POSTTRAUMATIC STRESS DISORDER IN ANTI-APARTHEID WAR VETERANS IN SOUTH AFRICA

Boitumelo Mokgatle

0602922A

Supervisor: Dr Laila Paruk

A research report submitted in a submissible format to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Medicine in Psychiatry.

Declaration

I, Dr Boitumelo Mokgatle (0602922A), declare that this research report is my own work. It is being submitted in partial fulfilment of the requirements for the degree of Master of Medicine in Psychiatry. It has not been submitted before for any degree or examination at this or any other university.

Dr Boitumelo Mokgatle

03 May 2023

Authors' Contributions

Declaration: Student's contribution to article(s) and agreement of co-author(s)

I, Boitumelo Mokgatle, student number 0602922A, declare that this Thesis/Dissertation/Research Report is my own work and that I contributed adequately towards research findings published in the article(s) stated below which are included in my Thesis/Dissertation/Research Report.

Signature of Student:  **Date:** ……03/05/2023……

Name of Primary Supervisor: ……Dr Laila Paruk……

Signature of Primary Supervisor: …….. **Date:** ……03/05/2023…….

Agreement by co-authors: By signing this declaration, the co-authors listed below agree to the use of the article(s) by the student as part of his/her Thesis/Dissertation/Research Report. In cases where the student is not the 1st author of a published article, the primary supervisor must explain (under comments) why the student is entitled to use the paper for his/her degree purposes.

Article 1: Title: PostTraumatic Stress Disorder in Anti-apartheid veterans in South Africa.

Journal name, year, volume and page numbers: ……

Authors	Name	Signature	Date
1st author			
2nd author			
3rd author			
4th author			
5th author			
6th author			

Comments by primary supervisor: ……
……

Dedication

This paper is dedicated to my beloved parents.

Mr Goitsemang Frederick Mokgatle: 1951-2021

and

Mrs Dorcas Mamonnye Mokgatle: 1953-2008.

You are dearly missed.

Presentations

This work was presented at the University of the Witwatersrand Department of Psychiatry research day in June 2022.

Prizes and Awards

None

Author Guidelines for the South African Journal of Psychiatry

Original Research Article

The guidelines for submission of original research articles to the South African Journal of Psychiatry are the following:

Word limit	3000-4000 words (excluding the structured abstract and references)	4206
Structured abstract	250 words to include a Background, Aim, Setting, Methods, Results and Conclusion	275
References	60 or less	19
Tables/Figures	No more than 7 Tables/Figures	6 Tables/figures
Ethical statement	Should be included in the manuscript	Page 6
Compulsory supplementary file	Ethical clearance letter/certificate	Appendix B

Abstract

Background

Post-Traumatic Stress Disorder in military veterans is well studied in several countries. In South Africa there is a specific group of military veterans who were involved in the fight against South Africa's apartheid regime. They were not only exposed to military combat trauma but had the additional challenge of fighting against the government and law enforcement at the time. Although apartheid ended thirty years ago, the enduring and intergenerational sequelae of trauma are well-described, and therefore exploring PTSD in this group is important and necessary.[14, 5]

Aim

To explore PTSD in veterans who participated in the fight against apartheid, and to assess their current functional level.

Setting

Gauteng, South Africa.

Methods

Military veterans were sourced from the Johannesburg area in the province of Gauteng. A simple random sampling technique was used. Military veterans who were part of apartheid-related conflicts between 1960 and 1991 were included. Each participant was provided with a 24-item questionnaire to complete. A total of 89 military veterans was included in the study.

Results

The mean PTSD score was 49.8 and the self-reported rate of PTSD was 91%. Although 57.6% of the sample reported military combat as their index trauma, 6.7% reported it as physical assault. Furthermore 11.3 % reported multiple traumatic indicators and had the highest mean, however this was found to be statistically insignificant ($p<0.05$). There was an impact on

interpersonal and social functioning, and the total rate of unemployment in the sample was over 80%.

Conclusion

There is a high rate of self-reported PTSD in military veterans who fought against apartheid. Furthermore, there is associated functional impact in relationships and occupational functioning.

Keywords: Military, combat, veteran, PTSD, trauma

Acknowledgements

The authors thank the department of Psychology at Chris Hani Baragwanath Academic Hospital for their support. This manuscript is the research work of Dr B Mokgatle for Master of Medicine in psychiatry, under the supervision of Dr L Paruk.

Contents

List of Tables

Abbreviations

ANC	African National Congress
APLA	Azanian People's Liberation Army
AZANLA	Azanian National Liberation Army
AZAPO	Azanian People’s Organization
CHBAH	Chris Hani Baragwanath Hospital
DSM-5	Diagnostic and Statistical Manual, 5th Edition
HREC	Human Research Ethics Committee
MK	uMkhonto we Sizwe
NCPTSD	National Centre for PTSD
NCS-R	National Comorbidity Survey Replication
NPAT	National Peace Accord Trust
PAC	Pan Africanist Congress
PSS-SR5	Post Traumatic Stress Disorder Symptom Scale Self-Report
PTSD	Post Traumatic Stress Disorder
US	United States
WMH	World Mental Health

Submissible Paper

Posttraumatic Stress Disorder in Anti-Apartheid war Veterans in South Africa

Introduction

Trauma is common throughout the world and exposure to it has been associated with poor mental health. Trauma can be defined as an incident in which a person is exposed to actual or threatened death, serious injury or sexual violation. In a report based on the World Mental Health (WMH) surveys it was found that 70 percent of the global population had been exposed to a traumatic event.[1] Although the majority of trauma-exposed individuals respond with resilience, a substantial minority go on to develop post-traumatic stress disorder.

Posttraumatic stress disorder (PTSD) is the trauma- and stressor-related disorder that develops after an index traumatic event. According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), PTSD is associated with significant distress or impairment in one or more areas of functioning. [2] It is a psychiatric illness which was first recognized in war veterans, and thereafter widely recognized in those who experienced other traumas. [3]

Prevalence of PTSD

The lifetime prevalence of PTSD varies widely across countries. Multiple studies have shown prevalence rates ranging from 1.7 percent to 9.2 percent. Surveys assessing PTSD showed rates of 2.3 percent in South Africa, 2.5 percent in Iraq, and 3.4 percent in Lebanon. [1] According to the National Comorbidity Survey Replication (NCS-R), a large epidemiological study in the United States, the lifetime prevalence of PTSD in adults is 6.8 percent.

Previous work on PTSD has found it to be more prevalent in high-income countries with a significant associated comorbidity and morbidity. However, over the years, due to the inclusion of middle- and lower-income countries, there has been a clearer picture of the distribution of PTSD globally.[4]

The South African Stress and Health Study was the first survey to explore exposure to traumatic events and its consequences in a representative sample. Consequently, it was found that, in South Africa, witnessing traumatic events was one of the most commonly reported experiences among participants.[13] Events that involved witnessing trauma also carried the highest

conditional risk of PTSD. Over 50 percent of all PTSD cases were associated with witnessing trauma.

PTSD and Military Combat

Military personnel are often exposed to traumatic events while deployed in war. The National Centre for PTSD (NCPTSD) in the United States of America has reported that, following the findings of research into PTSD among Vietnam War veterans, PTSD has been observed in all veteran populations that have been studied.[7] In a meta-analysis, Kok et al reported an average post-deployment PTSD prevalence of 13.2 percent among combat units. In Gulf war veterans, the prevalence of PTSD was 12.1 percent. [5] In a four-year study of hospitalized Nigerian army veterans, a prevalence rate for PTSD was found to be 22 percent .[8] A study conducted on South African border war veterans found a high level of PTSD (33%) among former national defence force members. [9]

PTSD is highly comorbid with other mental states, including depression, anger and violence, guilt, substance abuse and suicidality .[5] In the Vietnam experience study which assessed the health of Vietnam veterans, 66 percent of those who met the criteria for PTSD also met the criteria for another anxiety or mood disorder, and 39 percent had current alcohol abuse or dependence.[6] PTSD-related emotional distress in veterans encourages emotional withdrawal from intimate relationships and compromises opportunities for effective communication .[6]

The nature of traumatic experiences, immediate subjective responses to the experiences, and the degree of acute stress reactions are predictors to the development of PTSD in combatants.[4] Fifteen percent of male veterans still suffered from PTSD 15 years after the end of the Vietnam War, and almost a third of them for a lifetime. [5] The findings of the National Vietnam Veterans Longitudinal Study supported the view that a number of combat veterans from that war continued to suffer from symptoms nearly four to five decades after their war zone experiences. [10] Chronic PTSD rates have been reported to be higher among combat veterans who experienced multiple traumatic stressors in a war zone characterized by generalized danger for a prolonged period, compared to those exposed to a single traumatic event. PTSD due to combat has also been associated with a late onset of symptoms, a chronic course, delayed help-seeking behaviour, and substantial morbidity. [4]

It was reported in Iraq and Afghanistan that those war veterans who reported PTSD symptoms were also likely to report suicidal ideation. [11] Furthermore, while veterans represented a small

percentage of the population of the United States, (1%), they made up 22 percent of all completed suicides.[12]

Trauma in antiapartheid military veterans in South Africa

South Africa, together with Angola, Namibia, Mozambique and Zimbabwe, was involved in armed conflict between 1960 and 1990. After the banning of the African National Congress (ANC) in the 1960s, freedom fighters from the ANC and other movements took up an armed struggle against the South African government in a fight to end the apartheid regime. [14] Each movement established its own armed wing – Umkhonto we Sizwe (MK) which fell under the banner of the ANC, the Azanian People's Liberation Army (APLA), the armed wing of the Pan Africanist Congress (PAC), and the Azanian National Liberation Army (AZANLA), which was linked to the Azanian People's Organization (AZAPO). Former soldiers have reported that they have suffered psychological scars not only as a result of witnessing traumatic events, but also because of inflicting them on others as well.[14] According to the National Peace Accord Trust (NPAT), there are an estimated 80 000 of these ex-combatants still alive today. [14]

Long term exposure to trauma can not only lead to a late presentation (what has been referred to as delayed onset PTSD). This could be exacerbated by subsequent stressors and neurobiological changes in the brain and thus can present with severe symptoms. In other studies, participants have experienced posttraumatic symptoms twenty years after the war. These were possibly exacerbated by midlife changes and repressed memories coming forth. [9] In 2006, a study of the impact of these violent years on ex-combatants was conducted. There were 214 participants from Gauteng, KwaZulu-Natal and the Eastern Cape, who were asked to complete a questionnaire. Seventy-nine percent had witnessed killing, 57 percent had seen someone in their family killed or injured, 10 percent had killed someone, 83 percent had experienced community violence, and 38 percent had participated in community violence. [14]

Regarding the psychological effects, ex-combatants have reported nightmares, preoccupation about their violent past, fear of people, poor concentration and memory, feelings of anger, irritability, aggression, hallucinations and difficulty in taking on social roles such as being a parent or breadwinner. [14] A former soldier reported the urge to kill, even when there was no clear enemy, at times wanting to kill his own family. [14]

In South Africa there have been studies carried on PTSD in veterans, but very limited research in those who fought against apartheid, and how it has had an impact on their functioning. With

close to 81000 military veterans in South Africa, and 18000 being APLA and MK veterans, it is important to assess how the veterans may have been affected or identified as having PTSD, and the impact on their lives subsequently. [15] In the study carried out by Connell et al. (2013), the sample was of soldiers employed by the South African Defence Force to maintain the apartheid government's status quo, while the current study sought to provide insight specifically about those who fought against apartheid.[9] Although these veterans laid down arms thirty years ago, it is known that the long-term effects of trauma are pervasive and have intergenerational impact. [5] South Africa is in present times a country with high rates of trauma, and understanding the lived experience of the previous generation may contribute to a holistic understanding of current presentations of trauma.[13]

Aims and objectives

It was hypothesized that there would be high rates of reported PTSD amongst veterans who fought apartheid, resulting in significant functional impairment. The aim of this study was to explore PTSD in veterans who participated in the fight against apartheid, and to assess their current functional level. This study had the following objectives:

- To screen for PTSD in veterans involved in the fight against apartheid
- To describe the demographics of people who report symptoms of PTSD; and
- To assess the impact of these symptoms on the functioning of veterans

Methods

Study design and setting

This was a quantitative study which was conducted in Johannesburg, Gauteng, South Africa.

Study population and sampling

The population was sourced through a simple sampling technique within the Gauteng province. Military veterans' populations in the Johannesburg area, were identified through information provided by the members of the Umkhonto WeSizwe and APLA military veterans. Veterans who were part of the conflicts between the years 1960 to 1991 were included and given a description of the requirements of the study.

In all, 90 veterans agreed to participate, but data from one could not be used, leaving a sample of 89.

Data collection

On the day of data collection, study participants were given an information sheet and consent form, which included a distress protocol. After consent was obtained, a brief socio-demographic questionnaire was administered, followed by a tool to screen for symptoms of PTSD.

Screening tools are widely used in studies looking at PTSD in veterans. However, their use is in identifying potential PTSD cases and not for diagnostic purposes and are therefore more useful for research purposes. In clinical practice they can be used in conjunction with clinical interviews to confirm a diagnosis of PTSD. The screening tools available are interview-based or self-report measures.[16] Although self-report scales have the potential to over-report symptoms, they can be weighed against the clinical presentation. Several scales have been found to have a high sensitivity and specificity and have been recommended by the United States (US) Department of Veteran Affairs.[19]

The screening tool used was the Posttraumatic Stress Disorder symptom scale self-report (PSS-SR5), which is a 24 item questionnaire that assesses symptoms of PTSD. The questionnaire begins with a trauma screening and then the identification of the index trauma. This is followed by 20 questions assessing the frequency and intensity of 20 PTSD symptoms. There are also two questions assessing distress and interference in everyday life, and two questions regarding onset and duration of symptoms. The 20 PTSD symptoms are rated on a five-point scale of frequency and severity ranging from 'not at all' (scored as 0) to 'severe' (scored as 4). The total score possible ranges from 0 to 80. Symptoms are considered present when rated '1' or higher. According to the manual, a score of 28 can be used as a cut-off point for possible diagnosis of PTSD, with scores between 0 and 27 suggesting no diagnosis, and 28 to 80 suggesting probable diagnosis. Permission to use the scale was obtained from the author.

Data analysis

The data were captured on an Excel spreadsheet. Once checked and cleaned the spreadsheet was exported to JASP for statistical analysis.[17] The data were first analysed descriptively with respect to socio-demographic information and the prevalence of PTSD and then presented as frequencies and percentages. The impact on functioning and duration of symptoms were also described. A chi-square (χ^2) test was used for assessing associations between categorical variables and an analysis of variance (ANOVA) was used for continuous data.

Ethical considerations

Ethical approval was obtained from the Human Research Ethics Committee (HREC), University of the Witwatersrand, ethical clearance number M200707.

A distress protocol was in place in the event that a participant was affected psychologically by the questions. Permission to use psychology services at Chris Hani Baragwanath Academic Hospital (CHBAH) was obtained.

All participants signed informed consent. To maintain anonymity, no participant names were used and all data de-identified.

Results

The total number of participants was 89,

Demographic information

Demographic information may be seen in Table 1. Most of the participants (77.5%) were in the 50-to-60-year age range and the majority were males (94.4%). Most were either single or married (87.6%), had completed high school (84.3%), and were unemployed (80.9%).

Table 1: Demographic Information

Age group	**N**	**%**
45-50 y	5	5.6
51-60 y	69	77.5
61-70y	13	14.6
71-80 y	2	2.2
Gender	**N**	**%**
Female	5	5.6
Male	84	94.4
Marital status	**N**	**%**
Single	44	49.4
Married	34	38.2
Divorced	8	9.0

Widowed	3	3.4
Highest level of education	**N**	**%**
Primary school	3	3.4
High school	75	84.3
Tertiary	11	12.4
Employment status	**N**	**%**
Unemployed	72	80.9
Employed	8	9.0
Grant	8	9.0
Unknown	1	1.1

Trauma Experiences

While the participants were asked to identify all trauma experiences and then focus on one to complete the PSS-SR5, many reported multiple traumas. These results are presented in Table 2. Of those who reported single traumas, the majority (64.0%) identified military combat as the index traumatic event, while 6.7% identified physical assault. All of those reporting more than one index trauma (29.2%) implicated military combat together with one or more of physical assault, motor vehicle accident, life-threatening illness, natural disaster, and sexual assault.

Table 2: Index Trauma Events

One Traumatic Indicator	**n**	**%**
Military combat	57	64.0
Physical assault	6	6.7
Total	**63**	**70.7**
Military Combat and One Other Indicator	**n**	**%**
Military combat and physical assault	7	7.9
Military combat and life-threatening illness	4	4.5
Military combat and accident	2	2.2
Military combat and natural disaster	2	2.2
Military combat and sexual assault	1	1.1
Total	**16**	**17.9**
Military Combat and Two or More Other Indicators	**n**	**%**

Military combat, accident, and natural disaster	1	1.1
Military combat, physical assault, and accident	3	3.4
Military combat, physical assault, and life-threatening illness	3	3.4
Military combat, accident, physical assault, and life-threatening illness	3	3.4
Total	**10**	**11.3**

PTSD profile

The mean PTSD score on the PSS-SR5 was 49.8. As the cut-off for a probable diagnosis of PTSD is 28, this indicates a probable diagnosis of PTSD for the majority of the sample. There were only 8 (9.0%) who scored below 28. Seven (7.9%) of these indicated a single traumatic event as described in Table 2. The PTSD scores were then compared across the number of traumatic indicators to see whether they differed significantly for multiple traumas (Table 3). Even though the experience of multiple traumas had the highest mean, the ANOVA indicated that there were no significant differences between the groups ($p>0.05$). It should also be noted that the second highest score was for physical assault.

Table 3: Number of traumatic incidents

Amount of Trauma	**Mean**	**SD**
One Traumatic Indicator – Military Combat	49.7	17.0
One Traumatic Indicator – Physical Assault	52.5	25.7
Military Combat and One Other Trauma	45.6	19.6
Military Combat and Two or More Other Traumas	55.9	19.9

Effect of difficulties from PTSD symptoms

One question asked whether the PTSD symptoms bothered the participant, and the next assessed impact on everyday life. These results may be seen in Figure 1.

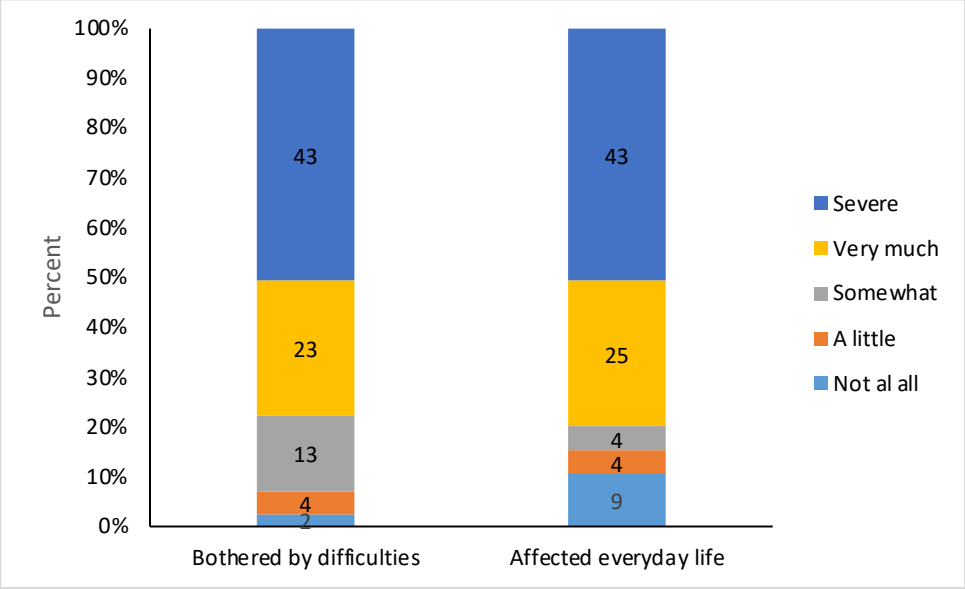

Figure 1. The percent distribution of Likert scores from anti-apartheid veterans in response to the question about how much they were bothered by difficulties associated with the trauma (left column) and how much has trauma affected their daily lives. Values within the bars indicate counts per Likert question.

Onset of PTSD symptoms

Participants were asked when they first noticed symptoms. For three-quarters of the sample (75.3%), the symptom onset was more than six months after the trauma. This is shown in Table 5, for the index traumas as presented in Table 3. The highest occurrence was greater than six months after military combat. (51.7%). However, the chi-square analysis indicated that these results were not statistically significant ($p>0.05$).

Table 4: PTSD Symptom Onset

Less than six months	**n**	**%**
Physical Assault	3	3.4
Military Combat	9	10.1
Military Combat and One Other Trauma	4	4.5
Military Combat and Two or More Other Traumas	2	2.2
Total	**18**	**22.2**
More than six months	**n**	**%**
Physical Assault	2	2.2

Military Combat	46	51.7
Military Combat and One Other Trauma	11	12.4
Military Combat and Two or More Other Traumas	8	9.0
Total	**67**	**75.3**
No answer	4	4.5

Duration of PTSD symptoms

The duration of trauma symptoms may be seen in in Table 6. The symptoms (87.6%) that persisted for longer than a month occurred mainly for those reporting military combat as their index trauma (58.4%). This was statistically significant ($\chi 2(3) = 10.416; p = 0.015$).

Table 5: Duration of PTSD Symptoms

Less than one month	**N**	**%**
Physical Assault	2	2.2
Military Combat	3	3.4
Military Combat and One Other Trauma	0	0.0
Military Combat and Two or More Other Traumas	2	2.2
Total	**7**	**7.9**
More than one month	**N**	**%**
Physical Assault	3	3.4
Military Combat	52	58.4
Military Combat and One Other Trauma	15	16.9
Military Combat and Two or More Other Traumas	8	9.0
Total	**78**	**87.6**
No answer	4	4.5

Discussion

The study hypothesis posited that there would be a high rate of PTSD reported by military veterans who fought against apartheid. Our study findings, which are consistent with a number of other studies, indicate that there is a high rate of self-reported symptoms of PTSD in military veterans. The mean score for our sample was 49.8 which made the likelihood of PTSD to be 91%, which is higher than other research figures. The Nigerian army veterans' prevalence rate was 22% [14], while the rate for the South African Border war veterans was 33%. [15]

Although the screening tool required only one index trauma, the majority of the sample population felt that they couldn't pick a specific incident. Although some of the traumas experienced were not during actual military combat, they are still relevant because most of the participants reported that they experienced all the trauma during the fight against apartheid.

Chronic rates of PTSD have been reported to be higher among combat veterans who experienced multiple traumatic events, as compared to a single event.[5] 17.9 % of the participants had 1 other traumatic indicator while 11.9% had 2 or more indicators. In this study the mean score was highest in those with 2 or more traumas. In Table 3, the mean for multiple indicators of trauma was 55.9, which is highest of all the indicators. Although this was not found to be statistically significant, in clinical settings these patients are vulnerable to developing more severe forms, such as complex PTSD. This group of participants were perhaps at higher risk of multiple traumatic events in light of the duration of the armed struggle, spanning from the 1960s to 1990.Additionally, being a smaller group as compared to the more resourced South African national defence force meant potentially fighting against an enemy who could cause more harm. As reported in literature, people with multiple traumatic experiences, tend to have later onset of symptoms, a more chronic course and delayed help-seeking behaviour as well as substantial morbidity.

6.7% of veterans indicated that their most traumatic experience was physical assault. This was related to police/prison brutality as verbally reported by the participants. Besides direct assault and its impact, this could also be due to witnessed traumas. As stated in the South African Stress and Health study, witnessed trauma carries the highest risk of PTSD. [13] Physical assault also has the dual implication of physical injury, which in some instances leads to physical disability and perpetuates the psychological trauma. In light of the time passed since the index traumas, it is important to be mindful of the impact of other traumatic events that may have

been experienced since, and the impact thereof. The compounding effect cannot be ignored as it would contribute to the overall symptom severity and functional impact.

PTSD can lead to emotional withdrawal in relationships, decreased intimacy, and ultimately a lack of social support due to conflicts that may arise. [9] A large number of our sample population was single, (38.2% were married) which may be due to psychological manifestations as such as avoidance or difficulties in adjustment within relationships. People with PTSD can react to potential threats with greater intensity, and eventually develop an exaggerated response to stimuli in their environments, when reminded of the traumatic event. This further reinforces the distress, anxiety and worsens the social isolation and dysfunction, ultimately impacting on their relationships. [5] In addition, other covariates such as childhood trauma, attachment and difficulties unrelated to military combat, as well as partner factors can further exacerbate these difficulties. Over 50% of the sample had at some point in the past formed an intimate relationship with a significant other, however at the time of the study, 9% were divorced and 3.4% widowed.

Ninety-four percent of the sample was between 51-60 years old, with just over 5% of the total sample female. Over 80% of the sample was unemployed and not receiving any grant. This raises concerns regarding the challenges of reintegration into civilian life. Perhaps the psychological effects on health place a strain on the adaptive capacity of individuals, which thereby leads to an increased risk of disease. Based on their current ages, it can be inferred that the majority of the sample joined the struggle at an early age, and therefore must have experienced trauma at an early age.

In our study, 75.3% of participants reported PTSD symptoms starting more than six months after their traumas and experienced them for more than a month. 15% of male veterans suffered from PTSD 15 years after the Vietnam War while a third of those, continued to have symptoms for a lifetime.[8] This is suggestive of the protracted length of the symptoms of PTSD and the impact thereof. In figure 1, 43% of the sample reported severe impact to their current lives, leading to unemployment and exacerbation of psychological stressors. This is also evident in the paucity of education post deployment, as only 12.4% have a tertiary qualification.

Internationally, war veterans often struggle to access healthcare, not just for the symptoms of PTSD, but for the co-morbidities associated and for related health challenges that arise from physical trauma.[5] South African anti-apartheid veterans are at the mercy of State health services.

Limitations

Self-report scales are generally subjective, prone to bias and over-reporting of symptoms.[18] Over-reporting may reflect a process through which an individual intentionally or unintentionally intensifies their existing symptoms in an attempt to express legitimate distress.

We were unable to reach the expected number of veterans due to difficulties accessing the Department of Military Veterans database.

The study did not explore the background to the participation in the armed struggle, specifically the conditions around joining, the presence of coercion, and the age at which the participants joined.

The demographic questionnaire did not delineate between the old age pension and disability grants provided by the Department of Social Development. Therefore, participants who were on either, chose the same option, potentially obscuring the results.

The study did not explore whether participants had accessed care and treatment for their PTSD symptoms, nor did it examine for the presence of comorbid mental illness as well as substance use disorders, which are common in PTSD. In addition, the study was unable to isolate the contribution of combat trauma within the overall exposure of trauma over the years.

The question asking the participants whether they were 'bothered' by their symptoms, or whether the symptoms 'interfered' with their lives, is vague. However this is directly out of the rating scale. It would have been informative to explore whether there is any link between the answers to this question and demographic data.

Literacy level may have also impacted the study. The majority did reach high school, but some participants required assistance in translation of the questions.

Conclusion

There is a high rate of reported symptoms of PTSD in military veterans who fought against apartheid between 1961 and 1991.While the struggle against apartheid ended almost thirty years ago, based on the findings of this study, this is a relatively young population. Therefore, the presence of high rates of PTSD in this population potentially places a higher burden on healthcare and social services systems. Further studies may include clinical assessments on the

participants, to confirm the prevalence of PTSD, as well as diagnose co-morbidities. Public health programs should be aimed at this specific population, to mitigate the effects of PTSD on this and future generations and to assist in effective help-seeking behaviours, and access to healthcare and social services.

Acknowledgements

The participation of the veterans and the assistance of the Fleurhof and Palmridge residential communities are acknowledged with thanks. Furthermore we thank the assistance of CHBAH psychology department.

Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Author contributions

The first author undertook this study as part of the requirements for the Master of Medicine degree. The second author supervised this study. Both authors contributed to the design and implementation of the research, the analysis of the results, and the manuscript's writing.

Funding

This research received no specific grant from any funding agency in the public, commercial sectors and was fully funded by the primary investigator, B M.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Disclaimer

The views expressed in the submitted article are the author’s views and not an official position of the institution.

References

1. Koenen K.C, Ratanatharathorn A, McLaughlin K.A et al. Posttraumatic stress disorder in the world mental health surveys. Psychological Medicine. 2017; 47, 2260–2274

2. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders.5th edition. Washington, DC; American psychiatric association, 2013.

3. Spottswood M, Davydow D.S, Huang H. Post- traumatic stress disorder in primary care: a systematic review. Harvard Rev Psychiatry. 2017; 25(4): 159–169.

4. Lukoye AB. Dan J. Stein B, et al. Epidemiology of posttraumatic stress disorder: prevalence, correlates and consequences. Curr Opin Psychiatry. 2015 ; 28(4): 307–311

5. Ghaffarzadegan N, Ebrahimvandi A, Jalali M, S. A Dynamic Model of Post-Traumatic Stress Disorder for Military Personnel and Veterans. Journal Pone. 2016; 11(10).

6. Seedat S. War and Post traumatic stress disorder. SAJP. 2006; 12 (1):13-16

7. Mashike L, Mokalobe M, Lamb G et.al . The reintegration into civilian life of demobilised Umkhonto we Sizwe and Azanian People's Liberation Army ex-combatants.2003.

8. Okulate G.T, Jones O.B.E. Post-traumatic stress disorder, survivor guilt and substance use – a study of hospitalised Nigerian army veterans. SAJP. 2006; 12 :37-40

9. Conell M.A , Omole O, Subramaney U et.al Post traumatic stress disorder and resilience in veterans who served in the South African border war. African Journal of Psychiatry. 2013; 16(6): 19.

10. LaMarca S.D, Niles B.L, King D.W et.al. Temporal Associations Among Chronic PTSD Symptoms in U.S. Combat Veterans. Journal of Traumatic Stress.2015; 28: 410–417

11. Snir A, Levi-Belz Y, Solomon Z. Is the war really over? A 20-year longitudinal study on trajectories of suicidal ideation and posttraumatic stress symptoms following combat. Psychiatry Research .2017; 247: 33–38.

12. DeBeer B.B, Kimbrel N.A , Meyer E.C , Gulliver S.B, Morissette S.B . Combined PTSD and depressive symptoms interact with post-deployment social support to predict suicidal

ideation in Operation Enduring Freedom and Operation Iraqi Freedom veterans. Psychiatry Research 2014; 216:357–362.

13. Atwoli L, Stein D.J, Williams D.R , et al. Trauma and posttraumatic stress disorder in South Africa: analysis from the South African Stress and Health Study. BMC Psychiatry.2013; 13:182.

14.Nell M, Shapiro J .No place by the fire: The story of South African ex combats and the national peace accord trust. 2012.

15. The defence web. https://www.defenceweb.co.za/

16. Committee on the Assessment of Ongoing Effects in the Treatment of Posttraumatic Stress Disorder; Institute of Medicine. Treatment for Posttraumatic Stress Disorder in Military and Veteran Populations: Initial Assessment. Washington (DC): National Academies Press (US). 2012.

17. Jasp, A fresh way to do statistics. https://jasp-stats.org/

18. Constans J.I, Kimbrell T,A , Nanney-J,T .Over-reporting bias and the Modified Stroop Effect in OEF/OIF Veterans with and without PTSD. J Abnormal Psychology. 2014; 123(1): 81–90.

19. United states department of veterans affairs. https://www.ptsd.va.gov/professional/assessment/adult-sr/index.asp

Appendix A: Approved Research Protocol

POSTTRAUMATIC STRESS DISORDER IN ANTI APARTHEID VETERANS IN SOUTH AFRICA

Protocol submission

Name of candidate: Dr Boitumelo Mokgatle MBBCh(Wits)

Staff number: A0021199

Supervisor: Dr L Paruk MBBCh(Wits), DMH(SA), FCPsych(SA), MMed(Wits)

Table of contents

Introduction and Background

Trauma is common throughout the world and exposure to it is associated with poor mental health. Trauma can be defined as an incident in which a person is exposed to actual or threatened death, serious injury or sexual violation. In a report based on the World Mental Health (WMH) [1]Surveys, it was found that 70% of the population had exposure to a traumatic event, ranging from 29% in places such as Romania up to 83% in Peru. Although the majority of trauma-exposed individuals respond with resilience, a substantial minority go on to develop post-traumatic stress disorder.

Posttraumatic Stress Disorder (PTSD) is the trauma and stressor-related disorder that develops after a potentially traumatic event, and is associated with significant distress and/or impairment in one or more areas of functioning [Diagnostic and Statistical Manual of Mental Disorders, 5th ed. (DSM-5)][2]. It is a psychiatric illness which was first recognized in war veterans, and thereafter widely recognized in those who experienced other traumas, such as abuse or traumatic injuries and life-threatening illnesses[3]. It has 4 core features:

1) Re-experiencing symptoms of the event that include nightmares or flashbacks;
2) Avoidant behaviour (situations, places, and people that are reminders of the traumatic event); and
3) Hyperarousal symptoms, such as irritability, concentration problems, and sleep disturbances, and
4) Negative cognition and mood [4]

The symptoms should be present for at least 1 month and if persistent beyond 3 months then it is considered to be chronic PTSD.

Traumatic events which usually result in the symptoms of PTSD include war, violent personal attacks, hostage situations or kidnappings, being confined as a prisoner of war, torture, terrorist attacks and severe car accidents. In children, sexual abuse, witnessing serious injuries or unexpected death of a beloved one may contribute to a diagnosis of PTSD. Risk factors for PTSD include female gender, previous psychiatric illness, severity and nature of exposure to the traumatic event, as well as lack of social support[5].

Literature review

The lifetime prevalence of PTSD varies widely across countries. Multiple studies have shown prevalence rates ranging from 1.7% to 9.2%. Other surveys that assessing PTSD showed rates of 2.3% in South Africa, 2.5% in Iraq and 3.4% in Lebanon [1]. According to the National Comorbidity Survey Replication (NCS-R), a large epidemiological study in the United States, the lifetime prevalence of PTSD in adults is 6.8% and the annual 3.5%.

Previous work on PTSD found that it was more prevalent in high income countries as well associated significant comorbidity and morbidity. However, over the years due to the inclusion of middle and lower income countries into research, there has been a clearer picture of the distribution of PTSD globally[6]. In economically developed countries where most of the epidemiological surveys of trauma exposure and PTSD have been conducted, exposure to political violence such as torture and other state-executed human rights violations, apart from combat, is low.

A population-based study done in the 1990s in four low-income post-conflict settings (Algeria, Ethiopia, Gaza and Cambodia) found that the risk of PTSD that is associated with torture and with conflict-related events experienced after the age of 12 years is generally higher than that associated with other stressors such as emotional and physical abuse experienced in childhood[7]. In other studies, the prevalence of PTSD has also been proven to be high in certain countries such as Ethiopia, with lifetime prevalence ranging from 15.8% to 37.4% in Algeria among survivors of war or conflict. In conflicts where members of the population are targeted with sexual violence, PTSD prevalence may be even higher, with population-based studies indicating a prevalence of 50.1% in the eastern Democratic Republic of Congo and 74.3% probable PTSD in northern Uganda[8].

PTSD is highly comorbid with other mental illnesses that can occur post trauma, including depression, anger and violence, guilt, substance abuse and suicidality[9]. 66% of those who met criteria for PTSD also met criteria for another anxiety or mood disorder and 39% had current alcohol abuse or dependence according to the Vietnam experience study[10]. PTSD often affects interpersonal and occupational functioning, and it has been estimated that 3.6 days of productivity are lost per month.

South Africa is a country known with a high rate of crime where a large proportion of citizens have been exposed to primary or secondary trauma. Approximately 2.1 million serious cases were reported to the police for the year April 2009 to March 2010 [11]. The number of murders were reported to have increased from 16 259 murders in 2012/13 to 17 068 in 2013/14, a 3.5% increase. Robberies with aggravating circumstances increased by 12.7% from 105 888 cases in 2012/13 to 119 351 cases in 2013[12].Studies have consistently shown that violence is more likely to be associated with PTSD than other forms of trauma[13].

Military personnel are often exposed to traumatic events while deployed in war. The National Centre for PTSD (NCPTSD) in the USA reports that following the findings of research into PTSD among Vietnam War veterans, PTSD has been observed in all veteran populations that have been studied, including those from World War II, the Korean conflict and the Gulf War[14]. In a meta-analysis, Kok,

Herrell, Thomas, and Hoge reported an average post deployment PTSD prevalence of 13.2% among combat units. In the Gulf war veterans the prevalence of PTSD was 12.1 % [9] . In a 4 year study of hospitalised Nigerian army veterans the prevalence rate of PTSD was found to be 22%[15]. A study done on the South African border war veterans found a high level of PTSD (33%) among former national defence force members[16].

The nature of traumatic experiences (e.g. frequency and intensity), the immediate subjective responses to the experiences, and the degree of acute stress reactions have been associated with the development of PTSD in combats[6]. 15% of male veterans still suffered from PTSD 15 years after the end of the Vietnam War and almost a third of them for a lifetime[9]. The findings of the National Vietnam Veterans Longitudinal Study support the view that a number of combat veterans from that war continue to suffer from prolonged symptoms nearly four to five decades after their warzone experiences[17]. Chronic PTSD rates are reported to be higher among combat veterans who experienced multiple traumatic stressors in a warzone characterized by generalized danger for a prolonged period compared to those exposed to a single traumatic event. PTSD due to combat is also not unusually associated with a late onset of symptoms, a chronic course, delayed help seeking behaviour, and substantial morbidity [6].

Screening tools are widely used in studies looking at PTSD in veterans however their use is in identifying potential PTSD cases and not for diagnostic purposes and therefore more useful for research purpose. However, they have a role in clinical practice where they can be used in conjunction with clinical interviews to confirm a diagnosis of PTSD. The screening tools available are interview based or self- report measures[24] . Although self -report scales have the potential of over reporting of symptoms they can be weighed against the clinical presentation. Several scales have proven to have a high sensitivity and specificity and are recommended by the US department of veteran affairs .

Studies have also shown a relationship between PTSD in veterans and suicidal ideation. In a study involving Iraqi and Afghanistan war veterans it was reported that those who reported PTSD symptoms were likely to report suicidal ideation[18]. Data from 2012 showed that 22 Veterans commit suicide per day according to the U.S. Department of Veterans Affairs, 2013. Furthermore, while the Veterans represent a small percentage of the population (1%), they make up 22% of all completed suicides in the U.S[19].

Indirect exposure, such as witnessing the violence and death during a war/combat, has also been shown to create a chance of developing anxiety, anger, aggressive behaviour and somatic complaints, as well as for PTSD. PTSD related emotional distress in veterans encourages emotional withdrawal from intimate relationships, intimacy and opportunities for effective communication. Moreover, angry

outbursts can reduce the frequency and effectiveness of communication, problem solving as well as social support [10].

The South African Stress and Health Study[20] was the first survey to take these exposures and their consequences among a representative sample. An estimated 75% of South Africans reported experiencing at least one traumatic event, and 55.6 % have experienced multiple events. Consequently it was found that witnessing traumatic events was one of the most commonly reported experiences among participants. Traumatic events involving witnessing also carried the highest conditional risk of PTSD. Over 50% of all PTSD cases were associated with witnessing traumas.

A study of crime victims in South Africa found that 25% of them suffered from PTSD. However the lifetime prevalence of PTSD in South Africa is uncertain, estimates range from 2.3% to 19.9% [21].

In a South African study involving over 4000 participants it was found that, detention and torture are the forms of violence most strongly associated with PTSD for men, followed by domestic violence in the form of childhood physical abuse or physical abuse by an intimate partner [10] . Overall, detention and torture are more predictive of PTSD than any other form of violence, including rape, which has been found to carry the highest risk of PTSD for both men and women in previous studies.

South Africa, together with Angola, Namibia, Mozambique and Zimbabwe was involved in armed conflict between 1960 and 1990. After the banning of the African National Congress (ANC) in the 1960s, freedom fighters and other movements took up an armed struggle against the South African government in a fight to end the apartheid regime[22]. Each movement established its own an armed wing - Umkhonto we Sizwe (falling under the banner of the
ANC), the Azanian People's Liberation Army (APLA), falling under the Pan Africanist Congress (PAC), and the Azanian National Liberation Army (AZANLA) which was linked to the Azanian People's Organisation. During their participation in armed conflict, soldiers were exposed to a great deal of trauma, most of which life was threatening. Former soldiers have reported that they have suffered psychological scars not only as a result of witnessing traumatic events but inflicting them on others as well. Some still experience flashbacks and nightmares from the different wars they were involved in. According to (National Peace Accord Trust) NPAT[22] research, there are an estimated 80 000 of these ex-combats.

In 2006, a study of the impact of these violent years on ex-combatants was conducted over 3 months. There were a total of 214 participants, 109 males and 105 females from various regions in Gauteng, as well as in KZN and the Eastern Cape who had to complete a questionnaire. Seventy nine percent had

witnessed killing, 57 % had seen someone in their family killed or injured in political violence, 10 % had killed someone, 83% had experienced community violence and 38 % had participated directly in community violence [22].

Regarding the psychological effects, ex-combatants reported nightmares, preoccupation about their violent past, fear of people, poor concentration and memory, feelings of anger, violent behaviour, irritability, aggression, paranoia, hallucinations, vengeful thoughts, blaming, fear of the dark, and difficulty in taking on social roles such as being a parent or bread winner[22] . A former soldier from Limpopo had reported that aeroplanes remind him of the sound of war crafts and another reported hearing the sounds of bombs in his ears. In addition, another reported the urge to kill, even when there was no clear enemy, at times wanting to kill their own family.

It is clear from literature that PTSD can pervade in all aspects of a veteran's life. In South Africa there have been studies done on PTSD in veterans but very limited research on the disorder in those who fought against apartheid, and how it has impacted their functioning. With close to 81000 military veterans in South Africa,18000 [23]of which falling under APLA and MK veterans, it is important to assess how the veterans may be affected or identified as having PTSD, and the impact on their lives subsequently. In the study done by Connell et al (2013), the sample in that study was of soldiers employed by the South African Defence Force to maintain the apartheid government's status quo, while this study looks to provide insight into prevalence of PTSD specifically in those who fought *against* apartheid.

Hypothesis

The hypothesis is that there is a high prevalence of Posttraumatic Stress Disorder amongst veterans who fought apartheid, which results in significant functional impairment.

Study Aim

The aim of the study is to explore PTSD in veterans who participated in the fight against apartheid, and to assess their current functional level.

Study Objectives

1. Investigate the prevalence of PTSD in veterans involved in the fight against apartheid and its present impact
2. To describe the demographics of people with PTSD
3. To assess the impact of PTSD on functioning of veterans

Methods

The study will be a quantitative study, which will be conducted at Chris Hani Baragwanath Academic Hospital. The study will be a quantitative study, which will be conducted at Chris Hani Baragwanath Academic Hospital. The population, which will be a purposive sample, will be sourced from the community through a simple sampling technique. Veterans who were part of the conflicts between the years 1960 to 1991 will be included. Veterans will be contacted and given an outline of the study.

Those who show interest in participating after being contacted, and to meet the researcher at the Chris Hani Baragwanath Hospital Psychiatry department. On the day of data collection, study participants will be handed out a hard copy of information sheet and consent form, which includes the distress protocol. Thereafter if there are no objections, the questionnaire will be provided.

A brief socio-demographic questionnaire will be conducted, followed by a tool to screen for symptoms of PTSD. (Appendix A)

The screening tool to be used is the Posttraumatic Stress Disorder symptom scale self-report (PSS-SR5), which is a 24 item questionnaire that assesses symptoms of PTSD. The questionnaire begins with a trauma screen and thereafter the identification of the index trauma. This is followed by 20 questions assessing for frequency and intensity of 20 PTSD symptoms. There are 2 questions assessing for distress and interference and the last two regarding onset and duration of symptoms.

Symptoms are rated from a 5 point scale of frequency and severity ranging from 0(not at all) to 4(6 or more times a week/severe).The score ranges from 0-80. Symptoms are considered present when rated 1 or higher.

Regarding participants who may experience any distress during the data collection, a distress protocol will be followed as outlined in appendix E. If any participant feels any distress they can stop and will reassess whether they will be able to continue with the study. If unable to continue the assistance of a psychologist at CHBAH will be sort immediately and follow ups will be arranged accordingly. For those able to complete it, it will be reiterated that should they experience any distress thereafter to contact or visit the department of psychology as outlined in the information sheet. The Department of Psychology at CHBAH has already agreed to provide assistance in any cases of distress.

Data analysis

The data will be analysed using a descriptive analysis. The expected sample size is 334 participants. The sample size will be described, their socio-demographic data recorded and tabulated, and the prevalence of PTSD calculated using frequencies and proportions in percentages. The comparisons drawn will be between those with a positive screen for PTSD and those without. The impact on functioning will be described, based on data gleaned from the questionnaire. For bivariate testing between two categorical variables the Chi2 test-both categorical and continuous will be used.

Ethics

Ethics approval has been obtained from the Human Research Ethics Committee (HREC), University of the Witwatersrand, ethics clearance number M200707. Permission to conduct the research on the veterans will be obtained from the President of the South African Military Veterans Association, Mr Kebby Maphatsoe and the Department of Military Veterans. No participant's names will be used. Participants' confidentiality will be maintained by anonymising them and allocating study numbers.

A distress protocol will be followed in the event that an interviewee is psychologically impacted by the questioning. Permission to use psychology services at Chris Hani Baragwanath Hospital has been obtained. The distress protocol is attached (Appendix G).

Timing

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Literatu re review												
Preparing protocol												
Protocol Assess ment												
Ethics applicat ion												
Collecti ng data												
Data analysi s												
Writing up thesis												
Writing up paper												

Funding

The research will be self-funded. There are no significant costs expected to be incurred. The costs will mainly arise from transport reimbursement. Total costs are projected at R1000.The breakdown is as follows:

Paper and pens	R300
Photocopying	R200
Transport costs of veterans	R500

References

[1] Koenen K.C, Ratanatharathorn A, McLaughlinK.A et al. Post-traumatic stress disorder in the world mental health surveys. Psychological Medicine 2017.47, 2260–2274

[2] Diagnostic statistical manual of mental disorders.5th edition

[3] Spottswood M, Davydow D.S , H Huang. Post- traumatic stress disorder in primary care: a systematic review. Harvard Rev Psychiatry: 2017. 25(4): 159–169.

[4] Sareen J.Post traumatic stress disorder in adults: impact, comorbidities, risk factors and treatment.. CanJ Psychiatry: 2014. 59(9):460–467.

[5] Javidi H, Yadollahie M. Post- traumatic stress disorder.The International Journal of Occupational and Environmental Medicine; 2012.3:2-9.

[6] Lukoye Atwolia B. Dan J. Stein B, et al Epidemiology of posttraumatic stress disorder: prevalence, correlates and consequences. Curr Opin Psychiatry. 2015. July ; 28(4): 307–311

[7] Kaminer D, Grimsrud A, Myer L. risk for posttraumatic stress disorder associated with different forms of interpersonal violence in South Africa

[8] Gupta J, Falb K.L, Carliner H et.al. Associations between exposure to intimate partner violence, armed conflict, and probable PTSD among women in Rural Coˆte d'Ivoire.Plos one. 2014 may ,volume 9,Issue 5

[9] Ghaffarzadegan N, Ebrahimvandi A,. Jalali M.S. A Dynamic Model of Post-Traumatic Stress Disorder for Military Personnel and Veterans. Plos one 2016. journal.pone. 0161405 October 7.

[10] Seedat S. War and Post traumatic stress disorder. SAJP. 2006Volume 12 No. 1 March.

[11] Steyn R, Vawda N, Wyatt G.E et al. Posttraumatic stress disorder diagnostic criteria and suicidal ideation in a South African Police sample. Afr J Psychiatry (Johannesburg) .2013. January: 16(1): 19–22.

[12] Boshoff P, Strydom H, Botha K.An assessment of the need of police officials for trauma intervention programmes. Social Work/Maatskaplike Werk Vol 50 No 2; Issue 7.

[13] Kaminer D, Grimsrud A , Myer L, et al. Risk for posttraumatic stress disorder associated with different forms of interpersonal violence in South Africa. Soc Sci Med. 2008 November ; 67(10): 1589–1595.

[1] Mashike L, Mokalobe M, Lamb G et.al . The reintegration into civilian life of demobilised Umkhonto we Sizwe and Azanian People's Liberation Army ex-combatants. Technical Report. 2003. March .DOI: 10.13140/RG.2.2.24525.95202.

[2] Okulate G.T, Jones O.B.E. Post-traumatic stress disorder, survivor guilt and substance use – a study of hospitalised Nigerian army veterans. SAJP. 2006. Volume 12 No. 1 March .

[3] Conell M.A , Omole O, Subramaney U et.al Post traumatic stress disorder and resilience in veterans who served in the South African border war. Afr J Psychiatry Johannesburg. 2013 Nov 19; 16(6).2013.

[4] LaMarca S.D, Niles B.L, King D.W et.al. Temporal Associations Among Chronic PTSD Symptoms in U.S. Combat Veterans. Journal of Traumatic Stress.2015. October, 28: 410–417

[5] Snir A, Levi-Belz Y, Solomon Z. Is the war really over? A 20-year longitudinal study on trajectories of suicidal ideation and posttraumatic stress symptoms following combat. Psychiatry Research. 2017. 247: 33–38.

[6] DeBeer B.B, Kimbrel N.A , Meyer E.C , Gulliver S.B, Morissette S.B . Combined PTSD and depressive symptoms interact with post-deployment social support to predict suicidal ideation in Operation Enduring Freedom and Operation Iraqi Freedom veterans. Psychiatry Research 2014. 216:357–362.

[7] Atwoli L, Stein D.J, Williams D.R , et al. Trauma and posttraumatic stress disorder in South Africa: analysis from the South African Stress and Health Study. BMC Psychiatry.(2013) 13:182.

[8] Topper K, Van Rooyen K, Grobler C, et.al. Posttraumatic Stress Disorder and Barriers to Care in Eastern Cape Province, South Africa. Journal of Traumatic Stress .2015 August , 28,

375–379

[22]Nell M, Shapiro J .No place by the fire: The story of South African ex combats and the national peace accord trust. (2012).

Appendix A: Foa, E. B., Riggs, D. S., Dancu, C. V., & Rothbaum, B. O. Reliability and validity of a brief instrument for assessing post- traumatic stress disorder. Journal of Traumatic Stress.1993. 6, 459–474.

[23] https://www.defenceweb.co.za/

[24] Galea S,Basham K,DavidsonJ et al.(2012).Treatment of PostTraumatic stress disorder in military and veteran population:initial assessment. Committee on the Assessment of Ongoing Effects in the Treatment of Posttraumatic Stress Disorder; Institute of Medicine

Appendix A: Demographic questionnaire

Please circle the correct option

1.Please indicate your gender

o Male

- Female

2.Age o

- 50- 60
- 60-70
- 70-80
- More than 80

3.Marital status

- Single
- Married
- Divorced
- Widow/ed

4.Level of education

- High school
- Tertiary level

5.Employment status

- Employed o Unemployed
- Government grant

Appendix B: PTSD scale self-report for DSM-5

PTSD Scale-Self Report for DSM-5

(PSS-SR5)

Subject ID_____ **Date**_____

TRAUMA SCREEN

Have you ever experienced, witnessed, or been repeatedly confronted with any of the following:
(Check all that apply)

- ☐ Serious, life threatening illness (heart attack, etc.)
- ☐ Physical Assault (attacked with a weapon, severe injuries from a fight, held at gunpoint, etc.)
- ☐ Sexual assault (rape, attempted rape, forced sexual act with a weapon, etc.)
- ☐ Military combat or lived in a war zone
- ☐ Child abuse (severe beatings, sexual acts with someone 5 years older than you, etc.)
- ☐ Accident (serious injury or death from a car, at work, a house fire, etc.)
- ☐ Natural disaster (severe hurricane, flood, earthquake, etc.)
- ☐ Other trauma (Please describe briefly):

_____

_____

_____

- ☐ None

*** If NONE, please STOP and return this questionnaire ***

If you marked any of the above items, which single traumatic experience is on your mind and currently bothers you the most:
(Check only one)

- ☐ Serious, life threatening illness (heart attack, etc.)
- ☐ Physical Assault (attacked with a weapon, severe injuries from a fight, held at gunpoint, etc.)
- ☐ Sexual assault (rape, attempted rape, forced sexual act with a weapon, etc.)
- ☐ Military combat or lived in a war zone
- ☐ Child abuse (severe beatings, sexual acts with someone 5 years older than you, etc.)
- ☐ Accident (serious injury or death from a car, at work, a house fire, etc.)
- ☐ Natural disaster (severe hurricane, flood, earthquake, etc.)
- ☐ Other trauma (Please describe briefly):

_____

_____

_____

PTSD Scale-Self Report for DSM-5

(PSS-SR5)

Instructions: Below is a list of problems that people sometimes have after experiencing a traumatic event. Write down the most distressing traumatic event that you checked on the last page:

Please read each statement carefully and circle the number that best describes how often that problem has been happening and how much it upset you over THE LAST MONTH. Rate each problem with respect to the traumatic event that you wrote above.

For example, if you've talked to a friend about the trauma one time in the past month, you would respond like this: (because one time in the past month is less than once a week)

Talking to other people about the trauma

0	(1)	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

1. Unwanted upsetting memories about the trauma

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

2. Bad dreams or nightmares related to the trauma

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

3. Reliving the traumatic event or feeling as if it were actually happening again

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

4. Feeling very EMOTIONALLY upset when reminded of the trauma

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

5. Having PHYSICAL reactions when reminded of the trauma (for example, sweating, heart racing)

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

6. Trying to avoid thoughts or feelings related to the trauma

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

PTSD Scale-Self Report for DSM-5

(PSS-SR5)

7. **Trying to avoid activities, situations, or places that remind you of the trauma or that feel more dangerous since the trauma**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

8. **Not being able to remember important parts of the trauma**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

9. **Seeing yourself, others, or the world in a more negative way (for example "I can't trust people," "I'm a weak person")**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

10. **Blaming yourself or others (besides the person who hurt you) for what happened**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

11. **Having intense negative feelings like fear, horror, anger, guilt or shame**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

12. **Losing interest or not participating in activities you used to do**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

13. **Feeling distant or cut off from others**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

14. **Having difficulty experiencing positive feelings**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

15. **Acting more irritable or aggressive with others**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

PTSD Scale-Self Report for DSM-5

(PSS-SR5)

16. **Taking more risks or doing things that might cause you or others harm (for example, driving recklessly, taking drugs, having unprotected sex)**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

17. **Being overly alert or on-guard (for example, checking to see who is around you, being uncomfortable with your back to a door)**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

18. **Being jumpy or more easily startled (for example when someone walks up behind you)**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

19. **Having trouble concentrating**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

20. **Having trouble falling or staying asleep**

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

DISTRESS AND INTERFERENCE

21. How much have these difficulties been bothering you?

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

22. How much have these difficulties been interfering with your everyday life (for example relationships, work, or other important activities)?

0	1	2	3	4
Not at all	Once a week or less/a little	2 to 3 times a week/somewhat	4 to 5 times a week/very much	6 or more times a week/severe

SYMPTOM ONSET AND DURATION

23. How long after the trauma did these difficulties begin? [circle one]
    a. Less than 6 months
    b. More than 6 months

24. How long have you had these trauma-related difficulties? [circle one]
    a. Less than 1 month
    b. More than 1 month

Appendix C: Information sheet

Study title : POST TRAUMATIC STRESS DISORDER IN ANTI-APARTHEID VETERANS IN SOUTH AFRICA

Name of researcher:Dr Boitumelo Mokgatle

Registrar - Department of Psychiatry ,University of the Witwatersrand

Contact details: 0119518000

Name of supervisor:Dr Laila Paruk

Specialist Psychiatrist,University of the Witwatersrand

Contact details:0119339000

Introduction

I am a Doctor in the Department of Psychiatry at the University of the Witwatersrand. As part of the requirements of my training, I plan to conduct research regarding veterans who participated in the fight against apartheid. Research helps clinicians to better understand illness/diseases,origins and their patterns. This research will be anonymous, and used for academic and clinical purposes **only.** Your information will not be unlawfully distributed.

We are inviting you to partake in this study. Participation in the research is voluntary and if you have any questions please ask the researcher at any point. The costs of your transport to attend the facility where the research will be done, will be given back to you.

What the study involves:

1. It requires about 20 minutes of your time.
2. A questionnaire will be provided in which you have to indicate which answer applies to you and to what degree.
3. Personal details will not be used, to keep your identity private. We will use research numbers instead.

4. All the stationery needed will be provided

Risks involved

The nature of the questionnaire involves questions related to trauma. Should at any point you feel uncomfortable or in any distress,you can ask the researcher for assistance. The questionnaire can be stopped at any time if you have any concerns or feel any discomfort.

The department of psychology at Chris Hani Baragwanath Hospital has agreed to offer counselling and therapy for those who may become distressed by the questions. Please ask to be referred if you think you need the support. The contact details of the head of the unit are as follows: Ms J Kooverjee, Principal Psychologist - 011933 9239/8834. She is aware of the study being undertaken.

Should you have any complaints/concerns regarding this research you can contact the chair of the ethics committee Professor C Penny on 011 717 2301, or by e-mail at Clement.Penny@wits.ac.za.

Appendix D: Consent form

Study title : POST TRAUMATIC STRESS DISORDER IN ANTI APARTHEID VETERANS IN SOUTH AFRICA

Participant Consent form

I have been given a Participant Information Sheet which explains the nature and processes involved in this study, which is attached hereto;

1. I was given time to read it, or had it read to me, in the language I best understand;
2. I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory;
3. I believe I fully understand why the study is being conducted and what the intended outcomes will be;
4. I understand that there will be no immediate benefit to me, should I agree to participate, nor will I receive any payment; conversely, participation will not cost me anything but my time;
5. I understand that, even if I initially consent to take part in the study, I may subsequently withdraw at any time and would not be required to give any reasons; if that happened, any data collected about me for the purposes of the study would immediately be destroyed, unless I give consent for it to be retained
6. I have been given a range of contact details, listed below. If I require further information or become concerned about any aspect of this study I am free to speak to any of these contacts.

Principal investigator: Dr B Mokgatle 0119518000 or by email b.mokgatle@gmail.com

Supervisor: Dr L Paruk 0119338000 or by email Laila.paruk@gmail.com

Principal psychologist: Ms J Kooverjee 011933 9239/8834

Chair of the ethics committee: Professor C Penny 011 717 2301, or by e-mail at

Clement.Penny@wits.ac.zaPrint

Name of Participant:

Signature of Participant: Witness:

Date:

Appendix E: Distress protocol

Study title : POSTTRAUMATIC STRESS DISORDER IN ANTI-APARTHEID VETERANS IN SOUTH AFRICA

Name of researcher:Dr Boitumelo Mokgatle

Registrar - Department of Psychiatry ,University of the Witwatersrand

Contact details: 0119518000

Name of supervisor:Dr Laila Paruk

Specialist Psychiatrist,University of the Witwatersrand

Contact details:0119339000

Distress protocol

Purpose of the protocol

Due to the nature of the topic there is potential for distress during the implementation process. There is therefore a need to consider the potential psychological impact of the questionnaire on participants. Prior to the questionnaire being handed out the participants will be handed an information sheet detailing who can be contacted for supportive counselling.
Should there be a need to see a psychologist the department of psychology at Chris Hani Baragwanath hospital has agreed to assist in offering counselling services.

Strategies to assist those distressed during the interview

Should a participant become distressed during the interview or exhibit behaviour suggestive that participating in the study is too stressful, the following procedure will be followed:

1. Express concern and ask the participant if they would like to pause or suggest termination
2. Check the mental status as well if the participant is able or unable to carry on.

3. With the participant's consent offer for a member of the clinical team i.e psychologist to see them.

4. Accompany the patient to the psychology department.

Should the patient experience delayed distress, once the interview is complete, and they have left the hospital, the following contact details will be provided to the participants in order to access the service :

Department of Psychology at Chris Hani Baragwanath Hospital.

Mrs J Kooverjee

Principal psychologist

Contact details: 011 933 9239/8834.

Appendix F :Psychology agreement

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL

DEPARTMENT OF PSYCHIATRY/PSYCHOLOGY

26th February 2020

To whom it may concern,

Re: Dr B Mokgatle's study titled: The frequency of PTSD in military veterans who fought against apartheid'.

This letter serves to confirm that, should a participant experience acute distress whilst completing the study, they will be referred by the researcher to the CHBAH Psychology team for appropriate intervention and management thereafter.

Please do not hesitate to contact us should you have any queries.

Yours sincerely,

J Kooverjee

Principal Psychologist

CHBAH

011- 933 9239/8834

#6804

Appendix B: Ethical Clearance

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R49 Dr B Mokgatle

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M200707

NAME: (Principal Investigator)	Dr B Mokgatle
DEPARTMENT:	School of Clinical Medicine Department of Psychaiatry Medical School University
PROJECT TITLE:	*Post-traumatic Stress Disorder in anti-apartheid veterans in South Africa*
DATE CONSIDERED:	2020/07/31
DECISION:	Approved unconditionally
CONDITIONS:	Change of study title noted on 2022/04/22
NOTE:	If contact information regarding student study participants is required, please contact the Registrar's office - <Nicoleen.Potgieter@wits.ac.za>
SUPERVISOR:	Dr L Paruk
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	2021/03/15

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **July** and therefore reports and re-certification will be due in the month of **July** each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).

Signature of Principal Investigator Date

Appendix C:Protocol Approval

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

WITS SCHOOL OF CLINICAL MEDICINE

29 June 2021

To the Chairperson

WITS Human Research Ethics Committee (Medical)

RE: APPROVAL OF REVISED PROTOCOL

"Post Traumatic Stress Disorder in Anti-Apartheid Veterans In South Africa"

Dr Boitumelo Mokgatle

Student number: A0021199

This serves to confirm that the MMed research protocol of the abovementioned candidate has been revised according to the recommendations of the Assessor Group and approved by the Assessor Group Chair.

Yours sincerely

Dr Wendy Friedlander

WITS Department of Psychiatry

Contact number: 0823303869

Email: wendy.friedlander@wits.ac.za

Faculty of Health Sciences • School of Clinical Medicine • Department of Psychiatry • Address: 7 York Road, Parktown, 2193 • CMJA Hospital, Green Block, 8th Floor, Area 859, Room 12 • Tele: 27 11 717 2149 • Fax: 27 11 717 2423 • Website: www.wits.ac.za

Appendix D: Turnitin Report

journal article november.docx

ORIGINALITY REPORT

20%	16%	15%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	issuelab.org Internet Source	2%
2	Bhadrashil H Modi, Deidré Pretorius, Joel M Francis. "Willingness to take the Covid-19 vaccines and associated factors at a tertiary institution community in Johannesburg, South Africa", Cold Spring Harbor Laboratory, 2021 Publication	2%
3	Comprehensive Guide to Post-Traumatic Stress Disorders, 2016. Publication	2%
4	www.sajp.org.za Internet Source	1%
5	hdl.handle.net Internet Source	1%
6	ecommons.aku.edu Internet Source	1%
7	mafiadoc.com Internet Source	1%

8	Lukoye Atwoli, Jonathan Platt, David R. Williams, Dan J. Stein, Karestan C. Koenen. "Association between witnessing traumatic events and psychopathology in the South African Stress and Health Study", Social Psychiatry and Psychiatric Epidemiology, 2015 Publication	1 %
9	Mohammed Alghamdi, Nigel Hunt. "Psychometric properties of the Arabic Posttraumatic Diagnostic Scale for DSM–5 (A-PDS-5).", Traumatology, 2020 Publication	1 %
10	www.science.gov Internet Source	1 %
11	hts.org.za Internet Source	1 %
12	phcfm.org Internet Source	1 %
13	irep.ntu.ac.uk Internet Source	1 %
14	www.higginsctc.org Internet Source	1 %
15	Joseph I. Constans, Timothy A. Kimbrell, John. T. Nanney, Brian P. Marx, Susan Jegley, Jeffrey M. Pyne. "Over-reporting bias and the modified Stroop effect in Operation Enduring	<1 %

	and Iraqi Freedom veterans with and without PTSD.", Journal of Abnormal Psychology, 2014 Publication	
16	deploymentpsych.org Internet Source	<1 %
17	www.cadth.ca Internet Source	<1 %
18	interfaith.issuelab.org Internet Source	<1 %
19	www.sun.ac.za Internet Source	<1 %
20	Joseph R. Bardeen, Thomas A. Fergus, Kevin D. Wu. "The Interactive Effect of Worry and Intolerance of Uncertainty on Posttraumatic Stress Symptoms", Cognitive Therapy and Research, 2012 Publication	<1 %
21	harmreductionjournal.biomedcentral.com Internet Source	<1 %
22	journals.sagepub.com Internet Source	<1 %
23	ore.exeter.ac.uk Internet Source	<1 %
24	Connell, MA, O Omole, U Subramaney, and S Olorunju. "Post traumatic stress disorder and resilience in veterans who served in the South	<1 %

	African border war", African Journal of Psychiatry, 2013. Publication	
25	profiles.mu.ac.ke Internet Source	<1 %
26	www.safetylit.org Internet Source	<1 %
27	beta.digitalcollections.lib.uct.ac.za Internet Source	<1 %
28	pubmed.ncbi.nlm.nih.gov Internet Source	<1 %
29	vdocuments.site Internet Source	<1 %
30	worldwidescience.org Internet Source	<1 %
31	www.ncbi.nlm.nih.gov Internet Source	<1 %
32	Anna Maedl. "Psychological Rehabilitation of Ex-combatants in Non-Western, Post-conflict Settings", Trauma Rehabilitation After War and Conflict, 2010 Publication	<1 %
33	Lilach Rachamim, Isabela Mirochnic, Maya Elazar, Elna Yadin, Inbal Sinay, Nitsa Nacasch. "A Pilot and Feasibility Randomized Controlled Trial of Dyadic Exposure Therapy and Dyadic	<1 %

	Client-Centered Therapy for Posttraumatic Preschool Children and Their Caregivers", International Journal of Cognitive Therapy, 2020 Publication	
34	Thula Simpson. "Toyi-Toyi-ing to Freedom: The Endgame in the ANC's Armed Struggle, 1989–1990", Journal of Southern African Studies, 2009 Publication	<1 %
35	link.springer.com Internet Source	<1 %
36	store.samhsa.gov Internet Source	<1 %
37	ugspace.ug.edu.gh Internet Source	<1 %
38	"Military and Veteran Mental Health", Springer Science and Business Media LLC, 2018 Publication	<1 %
39	"Diagnostic Interviewing", Springer Science and Business Media LLC, 2019 Publication	<1 %
40	"Military Social Work Around the Globe", Springer Science and Business Media LLC, 2023 Publication	<1 %

41	Sanderson, Lisa. "Posttraumatic Growth in Firefighters.", Nottingham Trent University (United Kingdom), 2020 Publication	<1 %
42	Soraya Seedat. "War and post-traumatic stress disorder", South African Journal of Psychiatry, 2006 Publication	<1 %
43	T Lan Chun Yang, A Colantonio, Tatyana Mollayeva. "Misperception of sleep duration in mild traumatic brain injury/concussion: a preliminary report", Brain Injury, 2021 Publication	<1 %
44	T. R. H. Davenport. "The Birth of a New South Africa", University of Toronto Press Inc. (UTPress), 1998 Publication	<1 %
45	Yearwood, Kylie. "Emotional Intelligence and Compassion Fatigue in Emergency Nurses", Walden University, 2021 Publication	<1 %

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		