that counselors could have relied heavily on exploration of the past at the expense of examining future possibilities for the survivors. There was need to diversify the counseling techniques for trauma survivors to include cognitive approaches that focus on teaching new competencies and skills.

4.10.1.7 Follow-up Sessions

Most participants noted that the counseling they received was an event and not a process. They reported to have felt abandoned abruptly upon the expiry of the timelines that had been set for counselling. They observed that the process started without focus on

relationship building and termination occurred abruptly after which total silence between the counselors and survivors followed. Survivors recalled how counselors hurriedly took them through the counseling process, promised to make calls to follow up on the progress but ended up not following up at all. Some survivors reported struggling with disturbing dreams after termination of the counseling but lacked anyone to help them understand what was happening. One participant said,

> I think the counselors had an assignment to complete. Our healing was not their priority. The most important business they had was to finish the counseling on time and get paid. After the first month, reality of the attack really struck me but there was no counselor. Those who had taken me through the sessions were not available yet I still needed support and reassurance that all was well (Participant 08, personal communication, March 3, 2018).

It was evident that survivors wanted a longer relationship with the counselors with a gradual process of termination. They preferred to be involved in the termination process and given support beyond the stipulated counseling timelines. A few survivors who received the services of peer counselors reported very satisfactory post counseling adjustment. They felt understood by the peer counselors who were available for follow-up even after the official counseling period was over. The absence of counselors after the debriefing period was interpreted by some participants as loss. This added to the other losses they had suffered from the attack. A few of the survivors reported weakened trust after failure of the counselors to follow up as breaking of the promise of follow up through telephone was betrayal. Participant 01 said, *"I still struggle with trust issues. The little trust I had developed during counseling*

was shattered by counselors who never showed interest in me upon completion of the sessions." (Participant 01, personal communication, March 2, 2018).

This was supported by the findings of Wu, He, Jiang, Zou, Liu, Zhou et al (2016) who conducted a study using a sample of 254 smoking addicts on counseling follow up. Telephone follow up was conducted from one week up to six months after termination of counseling. The findings of showed that additional follow up counseling doubled the quit rate among cigarette smokers. Follow up is not as intensive as the main counseling sessions but it appears to be vital in the change or growth process of clients and survivors of adversity. According to Corey (2009), follow up in counseling is a crucial component that can greatly enhance the outcome of counseling. Follow up helps in evaluating the effectiveness of the counseling process, the areas needed for improvement and addressing the emerging issues after termination of the counseling sessions. In the current study the desire to have had follow up sessions by the survivors could be an indication for post counseling issues that may have developed after termination.

4.10.1.8 Other Losses from the Attack

Participants felt that counselors focused on loss as a result of death and ignored other multiple loses that they had suffered. The losses included destruction of their property, loss of time as a result of disruption of study time and loss of peace among others. To some survivors parents abandoned them and even stopped paying fees when they heard that the government and Red Cross were offering help. They perceived it as an income generating activity through donations from well-wishers. The issues that counselors focused on could were of concern to the survivors but some of the survivors felt that they had other more pressing issues to address first. Participant 08 asked, *"How can I be counseled for psychological peace when I still had*

problems with paying my fees and buying food?" (Participant 08, personal communication, March 2, 2018)

The participants hoped for a holistic approach to counseling but majority of the professional counselors focused on the trauma. The causes of the trauma and perpetuating factors for the trauma were not explored at individual level. The survivors felt that some of their major concerns were not addressed effectively as a result of treating them as a group and not as individuals with unique ways of responding to crisis. For some of the participants, the terror attack was the most traumatizing issue, to others it was the death of their colleagues, to others it was loss of property and disruption of life routine while for others it was the pain that their entire family was going through as a result of the attack. Had counselors taken enough time to explore the multiple issues at individual level and work on the problems from the clients' point of view, the survivors would have been empowered more to work on their issues. Participant 06 reported,

> I appreciated the services of the counselors, but a large percentage of the healing I received came from my own painful struggle with the pain of going through this attack…. Am still discovering other issues of disturbance that I have not even started handling (Participant 06, personal communication, March 1, 2018).

The psychological impact of terrorism remains among the most complex traumas to deal with since survivors experience so many losses within the same period (Ahmed &Amer, 2012). The issues of concern for the terror survivors included their experience of the traumatic event, loss of their colleagues, destruction of their property, disruption of studies and normal routine, settling in a new environment and pain of their parents among others. As reported by most participants, the counselors' focus was the participants' experience of the terror attack

and the accompanying negative emotions. It was therefore evident that counseling of the survivors was terminated with many unfinished issues that probably seemed not important to the counselors yet vital to the participants. This could also justify why participants felt that screening should have been done to identify their priorities in the issues addressed during the counseling process.

4.10.19 Spiritual Issues of Survivors

Some participants believed that counseling did not focus on the spiritual aspects of their life. The attack raised many existential questions that could not be answered. The survivors had seen their colleagues executed as a result of their faith and some had their own faith shaken. Survivors doubted the saving power of God, since some of their devout friends had been murdered while in prayer. Death had initiated intrapersonal debate as to whether or not God was real. As survivors kept asking this questions, at personal level they had felt God had saved them from the attackers. This bipolar experience with God left them more confused on matters of faith. This confusion was either ignored by counselors or addressed using cognitive approaches which did not make sense to the survivors. Majority of participants believed in life after death and hoped to meet the deceased colleagues some day in the future. However some counselors confronted this by encouraging the survivors to disengage with the dead. One participant reported,

> My local church really helped me sort out my confusion about God. With my pastor we got examples from the Holy Scriptures of people who had gone through worse experiences. Some of my questions were answered. Through prayer I let God know my pain and how I felt abandoned by him. My healing started here (Participant 10, personal communication, March 3, 2018).

Participants who did not connect with their spiritual leaders felt they still had a number of spiritual issues that were not addressed effectively by the counseling process. Some participants felt they needed prayer before and after counseling but the kind of counseling offered did not offer such an opportunity. They believed the counselors should have worked in partnership with God in order to find answers to the difficult questions they had. Others who were not committed to God before the attack developed great zeal for God but they felt no one was there to help them actualize this decision.

This is consistent with the findings of Vanhooren, Leijssen, Dezutter, (2017) who found significant mean differences between those who received help from a chaplain and those who did not. The study reported that trauma survivors who received chaplaincy services recorded higher posttraumatic growth levels compared to those who did not. The findings of Shaw, Joseph and Linley (2007) showed that religion and spirituality were beneficial to people in the aftermath of trauma. The study established that traumatic experience led to deepening of religiosity and spirituality. Participants in the current study to a large extent felt the lack of spiritual approach in the counseling offered. This could imply that most of the existential questions that might have emerged after the terrorist attack remained unanswered after termination of counseling.

According to the organismic valuing theory, organismic valuing process begins, where existential questions are asked with the aim of seeking for meaning to understand the significance of the traumatic event (Joseph & Linley, 2005). Meaning searching may lead to either negative accommodation through reactions of hopelessness, helplessness and pain; or positive accommodation through improved relationships, change of personal philosophy and change of self-view. Religion and spirituality are known to create hope, meaning and initiate

review of life philosophy (Triplett, Tedeschi, Cann, Calhoun, Reeve, 2012). As reported by the participants in the current study, exploration of spirituality and religious dimension of the survivors could have to a large extent led to better resolution of trauma and enhanced posttraumatic growth through processing of existential difficulties.

4.10.1.10 Evaluation of the Counseling Offered

Majority of the participants reported that they were not given time to evaluate the process and sessions. They felt the entire process had solely depended on the counselors and not them. For instance the decision on when to start counseling, when to terminate and how the survivors were responding to the counseling were all left to be interpreted and decided by the counselors. Participants felt that the help they received from counseling could have been maximized if regular evaluation of the process was done to get their views and give feedback on the relationship. One participant said, *"I believe some of my key issues in relation to the attack were never addressed because the counselors did not take time to find out how their sessions were impacting on me."*(Participant 04, personal communication, March 3, 2018).

The same sentiments were expressed by participant 02 who reported, *"If the counselor had asked me to rate the sessions I could have let him know that I was not ready for termination of the process."*(Participant 02, personal communication, March 2, 2018). The participants envisioned a comprehensive and regular evaluation process as part of the counseling process but the counselors, bound by time factor, rushed in carrying out the entire process as a crisis.

The finding of See and Ng (2010) highlighted the importance of evaluation in counseling which agreed with the findings of the current study. This was supported by Jaladin (2011) who found that evaluating counseling outcomes was a key component of counseling. Evaluation of the counseling process is a feedback exercise that could allow the consumers of

counseling services to rate the quality of services received. In the current study participants were not exposed to this and most of them felt left with important information that could have assisted the counselors in offering better services in future. The issues raised by participants in the current study on the quality of counseling services received after the terrorist attack point at serious gaps in the training, recruitment and supervision of counselors. These should be areas of focus by the various professional counseling bodies in the country in order to minimize harm to clients.

4.10.2 Suggestions for Improvement in Counseling Future Crisis Survivors

Participants were asked to suggest some of the improvements that counselors need to implement during future crisis interventions. The responses were categorized and six different themes were identified.

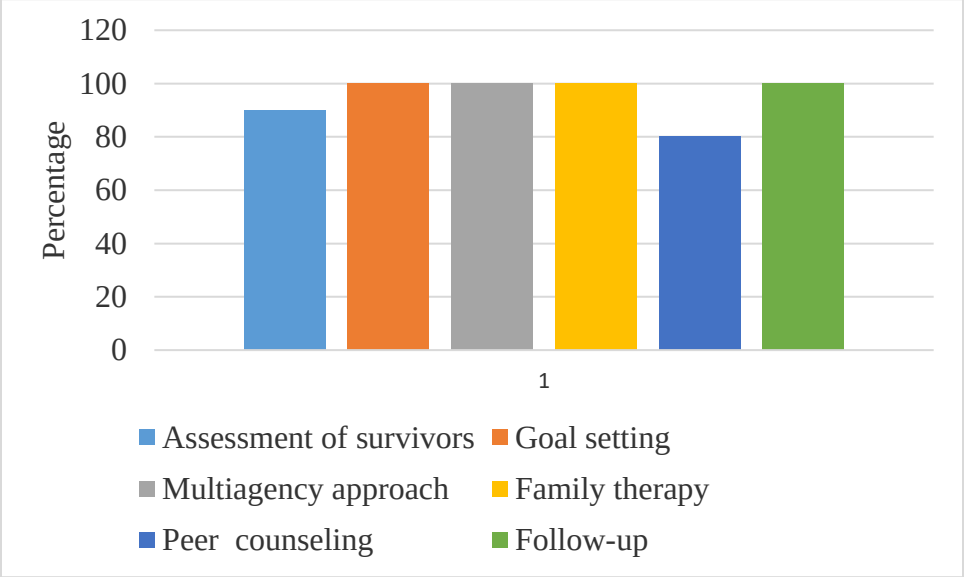

Figure 13. Themes on improvements for future crisis counseling

4.10.2.1 Assessment of Survivors

Participants felt that assessment of clients should be done before counseling crisis survivors. Assessment would be beneficial to both the counselors and clients as it would guide the grouping of clients. Some survivors were of the view that assessment would compel the counselors to involve them in the treatment process and reduce the chances of all survivors being generalized in terms of severity of their issues and the intervention strategies. Participants reported that they would wish to guide the counselors on when they are ready to start or terminate the counseling sessions. Mixing of clients with varied degrees of the issue at hand was undesirable to all participants as some felt it affected the quality of services they received from their client. One participant said, *"Next time I would prefer a counselor who understands me. The best counselor would have been the one who has gone through an attack because he would have captured my real issues at every stage."* (Participant 06, personal communication, March 1, 2018).

Even though counseling of terrorist survivors is treated as crisis counseling, the process of counseling should not be rushed and taken as crisis. Professional ethics ought to be upheld and possible malpractices that may harm clients eliminated. Various scholars assert the need for assessment through various forms ranging from screening of survivors (Mustaffa, Afsaneh & Ahmad 2013), follow up (Wu, He, Jiang, Zou, Liu, Zhou et al, 2016) and process evaluation (Jaladin, 2011). This would better the therapeutic relationship and improve on the counseling outcomes among the survivors. Professional bodies dealing with recruitment of the counselors during times of crises should insist on professionalism even if the counseling services are offered on voluntary basis.

4.10.2.2 Goal Setting for the Sessions

Participants felt that counselors should have ignored media reports and sought to know from the survivors the key issues to be addressed. They observed that due to the publicity given to crisis by the media, counselors were tempted to approach crisis victims with formed up mind on what their needs were. However majority of the participants expressed their desire to be involved in setting counseling goals as this would have helped capture their real issues without generalizing.

Goals setting in psychotherapy has been investigated by Emiliussen and Wagoner (2013) with focus on conflicts in the position of therapists. The study investigated the kind of goals set and whether they were reached. The findings reported that goals were achieved if they were based on negotiation between the therapist and the clients. Jansson, Tham and Ramnero (2015) also found that therapeutic goals were a vital component of the psychological processes. The study noted that therapeutic goals were rarely assessed in clinical practice and research. Setting goals as a therapeutic alliance between the client and therapist could have enhanced the outcomes of counseling and consequently the process of posttraumatic growth among the participants of the current study. The findings of Ramnero and Torneke (2014) agreed with these findings asserting that goals inform the direction of behaviour during therapy.

4.10.2.3 Multiagency Approach

Survivors had expressed their dissatisfaction for the manner in which psychological help was preferred as the most immediate intervention yet they had so many other losses and issues that required help. The need for food, replacement of lost items, and spiritual issues, were among the concerns that survivors felt could be addressed together with the psychological

issues on which counseling was based. In this case counselors could act as facilitators and link the survivors with other helping professionals such as social workers, nurses and spiritual leaders to ensure the counseling offered addressed the client issues holistically. Participant 10 stated *"How could counseling be relevant to someone who was in pain but no medical attention and someone who was hungry but no food to eat?"* (Personal communication, March 2, 2018).

The participants believed that their needs were hierarchical with the psychological needs being at the highest level of the hierarchy. There was general consensus among the participants that counseling ignored their lower and more basic needs and instead focused on the higher psychological needs. Most of those who felt they were not ready by the time counselors began intervening agreed that it was their basic and immediate needs that blocked them from responding to counseling positively.

This was confirmed by the findings of Amanda and Tregidga (2007) who recommended increased communication between agencies and victims. In the current study, the survivors could have been connected with various agencies addressing their specific needs. For instance it is not within the sphere of counselors to give food or monetary help to clients but through collaboration with social workers and aid agencies they would have helped in meeting the needs of the clients.

4.10.2.4 Family Therapy

All the interviewed survivors were of the view that crisis counseling should not only be directed to the survivors but also the entire family of origin. The participants felt that when the trauma of the entire family is addressed, the healing would be holistic and more permanent. Focus on the survivor alone was reported to worsen the situation for the unresolved trauma of the other family members spread back to the survivors. To majority of the survivors, exposure

to traumatized family members was a source of vicarious trauma for the survivors. Participant 05 (Personal communication, March 3, 2018) reported, *"The family of origin of the survivor should be counseled together with the survivors. Neglecting the family is like postponing the healing process."*

The practice of family counseling has been known to be an effective method of counseling that focuses on the family as a system (Mustaffa, Afsaneh & Ahmed, 2013). Family counseling philosophy posits that when one member of the family is psychologically unhealthy the entire family is unhealthy. The desire by participants of the current study to have counseling services extended to their family members was an indication that addressing the psychological wounds of trauma survivors only was not effective in mitigating the pain. It was evident that the source of pain of the survivors may have been shifted from the perpetrators of the terrorist attack to the unresolved trauma of their close relatives and friends.

4.10.2.5 Peer Counseling

There was a general agreement among the survivors that peer counselors played a bigger role I the healing process. These were fellow survivors who had been counseled and later offered short training in order to be able to offer psychological support to their recovering colleagues. Most participants who were helped by peer counselors reported being well understood, being given adequate time in the counseling process. Others felt that peer counseling removed the professional barrier between counselors and the survivors which paved way for deeper sharing of issues and holistic recovery from the attack.

Participant 10 (Personal communication, March 2, 2018) said,

> …as for me I received the greatest help from peer counselors. They were available during sessions and after. We continued sharing with them without so much focusing on time. I felt they were readily available for me as opposed to the other counselors.

Bartone, Bartone, Gileno, Violanti, (2018) recommended peer counselling as a counseling strategy to enhance healing from trauma. They observed that peer counselors were easily accessible and had shared experience to clients. The participants in the current study had expressed much trust in the peer counseling due to their shared experience.

4.10.2.6 Follow Up for Survivors

The survivors felt that future counseling sessions should have a strong follow up component since no client would wish to be abandoned. They felt they needed to walk with counselors and receive support for a longer period even after termination of the sessions. Participant 02 observed,

> I know we went through a crisis which was an emergency but our healing process should not have been treated as an emergency. We needed enough time and patience from counselors in order to process our healing normally instead of the rush we witnessed (Participant 02, personal communication, March 3, 2018).

Counseling follow up has been demonstrated to be a vital part of the counseling process that could enhance the counseling outcomes and therapeutic relationship (Wu, He, Jiang, Zuo, Zhou et al, 2016). The desire by the participants in the current study to have it shows an unmet need that could go a long way in enhancing the quality of crisis counseling in future.

4.10.3 Hypothesis Testing

This study examined the relationship between number of counseling sessions attended and posttraumatic growth using multiple regression analysis. The study hypothesized that, 'There was no significant relationship between number of counseling attended and posttraumatic growth of Garissa University terror survivors. One way ANOVA was used to test the group differences. The findings were presented in Table 31 below.

Table 31

Mean Differences in Posttraumatic Growth based on the Number of Counselling Sessions

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
New possibilities	Between Groups	9.636	3	3.212	4.977	.002
	Within Groups	122.624	190	.645		
	Total	132.260	193			
Personal strength	Between Groups	3.209	3	1.070	1.339	.263
	Within Groups	151.793	190	.799		
	Total	155.002	193			
Appreciation of life	Between Groups	1.362	3	.454	.500	.683
	Within Groups	172.506	190	.908		
	Total	173.867	193			
Spiritual change	Between Groups	13.124	3	4.375	3.713	.013
	Within Groups	223.876	190	1.178		
	Total	237.000	193			
Total posttraumatic growth	Between Groups	1730.492	3	576.831	3.081	.029
	Within Groups	35571.446	190	187.218		
	Total	37301.938	193			

The study found that there were statistically significant mean differences in posttraumatic growth domains new possibilities ($F(3,190) = 4.97$, $P < 0.05$), spiritual change ($F(3, 190) = 3.713$, $p < 0.05$), and total posttraumatic growth ($F(3, 190) = 3.081$, $p < 0.05$) based on the number of counseling sessions attended. The study found no statistically significant mean differences in posttraumatic growth domains personal strength and appreciation of life.

This finding implies that there were general significant mean differences in posttraumatic growth and number of counseling sessions attended because the p-value was less than the standard probability ratio of 0.05. This means that counseling was significant in explaining the variation in posttraumatic growth except for personal strength and appreciation of life. We therefore reject null hypothesis and adopt the alternative hypothesis. We conclude that there were significant mean differences in posttraumatic growth (new possibilities, spiritual change and total posttraumatic growth) based on the number of counseling sessions attended by Garissa University terrorist attack survivors. This is consistent with the findings of Vanhooren, Lijssen and Dezutter (2018) who found significant posttraumatic growth mean differences between those who attended psychotherapy and those who did not. From the organismic valuing theory (Joseph & Linely, 2005), individuals have inborn ability to growth without external influence. This was justified by the current study which found substantial levels of posttraumatic growth among the Garissa University terrorist attack survivors. However from this hypothesis, it is also evident that counseling could enhance posttraumatic growth. Even though the potential for growth is inborn, counseling which is an external process may help individuals activate this innate nature to seek growth after adversity.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the Study

The general purpose of the study was to investigate the relationship between trauma processing strategies and posttraumatic growth among terrorist attack survivors at Garissa University. The review of related literature associated with trauma processing strategies and posttraumatic growth was done. The study adopted the mixed methods sequential explanatory design, combining the correlational and phenomenological research design. The target population consisted of 650 former Garissa University students who survived the terrorist attack and later transferred to Moi University main campus to complete their studies. The researcher used simple random sampling to select 247 students for quantitative data. Extreme case sampling technique to select 10 students and automatic inclusion to select 10 parents for qualitative data. The total sample used in the study was 257 participants of which 10 were parents.

Data were collected using standardized questionnaires, a self-developed questionnaire and interview guides. Trauma experts and PLC-5 were used to validate the self-developed questionnaire. Quantitative data were analyzed using univariate and correlation analysis. Qualitative data were coded, categorized and presented in form of themes and narratives. Frequency tallying was adopted to designate the anticipated responses to the themes, which associated with the phenomenon. The data analysis enabled the investigator to construct and develop major findings guided by the research objectives and questions.

5.2 Summary of the Findings

5.2.1 Prevalence of Initial Trauma Symptoms and Processing Strategies among the Garissa University Terrorist Attack

The study found that the most prevalent trauma symptoms experienced by Garissa University terror attack survivors included being extremely alert of any threat (82.5%), having regular flash backs of the attack (77.8%), trying hard to push away thoughts related to the attack (72.7%), persistent negative emotions (69.1%), terrifying dreams (68.6%) and pushing away thought related to the attack (68.5%). The least prevalent trauma symptoms experienced by the survivors included not being able to remember key issues related to the attack (27.3%), self-blame for failing to avoid the attack (30.5%) and development of self-destructive behaviour (34.5%).

The study identified four initial trauma processing strategies that were employed by the survivors of Garissa terrorist attack. The most prevalent strategy was intrusion response (27.7) followed by avoidance response (27.4%) arousal response (23.7%) with the least prevalent initial trauma processing strategy being cognitive alteration (21.2%). The study found weak positive statistically significant correlation between posttraumatic growth and initial trauma processing strategies, intrusion response and arousal response.

5.2.2 Indicators of Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

The study reported relatively higher posttraumatic growth on all the dimensions compared to other global cited studies. All the posttraumatic growth dimensions except new possibilities were replicated from interview data. All the interviewed participants reported spiritual change as spiritual growth. This was exhibited through increased commitment to God

and participation in religious ritual. This was also reported by parents of the survivors who were asked to report on the observable changes they had noted in the survivors since the attack. Personal strength was reported by participants as improved self-efficacy and self-esteem. Participants reported to have experienced stronger belief in themselves and sense of improved self-worth after the attack. Relating to others was reported by participants as interpersonal relationships. Participants experienced expanded number of friends and improved quality of the existing friendship with others after the attack.

This was also reported by parents of participants who cited improved quality of relationship with them since the attack. Appreciation of life was reported by the interview participants with majority reporting to have learnt to be thankful for what they had in life and counting their blessings. A new dimension namely altruism was also reported by the participants. They noted that since surviving the attack, they had developed more concern for the welfare of others and that sharing their resources with other had become a norm. From the findings, both quantitative and qualitative tools confirmed the posttraumatic growth dimensions.

5.2.3 Demographic Differences in Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

The findings revealed that there were no significant demographic differences in posttraumatic growth among the Garissa University terrorist attack survivors. However, slight differences were noted in certain demographic factors even though without statistical significance. Gender differences showed that women recorded higher growth than men.

In terms of age of participants, relating to others, spiritual change, appreciation of life and personal strength domains had higher means among the younger participants and the

lowest means among the older participants. New possibilities had a higher mean among the older participants compared to the younger ones. In terms of marital status of the participants, spiritual change and relating to others was greater among the married than single participants. Personal strength and appreciation of life was greater among the single participants with new possibilities being reported equally among the married and single participants.

5.2.4 Relationship between Initial Severity of Trauma and Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

The results show that high trauma severity was experienced by 41.24% of the participants, with moderate severity being experienced by 54.64%. Only 4.12% experienced low trauma severity after the Garissa University terrorist attack. This shows that the terrorist attack was significantly detrimental to the psychological functioning of the survivors. The study also found substantial demographic differences in trauma severity among the Garissa University terrorist survivors. In terms of age high trauma severity was more prevalent among the younger participants with the prevalence steadily decreasing as age increased. Moderate trauma severity was more prevalent among the older participants with prevalence steadily reducing as age reduced. Low trauma severity was more prevalent in the older participants with prevalence steadily reducing with decrease in age. In terms of gender high trauma severity was more prevalent among female participants compared to male participants.

On the marital status of participants, high trauma severity was more prevalent among single participants than the married. Moderate and low trauma severity were more prevalent among the married than single participants. Trauma severity was also experienced differently by participants of various religious affiliations. High trauma severity was more prevalent among participants of other religions followed by those affiliated to the Catholic faith, the

Protestants with the Muslims reporting the lowest prevalence. Moderate trauma severity was more prevalent among Muslim participants followed by Protestant participants, the Catholic participants with those from other religious affiliations recording the lowest prevalence. Low trauma severity was more prevalent among Protestant participants, followed by participants of other religious affiliation, and Catholics with Muslim participants recording the lowest prevalence. The study established that there was weak, positive and statistically significant correlation between initial trauma severity and posttraumatic growth of the Garissa University terrorist attack survivors.

5.2.5 Relationship between Cognitive Trauma Processing Strategies and Posttraumatic Growth of the Garissa University Terrorist Attack Survivors

The study found that majority of participants used the positive cognitive trauma processing strategies; downward comparison, positive cognitive restructuring and acceptance to a large extent in addressing their trauma after the terrorist attack. The findings showed that the initial trauma processing strategies that were exhibited in the first month of the attack had been processed and replaced by the more permanent positive cognitive trauma processing strategies. The negative trauma processing strategies were less prevalent among the survivors, which indicated that most of the Garissa university terrorist attack survivors had resolved their trauma in a healthy way. The manifestation of the negative trauma processing strategies; regret and denial three years after the attack is an indication that the illusionary side trauma may be long term.

Significant demographic differences were found in the cognitive trauma processing strategies used by the survivors. Age of participants was found to have positive correlation with acceptance strategy and negative correlation with downward comparison. Positive

cognitive restructuring, denial and regret had a curvilinear relationship with age of participants with the lowest scores being reported among the younger and older participants. In terms of gender, the study found no significant differences in the cognitive trauma processing strategies.

The cognitive trauma processing strategies were experienced differently across the various religious affiliations. Denial was lowest among Protestants followed by the Catholics, Muslims and others in that order. Regret was lowest among the Muslims and others with the highest level being reported by Protestants and Catholics. On marital status of participants, all the cognitive trauma processing strategies were higher among the married participants compared to the single participants except for acceptance which was equally experienced by each marital status.

The cognitive trauma processing strategies were correlated with posttraumatic growth scores to test association of the variables. The study found weak, positive and statistically significant correlation between positive cognitive trauma processing and posttraumatic growth among Garissa University terrorist attack survivors. The negative trauma processing strategies, regret and denial were not significant predictors of posttraumatic growth.

5.2.6 The Role of Counseling in Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

The study explored the number of counseling sessions attended by the participants, the valued added by counseling in processing the trauma, and participants' issues that counseling did not address. The results showed that majority of participants (35.57%) attended between five and ten counseling sessions after the terror attack. Some participants (29.9%) attended critical incident debriefing only while others (18.04%) attended more than 10 counseling sessions. Those who did not attend any counseling session were 16.5%. This shows that 83.5%

of all participants attended counseling sessions following the Garissa University terrorist attack.

The study also found statistically significant mean differences in posttraumatic growth in terms of the number of counseling sessions attended. The highest posttraumatic growth on all domains was reported by those who attended between 5 to 10 sessions and above 10 sessions. Spiritual change and new possibilities were highest among participants who attended between 5 and 10 counseling sessions while appreciation of life, personal strength, relating to others and overall posttraumatic growth were highest among participants who attended over 10 counseling sessions. Contrary to the expectation of this study, the lowest posttraumatic growth on all domains was reported by participants who attended critical incident debriefing only followed by those who did not attend any counseling sessions. This was a confirmation of the organismic valuing theory view of human nature which posit that human beings are born with the potential for growth and pursue happiness (Joseph & Linely, 2005).

Apart from the great value that counseling added to the survivors after the terrorist attack experience, participants felt that there were other pertinent issues that counseling did not address adequately. It was the desire for majority of the participants to have their family members taken through counseling but unfortunately the focus of counseling was directed to the survivors alone. Family members and friends of the survivors were equally traumatized by the attack but did not receive psychological help. The unresolved trauma of family members and friends was reported to be a new source of trauma for the participants. Lack of screening to assess the level of trauma affected the grouping of survivors into therapy groups. Survivors felt that they were grouped haphazardly and that this could have affected the quality of counseling offered to them in groups. Participants reported that counselors left out the spiritual

aspect in the counseling sessions. They felt that the difficult existential questions they had after the attack were not addressed by counselors. Such questions would have been addressed if the counselors engaged the spiritual dimension of the survivors. The survivors also felt that counselors did not explore the possible coping strategies for the trauma they experienced after the attack. Some felt that they were stuck in the healing process and had expected the counsellors to help them access some strategies that would have enhanced the process.

The study also found that termination of counseling process for the survivors was done instantly with no follow up sessions after the end of counseling sessions. Participants reported to have had other issues related to the trauma that required occasional consultation with their counselors yet the counselors were not available. Survivors felt that counselors should have involved them in evaluating the counseling process as this could have helped to give feedback where improvements needed to be done and which issues still required to be addressed. There was also general feeling among participants that counselors narrowed down to the emotional side of the trauma and left out other losses they had experienced.

The study also explored the improvements that counseling practitioners need to make in future crisis counseling. Assessment of survivors was reported as a key aspect of counseling that should not be left out in future counseling of crisis victims. This would ensure that the counseling process is victim centered unlike the crisis counseling that appeared to be counselor directed. Goal setting was also reported to be a key component that would ensure survivors are part of the process of treatment planning. Family therapy and follow up were also suggested in order to address vicarious trauma and terminate the sessions gradually while maintaining the therapeutic relationship. Due to the complexity of terrorism trauma and the multiple losses suffered, participants felt that all their needs and not just psychological needs required to be

addressed. Multi agency approach would be the best way to address the multiple needs of terrorism survivors. The need for peer counseling was also emphasized with participants feeling that their peers who had gone through the terror experience and later trained as peer counselors offered the best support system.

5.3 Conclusion

The purpose of this study was to: (a) to examine the prevalence of initial trauma processing strategies and symptoms among the survivors of Garissa University terror attack, (b) to explore the indicators of posttraumatic growth among survivors of Garissa University terror attack, (c) to assess demographic differences in posttraumatic growth among survivors of Garissa University terror attack, (d) to determine the relationship between initial severity of trauma and posttraumatic growth among survivors of Garissa University terror attack, (e) to determine the relationship between cognitive trauma processing strategies and posttraumatic growth among survivors of Garissa University terror attack and (f) to evaluate the role of counseling in posttraumatic growth of trauma survivors.

The study concluded that there was statistically significant weak positive relationship between posttraumatic growth and initial trauma processing strategies. The strategies: cognitive alteration response, arousal response and intrusion response were significant predictors of posttraumatic growth unlike avoidance response which was not significantly related with PTG. All the posttraumatic growth domains: relating to others, spiritual change, new possibilities, personal strength, appreciation of life, and total posttraumatic growth, were replicated in this study.

The study found statistically significant weak positive relationship between trauma severity and posttraumatic growth. High posttraumatic growth means were reported among

participants who experienced low and high trauma severity with the lowest means being recorded by those who experienced moderate trauma severity. The study found statistically significant weak positive relationship between cognitive trauma processing strategies and posttraumatic growth. The positive cognitive trauma processing strategies: downward comparison, positive cognitive restructuring and acceptance were found to be positive predictors of posttraumatic growth. The negative cognitive trauma processing strategies: regret and denial were not significant predictors of posttraumatic growth. The study concluded that there was statistically significant weak positive relationship between the number of counseling sessions attended by the survivors and posttraumatic growth. The highest posttraumatic growth was recorded by the participants who attended at least 5 counseling sessions followed by those who did not attend any counseling sessions. Contrary to the expectation of this study participants who attended critical incident debriefing only reported the lowest posttraumatic growth.

5.4 Recommendations

Recommendations were made to five stakeholders who would be vital in the implementation of the findings of this study. These stakeholders include the practicing counseling psychologists, humanitarian organizations, counseling psychology professional bodies, higher learning institutions and the Ministry of Health.

To counseling practitioners, this study recommended dual dimensional approach to trauma with focus on pathological and transformational sides of trauma. The correlations found between trauma processing strategies and posttraumatic growth in this study may be of great help to counseling psychology practitioners in designing trauma counseling interventions that are growth oriented. The trauma processing strategies that positively correlated to

posttraumatic growth may be emphasized by the counselors when handling trauma victims as trajectories to posttraumatic growth. The study will be beneficial to counseling psychology professional bodies as the gate keepers of the profession. Some of the issues raised by survivors as areas that counseling did not address such as lack of screening, follow up, and evaluation of the counseling process, are fundamental issues that touch on quality assurance in counseling. The findings of this study will be relevant to the professional bodies to remain vigilant and supportive to counselors in order to reduce harm to clients.

Higher learning institutions may also use the findings of this study to improve their counseling programmes. As noted by this study, there exist gaps in research and practice of counseling as far as posttraumatic growth is concerned. The study of posttraumatic growth in Africa and specifically Kenya is still scarce, yet literature and the findings of this study show that posttraumatic growth can complement the existing trauma counseling approaches. The awareness created by this study may guide institutions of higher learning in incorporating posttraumatic growth as an important aspect of their academic programmes.

Humanitarian organizations may find the results of this study relevant in guiding their future interventions in crisis situations. Some of the unaddressed issues raised by the survivors such as exclusion of family members and friends from the counseling programmes after the attack and neglect of other losses suffered lie in the jurisdiction of these organizations. This may guide the organizations when allocating funds for emergency response to ensure that counselors are facilitated to expand their services to families and friends of survivors. The material losses and disruption of life of survivors may also be incorporated when budgeting for rescue operation so as to complement the crisis counseling interventions.

The Ministry of Health as the custodian of public health may find this study relevant in mental health policy formulation. As noted in this study, terrorism is a psychological war that aims at physically harming few people to psychologically devastate masses. The focus of counseling and rescue programmes on few survivors alone implies that a large percentage of the general public remains traumatized due to vicarious trauma. The findings of this study may help the ministry formulate policies that will ensure the mental health of the general public after traumatic events is addressed. The overall coordination of rescue and psychological intervention in times of crisis should not be left to the humanitarian and professional bodies, especially at such a time when counseling psychology regulation in Kenya is being done by multiple competing regulatory organizations. There is need to regulate this important mental health sector from a single authority anchored in the ministry of health.

5.5 Recommendations for Further Research

As revealed by this study, participants who attended critical incident debriefing only reported the lowest posttraumatic growth on all domains. With critical incident debriefing being the most common intervention in the aftermath of traumatic events, further research should focus on the effectiveness of this approach in trauma response.

Majority of studies conducted on trauma processing strategies did not explore the demographic differences in depth. Future studies should analyze demographic differences in trauma processing strategies for deeper understanding of individual differences in trauma processing.

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Appendix A: Consent Letter for Participants

The Catholic University of Eastern Africa

P.O. Box 62157- 00200

Nairobi, Kenya

Dear Respondent,

Asatsa Stephen is a post graduate student at the Catholic University of Eastern Africa, pursuing Doctor of Philosophy Degree in Counselling Psychology. He is carrying out a study on **Trauma Processing Strategies and Posttraumatic Growth among Terrorist attack Survivors at Garissa University, Kenya.**

You are kindly requested to participate in this research by filling the attached questionnaire. The shared information shared will be treated confidentially and anonymity will be ensured. You have the freedom to accept or decline to participate in the research or withdraw at any point during the process. If you voluntarily accept to participate in the study, kindly append your signature.

Participants Signature_____Date_____

Researcher's Signature_____Date_____

Thank you for your availability to participate in this study.

Asatsa Stephen

Cell phone: 0716842028

Email: asatsas@yahoo.com

Appendix B: Posttraumatic Stress Disorder Checklist (PCL5) for Pilot Study

Section A: Demographic Information

Instructions: Please read the following questions carefully and fill in the blank spaces or put a tick ( ) in the brackets where appropriate:

1. Gender: Male ( ) Female ( )
2. Age ( )
3. Religious Affiliation: Protestant ( ) Catholic ( ) Muslim ( ) Hindu ( ) Traditionalist ( ) Others ( )
4. Marital status: Single ( ) Married ( ) Divorced ( ) Widowed ( )
5. Number of counseling sessions after the attack None ( ) 0-5 ( ) 5- 10 ( ) above 10 ( )

Section B: Trauma Reactions

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you were bothered by that problem in the first month following your experience of Garissa University terror attack. **In the first month, how much were you bothered by:**

	Not at all	**A little bit**	**Moderately**	**Quite a bit**	**Extremely**
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	0	1	2	3	4

4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4
14. Trouble experiencing positive feelings?	0	1	2	3	4
15. Experiencing frequent anger?	0	1	2	3	4
16. Engaging in risky behaviour?	0	1	2	3	4
17. Being alert to signs of threat?	0	1	2	3	4
18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

Appendix C: Questionnaire for Survivors

Section A: Demographic Information

Instructions: Please read the following questions carefully and fill in the blank spaces or put a tick ( ) in the brackets where appropriate:

6. Gender: Male ( ) Female ( )
7. Age ( )
8. Religious Affiliation: Protestant ( ) Catholic ( ) Muslim ( ) Hindu ( ) Traditionalist ( ) Others ( )
9. Marital status: Single ( ) Married ( ) Divorced ( ) Widowed ( )
10. Number of counseling sessions after the attack None ( ) 0-5 ( ) 5- 10 ( ) above 10 ( )

Section B: Initial Trauma Response Scale (ITRS)

Instructions: Below is a list of statements that describe how you might have reacted after the Garissa terrorist attack. Please read each statement and indicate to what extent you might have experienced the reaction on a scale of 0-4 with 0 being Never and 4 being Regularly.

Within the first month after the attack:

I worked hard to push away thoughts related to the attack	0	1	2	3	4
I could not remember key issues related to the attack					
I often felt emotionally separated from others					
I became extremely alert to any perceived threat					
I developed the tendency of easily getting angry					
I often avoided conversations about the attack					
I suddenly lost interest in activities I enjoyed before the attack					
I often experienced terrifying dreams					

I often experience physiological reactions (sweating, faster heartbeat, trembling) after exposure to reminders of the attack					
My normal sleeping pattern was disrupted					
My concentration span on events reduced					
I often blamed myself for failing to avoid the attack					
I developed self-destructive behaviour					
I often avoided all reminders of the attack					
I often experienced flashbacks of the attack					
I developed recklessness in my day to day behaviour					
I experienced negative emotions related to the attack					
I experienced prolonged pain after exposure to reminders of the attack					

Section C: Posttraumatic Growth Inventory (PTGI)

Indicate for each of the statements below the degree to which this change occurred in your life as a result of your experience with Garissa University terror attack using the following scale of 0-5.

0= I did not experience this change as a result of my crisis.

1= I experienced this change to a very small degree as a result of my crisis.

2= I experienced this change to a small degree as a result of my crisis.

3= I experienced this change to a moderate degree as a result of my crisis.

4= I experienced this change to a great degree as a result of my crisis.

5= I experienced this change to a very great degree as a result of my crisis.

Statements

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 I changed my priorities about what is important in life. ( )
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 which 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. ( )

Section D: Cognitive Processing of Trauma Scale (C-POTS)

Please rate the extent to which you agree with each of the following statements, using the following rating scale.

_3, strongly disagree;

_2, moderately disagree

_1, slightly disagree

0, neither mainly agree nor disagree

1, slightly agree

2, moderately agree

3, strongly agree

Statements

1. There is ultimately more good than bad in the trauma experience ( )

2. I have figured out how to cope ( )

3. I say to myself ‘this isn’t real’ ( )

4. I have moved on and left this event in the past ( )

5. Overall, this event feels resolved for me ( )

6. I have come to terms with this experience ( )

7. I often think, ‘if only I had done something different’ ( )

8. I blame myself for what happened ( )

9. I refuse to believe that this really happened to me ( )

10. I wish I could have handled this differently ( )

11. Other people have had worse experiences than mine ( )

12. I act as if this event never really happened ( )

13. Even though my experience was difficult, I can think of ways that it could have been worse ( )

14. My situation is not so bad compared to other peoples’ situations ( )

15. I am able to find positive aspects of this experience ( )

16. I have been able to find a ‘silver lining’ in this event ( )

17. I pretend this didn’t really happen ( )

Appendix D: Interview Guide for Survivors

Section A: Demographic Information

Instructions: Please read the following questions carefully and fill in the blank spaces or put a tick ( ) in the brackets where appropriate:

1. Gender: Male ( ) Female ( )
2. Age ( )
3. Religious Affiliation: Protestant ( ) Catholic ( ) Muslim ( ) Hindu ( ) Traditionalist ( ) Others ( )
4. Marital status: Single ( ) Married ( ) Divorced ( ) Widowed ( )
5. Occupation: Student ( )
6. Relationship to the survivor Parent ( ) Friend ( ) Spouse ( )

Section B: Indicators of Posttraumatic Growth

Following your experience with Garissa university terror attack:

1. How do you compare your spirituality now and before the attack? What are some of the spiritual activities you have been involved in since the attack?
2. What are some of the changes you have noted in the way you relate with others since the attack?
3. How has your general view of life changed since the attack?
4. Are there some personal qualities you have developed since the attack? What are they?
5. What are some of the new opportunities you discovered in your life after the attack?
6. What other areas in your life would you say you have changed?

Section C: The role of Counseling in Posttraumatic Growth

1. Did you receive some counseling? If yes how many sessions?
2. Do you feel the counseling you received added some value in your life after the attack? If yes how?
3. What aspects of your challenges do you feel counseling did not address?
4. What improvements do you think counselors should work on while handling future crisis victims?

Appendix E: Interview Guide for the Survivors' Parents

Section A: Demographic Information

Instructions: Please read the following questions carefully and fill in the blank spaces or put a tick ( ) in the brackets where appropriate:

1. Gender: Male ( ) Female ( )
2. Age ( )
7. Religious Affiliation: Protestant ( ) Catholic ( ) Muslim ( ) Hindu ( ) Traditionalist ( ) Others ( )
8. Marital status: Single ( ) Married ( ) Divorced ( ) Widowed ( )
9. Relationship to the survivor Parent ( ) Friend ( ) Spouse ( )

Section B: Indicators of Posttraumatic Growth

Following the involvement of your friend/ daughter/ son/ wife/ husband in Garissa university terror attack:

7. How do you compare his/her spirituality now and before the attack? What are some of the spiritual activities she/he has been involved in since the attack?
8. What are some of the changes you have noted in the way he she relates with others since the attack?
9. Are there some personal qualities he/she has developed since the attack? What are they?
10. What other areas in his/her life would you say have changed since his/her involvement in Garissa terrorist attack?

Appendix F: Published Articles

The International Journal of Indian Psychology
ISSN 2348-5396 (e) | ISSN: 2349-3429 (p)
Volume 6, Issue 3,DIP: 18.01.041/20180603
DOI: 10.25215/0603.041
http://www.ijip.in | July-September, 2018

The International Journal of INDIAN PSYCHOLOGY

Research Paper

Relationship between Initial Trauma Processing Strategies and Posttraumatic Growth among Survivors of Garissa University Terrorist Attack, Kenya

Asatsa Stephen[1]*, Dr. Sabina Mutisya[2], Dr. Bethwell Owuor[3]

ABSTRACT

The study investigated the predictive relationship between initial trauma processing strategies and posttraumatic growth among Garissa University terrorist attack survivors. The study was anchored on the organismic valuing theory after adversity, and adopted the correlation research design. A total sample of 200 participants was selected using simple random sampling technique. Quantitative data were collected using a standardized questionnaire, the21 item Posttraumatic Growth Inventory (PTGI) and Initial Trauma Processing Scale (ITRS). Data were analyzed using univariate analysis, Pearson correlation and multiple regression analysis. The study found positive significant relationship between initial trauma processing strategies and posttraumatic growth among the survivors of Garissa University terrorist attack ($R2=0.121$, $F=6.474$, $P\leq0.05$). The study further found that intrusion response and arousal response strategies were significantly and positively related to all the 6 posttraumatic growth domains: relating to others, personal strength, spiritual change, appreciation of life, new possibilities and overall posttraumatic growth. Cognitive alteration strategy was significant and positively related to 2 the posttraumatic growth domains: appreciation of life and total posttraumatic growth. Avoidance response strategy was not related to any of the posttraumatic growth domains. These findings may be relevant in designing future interventions for trauma survivors that are growth focused as complementary approaches to the existing crisis-focused counseling.

Keywords: *Posttraumatic Growth, initial trauma, Trauma, Terrorism, Posttraumatic Stress Disorder.*

In the recent past, terrorism has accelerated to become one of the leading causes of trauma across the globe, as a result of the Arab revolution (Brown, 2013). Salim (2013) observed that

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[2] Department of Psychology, the Catholic University of Eastern Africa, Nairobi, Kenya
[3] Department of Biology, Kisii University, Kenya
*Responding Author

African Journal of Clinical Psychology
ISSN: 978-9966-936-05-9: 2018 Vol. 01, Issue 03

Counseling as a Predictor of Posttraumatic Growth among the Garissa University Terrorist Attack Survivors

Asatsa Stephen, Ph.D. Candidate in Counseling Psychology.,
Sr. Sabina Mutisya, Ph.D., Catholic University of Eastern Africa;
and Bethwell Owuor, Ph.D., Kisii University

Abstract

The study investigated the predictive relationship between counseling and posttraumatic growth among Garissa University terrorist attack survivors. The study was anchored on the organismic valuing theory after adversity, and it adopted the explanatory sequential mixed method research design. The study took a two-phase model starting with quantitative data collection and analysis followed by qualitative data collection and analysis. A total sample of 210 participants was selected using simple random sampling and extreme case sampling techniques. Quantitative data were collected using a standardized questionnaire; the 21-item Posttraumatic Growth Inventory (PTGI). Qualitative data were collected using interview guides. Quantitative data were analyzed using univariate analysis multiple regression analysis. Qualitative data were analyzed using themes and narratives from participants. The study found positive significant relationship between the number of counseling sessions attended and posttraumatic growth among the survivors of Garissa University terrorist attack. The study further found that participants who attended between 5 and 10 counseling sessions after the attack reported the highest posttraumatic growth while those who attended critical incident debriefing only reported the lowest growth. The participants who did not attend any form of counseling reported higher posttraumatic growth compared to those who attended critical incident debriefing only. These findings may be relevant in designing future interventions for trauma survivors that are growth focused as complementary approaches to the existing crisis-focused counseling. The findings further raised curiosity on the effectiveness of critical incident debriefing as a trauma intervention strategy which warrants further research on the construct.

Key words: posttraumatic growth, critical incident debriefing, counseling, trauma, terrorism, posttraumatic stress disorder.

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Appendix H: Letters of Permission for Standardized Instruments

Posttraumatic Stress Disorder Checklist -PLC-5
PTSDConsult <PTSDConsult@va.gov>
To
Stephen Asatsa
Aug 21 at 4:57 PM

Good morning.

Thank you for contacting the National Center for PTSD.

All instruments authored by the National Center for PTSD reside in the public domain and require no explicit permissions for use. We only request that the full citation for the instrument be used in your work and that you not modify the instrument.

Please advise if you require any further information.

Best regards,

Sheila

Sheila L. Barry

PTSD Consultation Program Triage Consultant

PTSD Mentoring Program Manager

National Center for PTSD

White River Junction, VT 05009

866-948-7880 or PTSDconsult@va.gov

Posttraumatic Growth Inventory (PTGI)

UNC CHARLOTTE
College of Liberal Arts & Sciences
Department of Psychological Science
9201 University City Boulevard, Charlotte, NC 28223-0001
t/ 704.687.1315 f/704.687.1317

September 25, 2017

Dear Mr. Asatsa--

You have my permission to use the Posttraumatic Growth Inventory in your PhD project.

Richard Tedeschi, Ph.D.
Professor

Cognitive Processing of Trauma Scale (CPOTS)

Department of Veterans Affairs

Puget Sound Health Care System

1660 South Columbian Way

Seattle, WA 98108-1595

In Reply Refer To:

American Lake Division

Tacoma WA 98493-5000

Seattle Division

Asatsa Stephen

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA
P.o Box 954-00502
NAIROBI.

Sept. 27, 2017

Dear Mr. Stephen,

You have my permission to use the Cognitive Processing of Trauma Scale for your dissertation, and I wish you the best of luck with your dissertation project.

Kind regards,

Rhonda M. Williams, Ph.D., ABPP-RP

Attending Psychologist & Investigator

VA Puget Sound Healthcare System

Associate Professor,

University of Washington School of Medicine

Department of Rehabilitation Medicine

Mailing Address:

VA Puget Sound Healthcare System

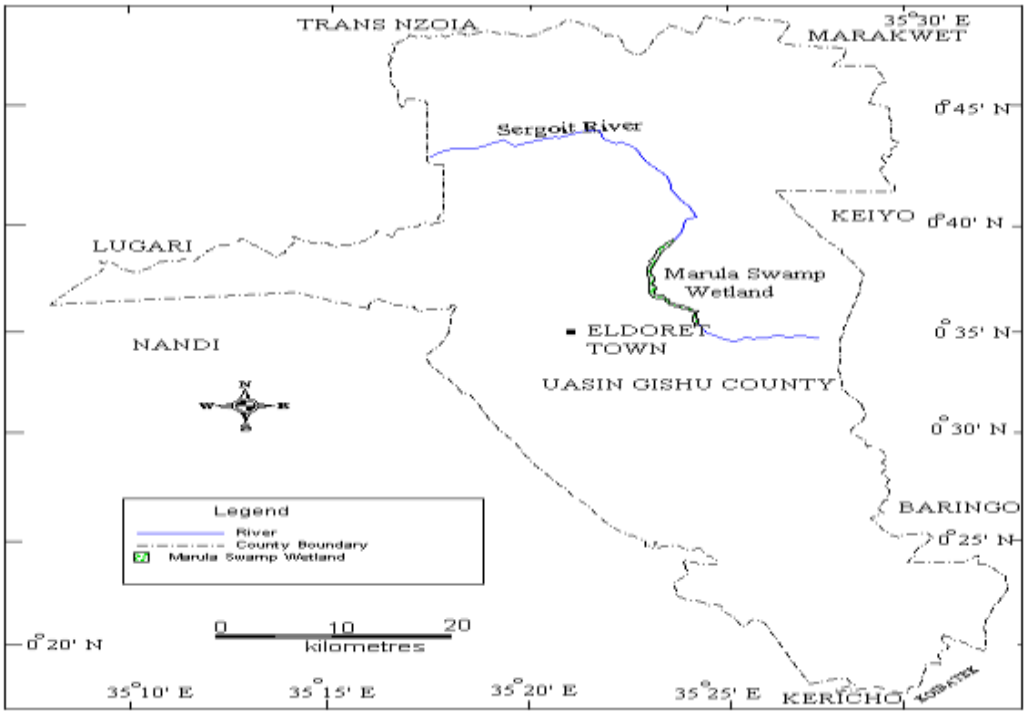
1660 S. Columbian Way

RCS-117

Seattle, WA 98108

206-277-6290

Appendix I: Study Area Map



Google maps

Appendix J: Letter of Introduction from Catholic University of Eastern Africa

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

Faculty of Arts and Social Sciences

Department of Counseling Psychology

Our Ref: CUEA/DVC-ACAD/FASSc/Psyc/NACOSTI/001/January 2018

Date: 24th Jan 2018

The Director
National Commission for Science, Technology and Innovation
NAIROBI

RE: ASATSA STEPHEN REG. NUMBER: 1026407

I am writing to introduce to you **Asatsa Stephen** who is a final year PhD Degree student at The Catholic University of Eastern Africa, Nairobi – Kenya, and to request you to assist him to accomplish his academic research requirements.

Asatsa's Doctrate Degree specialization is in Counseling Psychology. He has completed all course work requirements for this programme. However, every student in the programme is required to conduct research and write a report/thesis submitted during the final years of studies.

Accordingly, Asatsa's research topic has been approved. He will conduct research on the following topic:

"Trauma Processing Strategies and Post-traumatic Growth Among Terrorist Attack Survivors at Garissa University, Kenya ".

Thanking you in advance for any assistance you give to Asatsa.

Sincerely,

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA
FACULTY OF ARTS & SOCIAL SCIENCES
24 JAN 2018
DEPT. OF COUNSELLING PSYCHOLOGY
P.O. BOX 62157-00200, NAIROBI

Sr. Dr. Sabida Mutisya
HOD, PSYCHOLOGY

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA (CUEA) P.O. BOX 62157 00200 Nairobi – KENYA
Tel: 020-2525811-5, 8890023-4, Fax: 8891084, Email: psyc@cuea.edu, Website: www.cuea.edu
Founded in 1984 by AMECEA (Association of the Member Episcopal Conference in Eastern Africa)

Appendix K: Research Permit from NACOSTI

THIS IS TO CERTIFY THAT:
MR. STEPHEN ASATSA
of THE CATHOLIC UNIVERSITY OF EASTERN AFRICA, 0-502 NAIROBI,has been permitted to conduct research in
Uasin-Gishu County

on the topic: ***TRAUMA PROCESSING STRATEGIES AND POSTTRAUMATIC GROWTH AMONG TERRORIST ATTACK SURVIVORS AT GARISSA UNIVERSITY, KENYA***

for the period ending:
16th February,2019

Permit No : NACOSTI/P/18/8205/21109
Date Of Issue : 16th February,2018
Fee Recieved :Ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

Appendix L: Letter of Permission to Conduct the Survey from Moi University

MOI UNIVERSITY

OFFICE OF THE DEPUTY VICE CHANCELLOR
ACADEMICS, RESEARCH AND EXTENSION

Tel: (053) 43355
(053) 43620
Fax: (053) 43412
Email: dvc_are@mu.ac.ke *or* dvcresearchmu@gmail.com

P.O. Box 3900
Eldoret - 30100
Kenya

REF: MU/DVC/REP/27B

Date: 22nd February, 2018

TO WHOM IT MAY CONCERN

RE: PERMISSION TO CARRY OUT RESEARCH – ASATSA STEPHEN

The above subject matter refers.

Mr. Asatsa Stephen who is a Doctoral Student at Catholic University of Eastern Africa has applied for authority to conduct research within Moi University. We would be grateful if he is permitted to conduct his research on *"Trauma Processing Strategies and Posttraumatic Growth among Terrorist Attack Survivors at Garissa University."*

By a copy of this letter authority is hereby granted to him to conduct the research.

After the completion of the research, a complete report both on hard and soft copy will be handed over to the office of Deputy Vice-Chancellor, Academics, Research & Extension.

Any assistance accorded to her will be highly appreciated.

Thank you.

Yours faithfully,

PROF. I. N. RIMENGI, Ph.D.
DEPUTY VICE-CHANCELLOR
(ACADEMICS, RESEARCH & EXTENSION)

Appendix M: Letter of Permission to Conduct the Survey from the County Director of Education, Uasin Gishu County

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF BASIC EDUCATION

Telegrams: **"EDUCATION"**, Eldoret
Telephone: **053-2063342** or **2031421/2**
Mobile: **0719 12 72 12/0732 260 280**
Email: cdeuasingishucounty@yahoo.com
: cdeuasingishucounty@gmail.com
When replying please quote:

Ref: No. MOEST/UGC/TRN/9/III/79

Office of the County
Director of Education,
Uasin Gishu County,
P.O. Box 9843-30100,
ELDORET.

Date: 22nd February, 2018

Stephen Asatsa
Catholic University of Eastern Africa
P.O. Box 62157-01000
NAIROBI

RE: RESEARCH AUTHORIZATION

In reference to your letter Ref. No. NACOSTI/P/18/8205/21109 dated, 16th February, 2018, for research authorization, you have been granted authority to carry out the research on, ***"Trauma processing strategies and posttraumatic growth among terrorist attack survivors at Garissa University,Kenya"*** within Uasin Gishu County for the period ending 16th February, 2019.

The authorities concerned are requested to give you maximum support.

I wish you well during your research.

FOR COUNTY DIRECTOR OF EDUCATION
UASIN GISHU COUNTY
P. O. Box 9843, ELDORET
Tel: 0719-1227 212/ 053-2063342

Michael Psinen
FOR: COUNTY DIRECTOR OF EDUCATION
UASIN GISHU COUNTY