Article

# Male Survivors' Perceptions of Post-Traumatic Stress Disorder (PTSD) Management Strategies in the South African Mining Sector

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## Abstract

Deep-shaft mining is regarded as a high-risk occupation with an increasing number of traumatic accidents. Though there are strategies for the management of post-traumatic stress disorder (PTSD), little has been done to document the male survivors' perceptions of PTSD management strategies in the South African mining sector. An exploratory, descriptive and contextual study was conducted within the South African mining sector to explore and describe the survivors' perceptions of PTSD management strategies. The population comprised all men who were suffering from PTSD as a result of accidents in the mines. A purposive sample of 29 men was selected to participate in the study and data saturation was achieved. Unstructured individual interviews and field notes were used as methods of data collection. One question was asked during the interviews: "What do think helped you recover from PTSD?" Communication skills were employed to facilitate the participation of the men during the interviews. Data were collected using a voice recorder and were then transcribed verbatim and analysed using Tesch's descriptive method of data analysis. Measures for ensuring trustworthiness were applied to verify the findings. Three themes emerged during data analysis: (1) perceived emphasis on physical versus psychological treatments, (2) perceived coping strategies used to deal with the trauma, and lastly, (3) the perceived effect of social support networks during trauma. Based on the perceptions of the participants, it became evident that PTSD management did not meet expectations. An integrated approach is recommended for the future treatment of psychological and physical trauma among survivors of traumatic events in the mining sector.

**Key words:** health practitioner; male survivor; management strategies; mining sector; perceptions; PTSD

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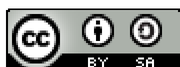

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## Introduction

The American Psychiatric Association (APA) defines post-traumatic stress disorder (PTSD) as "a psychiatric disorder that can occur in people who have witnessed life-threatening events such as natural disasters, serious accidents, terrorist incidents, war or violent personal assaults" (APA 2004). Fattal et al. (2006) describe PTSD as "complex somatic, cognitive, affective and behavioural effects of psychological trauma." Sadock, Sadock and Levin (2015) and Friedman (2017) describe the following as the principal clinical features of PTSD: re-experiencing the event through flashbacks, nightmares, or daydreams, avoidance of situations or people that trigger memories of the traumatic event, feeling emotionally numb as another means to avoid traumatic memories, and constant hyper-arousal, i.e. being in a chronic state alertness and on the lookout for danger.

Globally, it is estimated that PTSD prevalence at any one time is between 0.3% and 6.1% (Gradus 2019). Also, between 15% and 30% of people exposed to traumatic events will develop PTSD (National Centre for PTSD n.d.). The World Health Organization (WHO) estimates that there are 120 million occupational accidents/injuries with 200,000 fatalities every year (Gradus 2019). The WHO's Global Burden of Disease studies estimate that 8% of stress conditions can be attributed to environmental factors, in particular occupational stress (Rushton 2017). Workplace stress is one of the most debilitating conditions and affects workers most adversely, sometimes with consequences that surpass those associated with unemployment (Gitterman 2014). It is said that PTSD may persist, unremitting, for years and decades in a subset of trauma-exposed survivors (Qi, Gevonden, and Shalev 2016).

The literature postulates that a relatively large number of mine workers are likely to experience some degree of PTSD due to the high incidence of injuries and deaths resulting from mining accidents (Maiden and Terblanche 2006). This is due to the fact that they spend the majority of their working time in shafts (Maiden and Terblanche 2006). These shafts are fraught with danger and injuries and fatalities occur as a result of sub-surface earth tremors and quakes, collapsed pilings, cave-ins, and methane gas explosions, all of which have the potential to cause PTSD among the survivors (Maiden and Terblanche 2006). In mining industries, falls of ground are acknowledged as the most common cause of traumatic accidents, followed by transport and machinery accidents (Department of Mineral Resources 2011).

As exposure to different types of traumatic stressors increases, so does the prevalence of PTSD. Moreover, based on the 1994 Rwandan genocide survivors, it is known that higher trauma exposure is associated with higher prevalence of current and lifetime PTSD, with lower probability of spontaneous remission from PTSD, and with higher current and lifetime PTSD symptom severity in clear dose-response effects (Kolassa et al. 2010). These results suggest that traumatic load may be a root cause of both PTSD chronicity and symptom severity, and support the hypothesis of a neural fear network in the aetiology of PTSD (Kolassa et al. 2010).

Important risk factors for PTSD are severity, duration and proximity of a person's exposure to the actual trauma. The disorder also appears to be familial and first-degree biological relatives of persons with a history of depression have an increased risk for developing PTSD after experiencing a traumatic event (Sadock, Sadock, and Levin 2015).

Hence, PTSD lends itself to the application of prevention strategies for at-risk individuals, particularly those traumatised persons who begin to exhibit symptoms of PTSD. These interventions could also target individuals who meet the criteria for acute stress disorder with the goal of preventing chronic PTSD (Thorp, Sones, and Cook 2011). Thorp, Sones, and Cook (2011) further suggest that if interventions are implemented early, the progression from traumatic events to PTSD can be at least decreased, if not avoided. For this reason, clinicians, researchers and policymakers are interested in early interventions to prevent the development of PTSD.

Recent data describe a novel couple-based treatment for PTSD, called Structured Approach Therapy (SAT) (Sautter et al. 2011). This structured approach uses empathic communication training and stress inoculation procedures to help couples improve their ability to cope with trauma-related anxiety and a multi-component emotion activation programme to help couples reduce emotional numbing. While it will take time for this approach to be evaluated for its merits, its features of focusing on the couple's empathic communication skills and dyadic coping skills to confront trauma-related aversive emotions and emotional numbing make it a laudable strategy particularly to encourage the return of intimacy within a couple's relationship (Sautter et al. 2011).

## Statement of the Research Problem

Mine workers are at high risk of exposure to PTSD due to the incidence of traumatic accidents that often result in injuries and deaths. Though there are strategies for the management of PTSD, little is known about the male survivors' perceptions of PTSD management strategies in the South African mining sector. The study was therefore conducted to explore and describe male survivors' perceptions of PTSD management strategies in the South African mining sector. The study will assist practitioners and policymakers to design strategies to manage PSTD among survivors of traumatic events in the mining sector.

## Purpose of the Study

The purpose of the study was to explore and describe male survivors' perceptions of PTSD management strategies in the South African mining sector in order to formulate strategies to manage PTSD in this group.

## Definitions of Key Concepts

*Health Practitioner*

A "healthcare provider" is defined as a doctor of medicine or osteopathy, podiatrist, dentist, chiropractor, clinical psychologist, optometrist, nurse practitioner, nurse-midwife, a clinical social worker who is authorised by the state to practise and perform within the scope of their practice as defined by state law, or a Christian Science practitioner.

*Male Survivor*

A survivor is a person who copes with a bad situation or affliction and who survives, or a person who manages to live through a situation that often causes death. A person who copes well with a family tragedy and remains strong is an example of a survivor.

*Management Strategies*

These are plans of action designed to cope during or after an adverse event.

*Mining Sector*

Mining is the industry and activities connected with getting valuable or useful minerals from the ground, for example coal, diamonds, or gold.

*Perceptions*

Perception refers to the way in which something is understood or interpreted by other people.

*PTSD*

This refers to a mental health condition that is usually a result of a terrifying event; a person can witness or experience that terrifying event.

# Methods

## Research Design

A qualitative, explorative, descriptive and contextual research design was utilised in order to identify management strategies for PTSD among male survivor of traumatic events in the mining sector. The qualitative method was chosen in order to develop a rich understanding of the phenomena and to offset the limitations of quantitative research (Terre Blanche, Durrheim, and Painter 2007). The study was exploratory since not much research has been done regarding male survivors' perceptions of PTSD management strategies in the South African mining sector. According to Gray, Grove and Sutherland (2017, 253), exploratory studies are useful when little is known about the topic and not much research has been done on the topic.

## Research Population and Sample

The population comprised all men who were suffering from PTSD as a result of incidents in the mines. Participants were purposively sampled from the study site. A purposive sampling method was used in order to ensure that appropriate participants were selected to provide rich data (Babbie 2007). Only 29 participants were eligible for inclusion in this study as the traumatic event that was most distressing and disturbing for them was work-related. For men to be included in the study, they had to be above eighteen (18) years old, be able to provide informed consent and be willing to participate.

## Data Collection Instrument

Data were collected using in-depth, unstructured individual interviews and field notes. According to Loprinzi and Trost (2010), the purpose of in-depth, unstructured individual interviews is to get complex answers with a lot of information. An interview guide was used to conduct the interviews. The interview guide was pre-tested for content relevance and ease of application on three male mine workers who were not part of the study. The interview guide was adjusted to eliminate ambiguous formulations.

## Data Collection Procedure

In-depth, unstructured individual interviews were conducted (in IsiZulu and Setswana) to elicit participants' lived perceptions of the traumatic event and register their responses. The interviews were conducted in private rooms offering privacy and confidentiality. An interview guide was used to conduct the interviews. An introductory and exploratory question was used at the beginning of each interview, namely, "What do think helped you recover from PTSD?" The researchers also consistently asked open-ended questions aimed at probing for relevant information and to direct participants to express their perceptions of the traumatic event and displayed PTSD symptoms. Each interview took between 45–60 minutes and was audio recorded and later transcribed verbatim. The interview was ended when the participant had no further information to share. At the end of the interview, the researchers summarised what was discussed, clarified uncertainties and thanked the participants. Data saturation was reached during the 20th interview. It was realised that the participants repeatedly gave more or less the same information and no new information was emerging. The researchers also compiled field notes of what happened during the interviews.

## Data Analysis

Tesch's descriptive method of data analysis was used to analyse the data. After the transcription of the data, it was translated into English from local languages (IsiZulu and Setswana) and uploaded into the QSR NVivo version 9 software for analysis. Thematic content analysis was done. Each one of the transcripts was individually coded. Common codes from the transcripts were categorised to form themes. The identified themes were presented together with quotes from participants in order to add depth and

richness to the findings. The themes were constantly checked against the aim of the study to make sure that they answered the purpose of the study.

### Trustworthiness of the Study

The trustworthiness of the qualitative data was ensured through inter-rater reliability of the transcripts and auditing by the research team. The trustworthiness of the study was also ensured by pre-testing the interview guide for content relevance and ease of application. The fieldworker who collected the data went into the field of research open-minded, with no theoretical frame of reference and utilising bracketing and intuiting. During data collection and analysis, a qualitative research expert coded the collected data. Data from the interviews were supported by field notes, which ensured the credibility of the study. During data coding, the researchers used the DSM-IV-TR classification system to reflect findings within the universal categories of the post-traumatic stress disorder as prescribed by Sadock, Sadock and Levin (2015). This was done to give the qualitative research findings a structure and to ensure the findings that emanated from the current study add value to the existing body of knowledge on PTSD. Furthermore, the DSM-IV-TR diagnostic criteria were also used to track evidence suggestive of PTSD among the survivors of traumatic events in the mines as a first step in developing strategies to help improve the management of miners who encounter such problems.

## Ethical Considerations

Ethical clearance for this study was granted by the Medunsa Campus Research and Ethics Committee of the University of Limpopo, which assigned the project number MCREC/PH/31/2008:CR. Permission to conduct this study was granted by the directors of four mining companies that were randomly selected in Gauteng and North West provinces and these were the sites used for the purpose of data collection. Participation was voluntary and informed consent was obtained from all the participants. The purpose, procedure, risks and benefits of the study and ethical rights were explained to the participants. Privacy was ensured as the individual interviews were held in private and secure rooms. All information was handled with confidentiality and no participants have been identified in the results. The participants were informed that they could stop their participation at any time without any consequences. Consent was sought and obtained from the participants to record the interviews with a voice recorder. Only the researchers had access to the recorded information. The recorded interviews were deleted once they had been transcribed.

## Research Findings and Discussion

In the sample of 29 confirmed cases of PTSD, 24 (82.3%) were males and only five (17.2%) were females. With regard to ethnicity, the majority, 28 (96.6%), was black and only 1 miner (3.4%) was white. Their ages ranged between 21 and 52 years. Figure

1 shows the summary of the age variable for participants as recorded in their medical records.

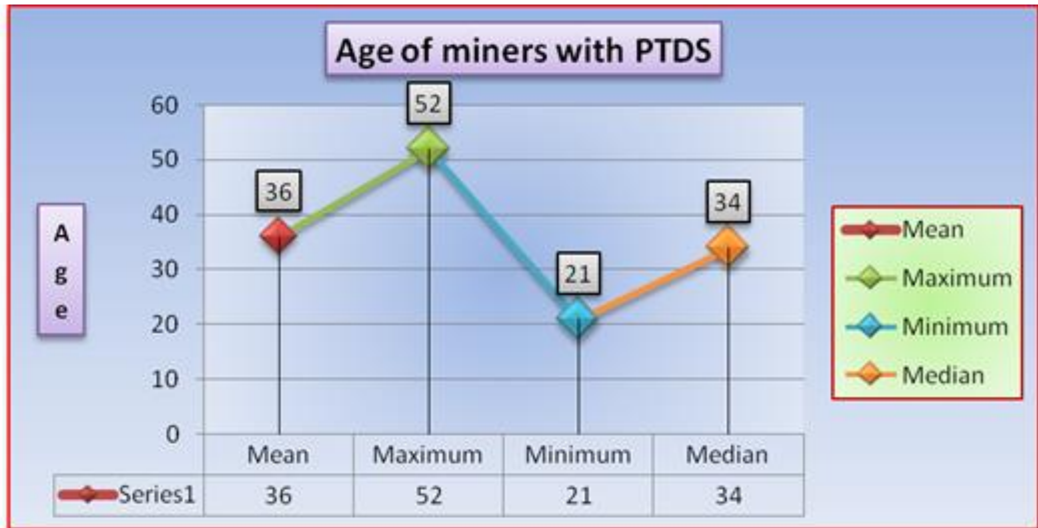


**Figure 1:** Summary of age parameters of miners with PTSD (*n*=29)

As shown in Figure 1 above, the median age of miners diagnosed with PTSD was 34 years, with a maximum age of 52 years and a minimum of 21 years. (*Since the sample size is small, the median is a more reliable measure compared to the mean.)

With respect to participants' marital status, more than half, 16 (55.2%), were married, 12 (41.4%) were single and only 1 (3.4%) was widowed, as illustrated in Figure 2. On reviewing the participants' education records, it was apparent that most participants only had a primary level of education.

With respect to their occupations, the records showed that the majority, 25 (86.2%), were underground general workers. Of the other four participants, one (3.4%) was a mine assistant, one (3.4%) was involved with HTS (heat-tolerance screening), one (3.4%) was a shift worker, and one (3.4%) worked with a water jet, as illustrated in Figure 2. With regard to the period of employment in mining the results showed that the median was seven years, with a minimum of one year and a maximum of 11 years.

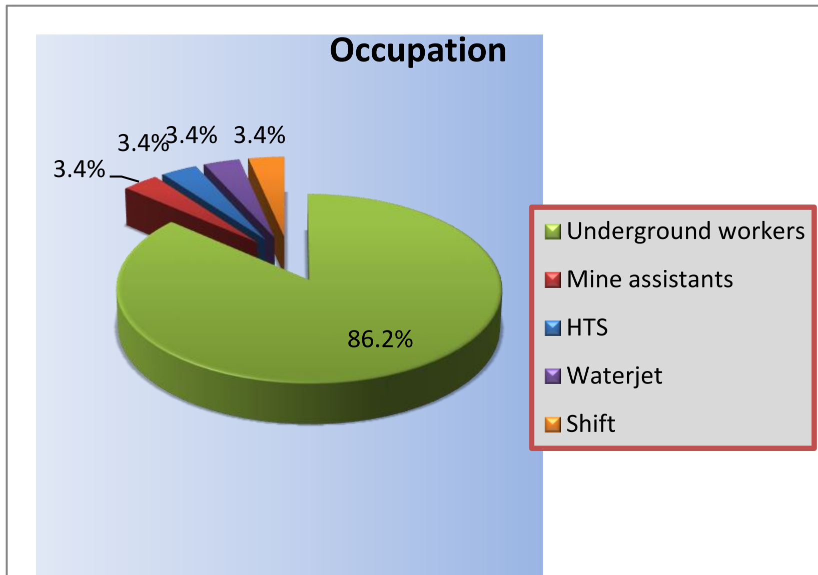


**Figure 2:** Occupation categories of miners with confirmed PTSD (*n*=29)

## Themes

Three themes emerged during the data analysis, namely, (1) perceived emphasis on physical versus psychological treatments, (2) perceived coping strategies used to deal with the trauma, and lastly, (3) the perceived effect of social support networks during trauma.

### Perceived Emphasis on Physical versus Psychological Treatments

Those survivors who suffered physical trauma in the form of fractures and wounds reported that they were given strong "pain killers" to relieve the severe pains. Some mentioned that they had drains inserted in their wounds. They also mentioned that they were relieved of their duties during their hospitalisation. The following are direct verbatim quotes that support these findings:

> I got the back slab on … and he said the Saturday I would be out, but it wasn't to be because they had to drain … I spent I think about a week there … and then I was moving around … everything felt nice … because they had given me pethidine and all these tablets.

> I had to go for X-Rays and other medical checks, to see if I'm still fit to work underground … I thought I would be held back because of my heart, but they never checked that … so from there I went back to the shaft … I came out I was approached by the captain who told me that there was a mistake … I was actually not supposed to go underground but to the hospital instead.

It is clear from the following verbatim quotations from survivors of the traumatic events in the mines that doctors prescribed medication only and nothing was done to address the psychological aspect of the trauma they suffered. Though the survivors (both the injured and observers) had physical wounds associated with the incidents, it was clear from the information that they gave that they suffered more psychologically than physically.

> We were told to go in a room … we were given pills … and were asked about the accident and how it affected us … at which stage we were still in shock … and the pills helped us cope.

> The doctor asked us questions … and we explained what had happened … just like you are asking now … So he gave us prescriptions … Ah now I'm better … I got help, they gave me pills … so I could sleep … so we could sleep … and to prevent mental [anxiety, depression] illness… we couldn't sleep and were in shock … so the treatment was very good … now we can sleep and we are back to our usual selves.

> I've seen death before but this… It's the way that man got injured…that is what affected me mentally … but after that I got help … these pills we take … I'm alright now.

The literature suggests that more psychological treatment should be rendered to survivors of traumatic events (Edwards 2005; 2009; Leibowitz-Levy 2005). However, in this study, survivors of traumatic events verbalised that they were only given treatment for their physical symptoms. The tendency to prioritise physical medical treatments by mine hospital doctors may have resulted from limited research that addresses the extent to which findings of studies conducted in Europe and in the United State of America could be applied to the South African cultural context (Edwards 2005). As a result, Edwards (2005) is concerned about the transferability of international interventions on the basis that some South African medical practitioners may feel improperly trained to render them to their patients. Mavundla (2000), in a study that investigated the nurses' perceptions of nursing mentally ill people in general hospital settings, found that general hospital nurses were not equipped with communication skills to engage patients who suffer from mental disorders in their care.

Another argument offered by Roth and Pilling (2008) (cited in Edwards 2009) is the increasing recognition of the fact that clinicians need specialised competences relevant to the kind of problems presented by clients. As a result, Edwards (2009) argues that it is not enough for a therapist to have generic training. He is of the opinion that treatments have become so specialised that the capacity to apply evidence-based treatment to one clinical problem does not generalise to another. Hence, there is a need for specialised training among therapists or clinicians in order to address the clinical problems of survivors of traumatic events.

## Perceived Coping Strategies Used to Deal with the Trauma

Besides the treatment they received from the medical doctors in the mine hospital, the survivors of traumatic events also devised strategies to help themselves cope with psychological problems that affect them. These coping strategies helped them accept or deal with whatever events they might have experienced such as witnessing mine deaths and injuries. It was clear that the survivors of these injuries dealt with their psychological and emotional problems in a wide range of ways including the following: (1) Prayer and trusting in God for their relief, (2) seeking advice from the traditional healers and ancestors, and (3) communicating with the soul of the deceased and the living colleagues. Each of these is briefly discussed below.

### *Prayer and Trusting in God for the Relief of Symptoms*

As indicated above, survivors of traumatic events resorted to prayers. Some expressed their frustrations about the traumatic event they encountered to their church members as a way of seeking prayers. Some prayed directly to God with the hope of getting some relief from the persistent thoughts of the traumatic event they had suffered. The following are verbatim quotations taken from the survivors' interviews: "God had saved me"; "Well … I even reported the matter at my church … and they prayed for me … so it's better now"; "I isolated myself ... hoping that God would help me get back to normal and accept what had happened ... yes it did."

According Hollywell and Walker (2009), prayer appears to be a coping action that mediates between religious faith and well-being and can take many forms. They further state that most studies show positive associations between prayer and well-being in areas that have strong Christian traditions.

### *Seeking Advice from Traditional Healers and Ancestors*

Apart from praying to God through church members, some survivors were in the process of soul searching through their beliefs in the ancestors and traditional healers. They travelled to their traditional home(s) to seek answers to questions that persistently affected them regarding the traumatic events that they survived. During interviews that were conducted with the survivors of traumatic events the following verbatim quotations were elicited:

> I am thinking of going home … to do some soul searching … and consult the traditional healers … I think a lot … these days I'm even thinking that the rock would have struck me … instead of the poor man.
>
> I consulted traditional healers … to be examined … they would tell me about the accident … if it was aimed at me they would tell me … and that my ancestors have protected me … so that's why I want to take leave and go home … I am leaving later this evening … I'll return on Sunday.

Edwards (2005) argues that the emergence of PTSD as a medical/psychiatric disorder is a social construction arising from particular historical and economic processes of Western societies. He further argues that there is considerable variation in cultural idioms of distress that govern the expression of emotional states, depending on the overall context of cultural conditioning (Edwards 2005). For instance, in the Zulu culture, especially among rural Zulus, their explanations focus on disruptions between the natural and the supernatural domains of life (McBride et al. 2004 cited in Edwards 2005). Hence, seeking advice from a traditional healer or praying to the Almighty God might seem important to the survivor of a traumatic event. Such a prayer or inquiry from the ancestors through the expertise of a traditional healer might offer the survivor spiritual explanations that may not be found elsewhere.

*Use of Communication Strategies*

In addition to seeking spiritual support from the church and traditional healers, the survivors of traumatic events used communication as a way of "taking their troubles off their chest," a skill mentioned by some of them as therapeutic. In this category, two subcategories were identified, namely, (1) communication associated with relief from symptoms, and (2) communicating with the soul of the deceased. These subcategories are discussed briefly below.

Communication Associated with Relief from Symptoms

In addition to seeking spiritual support from the church and traditional healers, the survivors of traumatic events used communication as a way of "taking their troubles off their chest," a skill mentioned by some of them as therapeutic. They mentioned that they spoke to other workmate(s) a lot about the incident so that they could forget about it. The following verbatim quotations are evidence of what was said during the interview sessions:

> The doctor told us to talk about the incident a lot … so we can get it off our chests … Where I stay … I try and talk to people about it … but they are not that interested in it … so it's much better when I'm with colleagues who know what happened and knew this person … Who we talk about it … that is when I feel relieved.
>
> … but it's better now … I only think of it when I work … and go past the area … then I remember … we were sent here … to get treatment so we can sleep ... and to keep talking about the incident … and not keep it bottled up inside.
>
> I've also spoken to a lot of people … at work … in a casual chat … but talking makes me better.

In line with the survivors' views regarding communication, interpersonal communication is viewed as the core healing strategy utilised by health professionals (therapists) in their therapeutic initiatives. In terms of all the therapeutic interventions reviewed by Leibowitz-Levy (2005) in the South African literature, it became clear that trauma workers' core functions centre on the following:

- An emphasis on the therapeutic relationship, which stresses the need for trust, attachment and the supportive role of the therapist;
- Retelling of the story, which is identified as a fundamental element of therapy;
- Working through and completion, which involves two basic principles: (1) psychodynamics (emotional processing), and (2) developing adaptive coping strategies.

It is interesting to note from these findings that medical doctors did not engage their survivors in communication, but encouraged their clients to communicate their feelings to others. This might be due to a lack of skills on the part of doctors or a lack of time to engage their clients in therapeutic conversations.

Communicating with the Soul of the Deceased
One survivor mentioned that as part of his culture, he resorted to speaking to the soul of the deceased as a way of healing himself. This is what he said during the interview:

> … also in our culture, before we even take him out, we get together and speak to him, and explain to him that we are now taking out his body … we don't just take the body […] I even had to try and heal myself … I go and speak to him and told him that he is no longer with us … as we do in our culture … in private … and it seems to make me better.

The living and their ancestors form a totality in which solidarity is lived and expressed through prayers and rituals, and through which human and cosmic solidarity is engaged (Nyamiti 2010).

## The Perceived Effect of Social Support Networks during Trauma

The social support that people give to and receive from others when life goes well influences the amount of support they would give and receive when experiencing a traumatic life event that is deemed stressful to them as individuals, families and fellow colleagues. In this study, people were greatly affected by the loss of a colleague they knew. It also became clear that family support made them accept their condition after the injuries sustained and move on with their lives as if nothing happened. This theme addresses the following categories: (1) Close ties with or knowledge of the victim of the traumatic event, and (2) social support and acceptance of the situation as it stands.

### *Close Ties with or Knowledge of the Victim of the Traumatic Event*

The majority of the research participants were deeply affected by traumatic events that occurred to people they knew personally. Some employees lost individuals who were close friends; some lost people who came from the same home town as themselves; some lost workstation mates, and some lost people with whom they shared a hostel or a roommate, which made these traumatic events more difficult to bear or comprehend. The research participants made the following verbal statements regarding victims: "…it

was a shock to my system because this was someone I knew … to think that … this thing that happened was really terrible"; "What affected me is the fact that this was someone I worked with … and also the way the rock struck him … it injured him in such a way … I never thought that it could happen"; "Yes I was disturbed … because I knew the deceased … I stayed with him in the same room previously … at the hostel"; "We shared our problems … because we came from the same home town"; "…then he moved out … but we continued to be friends afterwards."

### *Social Support and Acceptance of the Situation as It Stands*

The victims of traumatic events were happy when their families, especially wives and children, accepted their condition after a traumatic event and were willing to continue to love them as if nothing was wrong. This gave them strength to face life despite difficulties presented to them by their disabilities. The following is an example of what they had to say about their families during traumatic events:

> I was badly disturbed but as my wife kept visiting me and encouraging me … and ended up accepting my situation … I am not the first person to use a wheelchair … There are many people who experience accidents … and use wheelchairs ... At least I am alive … I must accept what has happened … my attitude is that I got injured and I am using a wheelchair but life must go on … What fills my heart the most is that I can see my children … growing up … going to school.

## Limitations of the Study

The use of a qualitative research design is necessary to give meaning to the collected data. There were some shortcomings in terms of the interviewing style of the fieldworker. It became evident during data analysis and the writing of the report that there was inadequate probing of emerging themes presented by the employees or research participants. Such information includes the following: (1) the duration of illness in cases of individual employees who were presented to the medical doctor or psychiatrist for treatment. Such information could have been of assistance in determining if these employees did suffer from PTSD.

Again, the fact that some of the employees had already been ill and improved in their conditions might be a limiting factor in ascertaining if they really suffered from PTSD. The researchers in such cases would rely a great deal on hospital records available to them to substantiate some of the verbal comments made by the research participants (employees).

## Recommendations

Regarding the practice of healthcare practitioners, it is important to prioritise the psychological well-being of survivors of traumatic events over their physical injuries. The psychological experience lasts longer than the physical injuries. It also impacts more on the survivor's future functioning as an employee in the organisation.

It is also necessary to utilise these findings and those of other similar studies to generate a protocol or guidelines to be followed by healthcare practitioners in managing or treating survivors of traumatic events in the mining sector.

## Conclusion

The findings reveal that the PTSD management did not meet expectations. An integrated approach is recommended for the future treatment of psychological and physical trauma among survivors of traumatic events in the mining sector.

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