RELATIONSHIP BETWEEN IRRATIONAL BELIEFS AND LEVEL OF PTSD among Children Survivors of Post-Election Violence of 2007/2008 in Nakuru County, Kenya

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ABSTRACT
Recent advances in psychological research indicate that traumatic events can have effects on the victims, perpetrators and those who witness such events. This is on the premise that no one who experiences a disaster is untouched by it. In the 2007/2008 post-election violence in Kenya, children were exposed to and witnessed various traumatic events. Some may have developed behavioral and anxiety disorders. The study sought to assess the relationship between irrational beliefs and levels of Posttraumatic Stress Disorder severity among the children survivors of 2007/2008 post-election violence. The study was guided by Cognitive Behavioral Theory. The study target population was 77,768 children. A sample size of 460 respondents was derived from 10 divisions in Nakuru county which were hard hit by post-election violence. The sample comprised of 400 children who included primary and secondary survivors of the violence and 20 deputy head teachers in the schools sampled and 40 parents who took part in focused group discussions. Expost facto comparative research design was utilized and multi-stage sampling approach was used to derive the sample. Data for the study was obtained using questionnaires, interview schedules and focused group discussions. A pilot study was conducted in Subukia division involving 80 children, four deputy head teachers and two focused group discussions. The hypotheses were tested at significance level of 0.05. The study found fairly strong correlation between irrational beliefs and level of PTSD severity. This study recommended psychological debriefing and trauma counseling as interventions needed for the survivors.

Key words: Irrational beliefs, Post-Traumatic Stress disorder traumatic experiences, post-election violence, secondary survivors, and primary survivors

Introduction
Traumatic events such as being involved or witnessing a serious road accident, military combat, violent personal assault, terrorist attack, community violence, being diagnosed with a life-threatening illness and even hearing about an unexpected injury or violent death of a family member or close friend can cause both short term and long term stress reactions. Many people who experience long term stress reactions continue to function at optimal levels but those who are unable to function at normal range and have difficulties in one or more areas may have Post Traumatic Stress Disorder [PTSD] (Leach, 1994). The characteristic symptoms resulting from the exposure to the extreme trauma include persistent re-experiencing of the traumatic event, intrusive recollections of the event and increased arousal.

The official recognition of PTSD came about only in 1980s when it was recognized as an adult disorder in American Psychiatric Association (1994), previously it was described as bereavement syndrome, camp psychosis and traumatic war neurosis. However, in 1987, DSM-III-R added notes on variation of symptom presentation in children after studies indicated that traumatic events affect children in a much more profound way than adults since they have not yet developed personality or psychological structures to deal with horrors and trauma. Moreover, childhood traumatization is greater than that of adult because it disturbs the child’s developmental process, affects behaviour and long term potential (Green, 1992, 760 – 766). Children who have been traumatized see the world as a frightening and dangerous place and if the trauma is not resolved, this fundamental sense of fear and helplessness may carry over into adulthood setting stage for further trauma (Levine, 1997).
Nevertheless, children and adolescents vary in the nature of their responses to traumatic experiences. The reactions may be influenced by their developmental level, ethnicity or cultural factors, previous trauma exposure, available resources, and pre-existing child and family problems (Garrison, 1995, 1193 – 1201). However, nearly all children and adolescents express some kind of distress or behaviour change in the acute phase of recovery from a traumatic event (Sue, 1990). Some of the reactions include development of new fears, separation anxiety, sleep disturbance, sadness, and loss of interest in normal activities, anger, and decline in school work, irritability and somatic complaints.

Research indicates that in community samples more than two thirds of children report experiencing a traumatic event by the age of 16 (Gist, 1989). A comparative study in urban African schools in Cape Town and Nairobi revealed that more than 80% of secondary schools children reported exposure to severe trauma either as victims or witnesses (Seedat, Nyamai, Njenga, 2004, 169-175). Clark, (2001) gave estimated rates of witnessing community violence range from 39% - 85%.

A study by Thabet (2000, 1801-1804) in Gaza strip among children aged between 6 – 16 years revealed that 59% of the children were diagnosed with PTSD while there was no significant difference between boys and girls in reported anxiety, PTSD and depression. As far as age was concerned, there was no significant difference in reported anxiety, PTSD and depression. Children also reported to have witnessed traumatic events which included, watching mutilated bodies on TV, hearing shootings and bombardments. It also included hearing sonic sounds of Jet fighters, witnessing shooting of relative and being threatened by shooting (Thabet, 2008). Nevertheless in Rwanda, a study carried out by Palmer (1997, 17 – 25) after the most brutal genocide the world has ever witnessed indicates that symptoms of PTSD are widely spread around children and adolescents. About 54–62% of the children interviewed exhibit probable PTSD.

Nonetheless, in 2007, Kenya’s general election was accompanied by violent conflict dubbed ‘land’ and ‘ethnic’ clashes. These conflicts mostly affected parts of Coast, Western, Nyanza and Rift Valley regions and Nairobi slums. In Nakuru county in the Rift Valley region, tensions started building up before elections and the announcement of the results for presidential election was preceded by a lot of anxiety and eventually the breakup of the violence. During the post-election violence, many atrocities were committed and human rights violated (Centre for Rights Education and Awareness, 2008). The violence took the form of ethnically targeted killings, forced eviction, maiming, burning of houses and business premises. Traumatic and forced circumcision, penile amputations were some of the worst forms of violence inflicted on male victims from certain communities (Waki report, 2008).

According to ministry of education report (2008), education sector was not spared, schools were not spared, some schools were burnt, classrooms and offices destroyed; school property such as furniture and teaching materials were stolen. Many children came back to school after staying home for long time while others left due to unfriendly environment (Daraja Civic Initiative Forum Report, 2008). During the violence some schools were completely burnt down. In addition, 64,697 primary school pupils in Kenya were displaced; 32,847 boys and 30,652 girls from the secondary schools, a total of 9294 children have been displaced; 4682 boys and 2979 girls (Ministry of Education Report, 2008).

Nakuru county had experienced ethnic and political conflicts in 1992 and 1997 prior to general elections held in those years. However, in 2007 violence erupted after the announcement of results though tension had started to build up before the elections. The post-election violence of 2007/2008 adversely affected Nakuru county, there was losses in human life, property and livelihoods. Injuries were also sustained. Further, thousands of people were displaced. According to Waki Report (2008), 1564 houses were burnt and 263 lives were lost during the initial and retaliatory attacks that took place in Nakuru county. Recent advances in psychological research indicate that irrational beliefs have been shown to play a primary role in pre-disposing individuals to behavior disorders including depression and anxiety.

In addition, studies have indicated that depressed and anxious persons systematically distort the meaning of events to interpret their experiences in sustained negative, self - defeating way. The main idea is that the most important causes of self -defeating and inappropriate behaviours are not the events but the beliefs about the events. Irrational beliefs have been associated with post-traumatic stress disorder PTSD. Children develop irrational beliefs in a much more profound way than adults since they have not yet developed personality or psychological structures to deal with horrors and trauma. This raises a concern; did the pre trauma and trauma experiences reinforce negative beliefs of the children? Did it have a potential of causing PTSD? This
underscores the objective of present study establish whether strongly held irrational beliefs can be predictor of person’s vulnerability to develop PTSD after experiencing of traumatic event.

LITERATURE REVIEW

Perspectives of PTSD

Santrock (2003) defines PTSD as an anxiety disorder that develops in response to an extreme psychological or physical trauma which lasts more than thirty days. According to Santrock, PTSD is characterized by intrusive memories of the traumatic event, emotional withdrawal and heightened automatic arousal. Some of the traumas that may induce PTSD range from extra ordinary events such as terrorist attack to common events such as a traffic accident (Nolen-Hoesksema, 2004). Symptoms of PTSD according to Nolen-Hoesksema (2004) can be mild to moderate but for others the symptoms can be immobilizing causing deterioration in the work and social lives. It is approximated that on the overall, 8 percent of men and 20 percent of women who experience trauma go on to develop PTSD and 30 percent of these individuals develop chronic form that persist through their lives (Ford, 1999).

Clark (2001) and Morris (2001) conceptualizes PTSD as a psychological disorder that developers through exposure to a traumatic event, such as war, severe oppressive situations, severe abuse, and natural and natural disasters. However they indicate that not every individual exposed to the same event develops PTSD which overloads the individuals coping abilities (Clark, 2001, Morris 2001). A study carried out among Vietnam War veterans revealed that only 15 to 20 percent of soldiers who experienced war traumas developed PTSD. Preparation for a trauma makes a difference in whether an individual will develop the disorder or not (Koss and Boeschen, 1998).

Barlow (1998) defines PTSD as a long lasting emotional disorder that occurs after variety of traumatic events. Barlow identifies war as the most impressive traumatic event in development of PTSD. He however concurs with Clark (2001) and Norris (1997) that PTSD does not develop in all people who experience trauma. He attributes the development of PTSD to biological, psychological and social factors. Foy (1987) concluded that the intensity of combat exposure contributed to the etiology of PTSD in a group of Vietnam War veterans.

Social and cultural factors are said to play an important role in development of PTSD (Carrol and Foy 1987). Results from a number of studies are consistent in showing that having a strong and supportive group around helps in mitigating against development of PTSD. Individual factors such as tendency to be anxious as well as factors such as minimal education and ethnic group membership predict development of PTSD (Bre slay, David, Andreskin, 1995).The literature indicates that PTSD develops after exposure to traumatic events such as war. However, not every individual exposed to the same event develop PTSD .The current study aimed at establishing whether children who involved in the post- election violence of 2007/2008 developed PTSD Nakuru county.

Irrational beliefs and PTSD

Irrational beliefs refer to the unreasonable conviction which leads to emotional and behavioral problems (Walter, 1988). According to Farley (2009), irrational beliefs are rigid, inaccurate and illogical in the interpretation of external events and that they develop when people are depressed and unhappy with the way things are going but cannot find an explanation. Irrational beliefs have been shown to play a primary role in pre-disposing individuals to behavior disorders including depression and anxiety. A study among 114 children in Nigeria who had witnessed school violence reported that irrational beliefs test scores were significantly related to depressive symptoms and that there was no gender difference in irrational beliefs (Ndika and Olagbaiye, 2012.).

According to Jones and Trower (2004) depressed and anxious persons systematically distort the meaning of events to interpret their experiences in sustained negative, self - defeating way. The main idea is that the most important causes of self-defeating and inappropriate behaviors are not the events but the beliefs about the events (Larry and Woods, 1991).

Irrational beliefs have been associated with post-traumatic stress disorder PTSD. The basic assumptions about one self and the world, the trauma experienced as well as the assumption about the meaning of one’s PTSD symptoms (Walter, 1988). The pre trauma and trauma experiences may be used to justify or reinforce negative beliefs. Some people may alter their own belief system to fit a traumatic event.
According to Taylor (2006) people normally operate on the basis of unchallenged and unquestioned positive assumptions about themselves and the world (e.g. my world is predictable, safe, meaningful and just). When the person experiences trauma, their assumption may be shattered, thereby leading to confusion, distress and attempts to make sense of what happened consequently developing irrational beliefs. The person may try to make the trauma fit into their belief system or alter them. In comparison to those who have positive assumptions about themselves and the world before they experienced trauma and those who have pre trauma negative views get psychopathology since the trauma strengthens dysfunctional beliefs (Richards, 1994).

According to Philpot (1995), people with PTSD, as compared to those exposed to trauma without have developed PTSD; frequently have negative beliefs about themselves. The intensity of these beliefs corresponds directly with the severity of PTSD symptoms. Those with PTSD arising from specific traumas such as rape or torture have their assumptions shattered, thereby leading to confusion, distress and attempts to make sense of what happened. The person may try to make the trauma fit into their belief system consequently developing irrational convictions. Unlike those who have positive assumptions about themselves and the world before trauma, trauma strengthens dysfunctional beliefs people with negative belief’s about the world (Richards, 1994).

According to (Ellis, 1974) people who develop with PTSD after trauma have been found to have negative beliefs about themselves. The intensity of these beliefs corresponds directly with the severity of PTSD symptoms. Those with PTSD arising from specific traumas such as rape or torture often experience a sense of mental defeat where they no longer believe in their own individual identity as human beings but describe themselves as objects (Herman, 1992). A belief system about life, death and destiny contributes to regulating the processing of traumas associated with activated terrors. Traumas associated with genocide or community violence disturbs collective identity interdependence and survival beliefs (Philpot, 1995). This underscores the objective of present study establish whether strongly held irrational beliefs can be predictor of person’s vulnerability to develop PTSD after experiencing of traumatic event.

Objectives

i) To determine the relationship between the irrational beliefs of the primary and secondary survivors and level of PTSD severity in areas affected by post-election violence of 2007/2008 in Nakuru county.

Hypothesis

H₀₂: There is no significant relationship between irrational beliefs of the primary and secondary survivors and level PTSD and severity in areas affected by post-election violence in Nakuru county.

Research methodology

The study employed ex-post factor and correlational research designs. The study was carried out in Nakuru County in the Rift Valley region of Kenya. The county has an area size of 74,905 km² and administratively divided into four sub counties namely: Nakuru North, Nakuru central, Molo and Naivasha. The target population for study was 77,768 children. The study used a sample of 400 children survivors of the post-election violence, 20 deputy head teachers and 40 parents from 20 schools. To get the sample, multi stage sampling strategies were adopted. At the first stage, purposive sampling was used to get the 10 divisions that were hardest hit by the post-election violence of 2007/2008 which included; Naivasha, Keringet, Njoro, Molo, Olenguruone, Mausummit, Kuresoi, Mau Narok, Rongai and Mauche. In the second stage, day schools were purposively selected. In the third stage, simple random sampling was used to get the specific schools. In the fourth stage, purposive sampling was used to get the specific children who are residents of the sampled divisions during the Post-election violence. In the final stage, simple random sampling was used to get the final sample. The deputy headteachers were selected from the 20 schools selected in the second stage. The parents were picked from two schools randomly selected in areas which were hardest hit by the violence. A questionnaire was used to collect data from the children survivors while the interview schedule was used for the deputy head teachers and focused group discussion guidelines for the parents. To establish the reliability of the research instruments, a pilot study was carried out in Subukia division which possessed same characteristics as the divisions sampled. It involved 80 children, four deputy headteachers and two focused group discussions. Split-half method was used to analyse data from the pilot study and yielded a reliability coefficient of 0.8. The results
from the pilot study revealed the research instruments were reliable and possessed both content and face validity. Descriptive analysis was used to establish the mean and standard deviation of survivors’ scores on the Impact of Event Scale while independent t-test was used to test the hypotheses. Qualitative results were based on information obtained from 20 deputy head teachers in 20 schools and 40 parents who participated in focused group discussions.

RESULTS AND DISCUSSION

To assess the relationship between irrational belief and level of PTSD, descriptive statistics were carried out to determine the mean score and the standard deviation of irrational beliefs of the children. The level of irrational beliefs was also established. A Pearson product moment formula was utilized to establish the relationship between irrational beliefs and level of PTSD severity for all the children and the primary and secondary survivors separately.

On the overall the study found the mean scores of irrational beliefs of all children sampled to be (9.51), with a standard deviation of (8.3). This is interpreted to mean score of irrational beliefs among the children how participated in the study was low. However, analysis carried out to establish differences in irrational beliefs among the primary and secondary survivors. The study reported the mean of the primary survivors to be (10.7), while that of the secondary survivors was (8.3). This therefore means that the primary survivors were higher in than secondary survivors on irrational beliefs as indicated on table 8.1.

### Table 1: Scores of Children on Irrational Beliefs

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary survivors</td>
<td>197</td>
<td>10.7</td>
<td>8.2</td>
</tr>
<tr>
<td>Secondary survivors</td>
<td>197</td>
<td>8.3</td>
<td>8.4</td>
</tr>
<tr>
<td>Overall</td>
<td>394</td>
<td>9.5</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Source: Field data

Further analysis was carried out to determine the level of irrationality of the children studied based on scale where a score of between zero (0) to 15 was low irrationality, 16 to 30 was moderate while 31 to 45 was high. As shown on the table 8.2 on the overall, level of irrational beliefs among the children studied was low.

### Table 2: Level of Irrational Beliefs

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary survivors</td>
<td>197</td>
<td>1</td>
<td>0.5</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21.3</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>154</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>78.2</td>
</tr>
<tr>
<td>Secondary survivors</td>
<td>197</td>
<td>2</td>
<td>1.0</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>161</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.7</td>
</tr>
<tr>
<td>Overall</td>
<td>394</td>
<td>3</td>
<td>0.8</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79.9</td>
</tr>
</tbody>
</table>

Source: Field data

Relationship between Irrational Beliefs and Level of PTSD Severity

In examining the relationship, correlation was computed to measure linear relationship between irrational beliefs and the level of PTSD severity. A Pearson product moment formula was utilized. A correlation coefficient has a value ranging from -1 to 1. Values that are closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated whereas values closer to 0 indicate that there is little or no linear relationship.

A correlation value of (0.456) was found between irrational beliefs and level of PTSD severity. This implies a fairly strong correlation between irrational beliefs and level of PTSD severity. This finding is interpreted to mean that as the scores of irrational beliefs increased, the scores on Impact of Event Scale (level of PTSD severity) also increased among the children studied. The relationship was also found to be significant. This finding is consistent with the postulation of Ellis (1974) Cognitive Behavioral Therapy. According to Ellis (1974, Ellis &Bernard, 1986), people develop anxiety symptoms by internalizing self-defeating thoughts and beliefs. He pointed out that emotional disturbance is continually fed by the illogical sentences that the person continually
repeats about the event and that disturbed emotional reactions such as depression and PTSD are initiated and perpetuated by self-defeating belief system and irrational ideas that one has incorporated.

Ellis Cognitive Behavioural Therapy points out that those emotional disturbances are caused by the illogical sentences that the person repeats to him or herself. Among the survivors, some of the irrational beliefs that they were repeated included; my life will never be the same again, I will never achieve my goals, they destroyed my life and my future, I worry that something wrong is going to happen and nothing will ever matter in life anymore.

Ellis (1974) contends that existence of an event (A) does not cause emotional and behavioural consequence (C) or reaction of the individual; instead, emotional and behavioural consequences are caused by the person’s beliefs, thoughts that they feed to their mind and interpretation of the event (B). In this study, the theory was used to explain why some individuals are more likely than others to develop PTSD in the face of similar levels of trauma. Thus, the outcome of an event depends on individual interpretation of the event and not the event itself.

However this finding disagrees with findings of Susanne and Thomas (2011) in a study among orphans and widows of Rwanda genocide which reported that individual beliefs and thoughts about the genocide did not correlate with the symptoms of PTSD. Perhaps the difference in findings was due the fact that the sample was mixed where orphans and widows were of different ages and had different developmental tasks which may have influenced the results.

Further analysis was carried out to establish correlation between the scores of irrational beliefs and score on impact of Events scale (level of PTSD) among the primary and secondary separately. The study found Pearson correlation value for primary survivors to be (0.509), while that of secondary survivors was (0.368). This is interpreted to mean that in both groups as the scores of irrational beliefs increased, the scores on the impact of event scale increased. The relationship between the scores of irrational beliefs and scores on impact of event scale (level of PTSD) of primary and secondary survivors was found to significant. The null hypothesis was therefore rejected. However relationship is stronger for the primary survivors as shown on table 8.3.

The strong positive relationship among the secondary survivors may be attributed to survivor’s guilt. According to William (2002) survivor guilt comes from the belief that one’s actions or inaction during a traumatic event may have caused or could have prevented the death or injury, or mistreatment of others. They may have been disturbed by the fact that others had suffered while they were spared. For the primary survivors, this finding may have supported the findings of the Parliamentary Committee on Education Report (2008) that children areas affected by post-election violence thought their life had been destroyed after the traumatic experiences they witnessed during the violence. Moreover, the same report indicated that some children may have participated in burning and looting of property as well as killing and injuring of people. This could have led to guilt which may have led to survivor’s guilt on the part of secondary survivors.

Table 3: Correlations between Irrational Beliefs and Level of PTSD Severity

<table>
<thead>
<tr>
<th>Category</th>
<th>Impact of Event Scores (PTSD)</th>
<th>Irrational Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
<td>.509**</td>
</tr>
<tr>
<td>Impact of event scores</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>Primary Survivor</td>
<td>N</td>
<td>197</td>
</tr>
<tr>
<td>Level of irrationality</td>
<td>Pearson Correlation</td>
<td>.509</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>Secondary Survivor</td>
<td>N</td>
<td>197</td>
</tr>
<tr>
<td>Impact of event scores</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.368**</td>
</tr>
<tr>
<td>Level of irrationality</td>
<td>N</td>
<td>197</td>
</tr>
<tr>
<td></td>
<td>Pearson Correlation</td>
<td>.368**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>197</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field data
On the overall, the result showed that there is significant relationship between irrational beliefs and level of PTSD severity among survivors of post-election violence. However there was a significant difference between secondary and primary survivors in irrational beliefs with primary survivors registering higher scores.

CONCLUSION
The study found a significant relationship between irrational beliefs and level of PTSD severity among children affected by of post-election violence. Children who reported high scores in irrational beliefs also reported had higher levels of PTSD severity than those with lower scores. Irrational beliefs are rigid, inaccurate and illogical beliefs that are used in the interpretation of external events. They are associated with development of behavior disorders including depression and anxiety. Irrational beliefs develop when people are depressed and unhappy with their circumstances but helpless at the same time. During post-election violence, children may have found themselves in a situation of helplessness thus pre-disposing to PTSD.

Further, the study found a significant difference between secondary and primary survivors. This meant the relationship between irrational beliefs and level of PTSD severity was stronger among primary survivor than among secondary survivors with primary survivors registering higher scores. This may be attributed to the fact primary survivors were directly affected by the violence and suffered losses during the violence unlike the secondary survivors who saw events unfolding. The fairly strong relationship found between irrational beliefs and level of PTSD severity among the secondary survivors may be due to survivors’ guilt. The secondary survivors may have been disturbed by the fact that others had suffered while they were spared.

REFERENCES


