

**CORRELATION BETWEEN COPING STRATEGIES AND THE
LEVELS OF POSTTRAUMATIC STRESS DISORDER AND
DEPRESSIVE SYMPTOMS AMONG SEXUALLY ASSAULTED
SURVIVORS IN NORTH WEST PROVINCE, SOUTH AFRICA**

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DECLARATION

I hereby declare that this research paper titled *“Investigation of Correlation between Coping Strategies and the Levels of PTSD and Depression among Sexual Assaulted Survivors in Ngaka Modiri Molema North West Province”* for the degree of the Masters in Nursing Science at North West University is the original work carried out by me. The sources I have used have been properly cited and acknowledged in the form references

Signature:  _____ Date: 14/04/2014 _____

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ABSTRACT

Sexual assault is a wide public health problem given the number of people who are sexually assaulted. Sexual assault affects the psychological well being of people who experience it. The most common reported psychological problems are PTSD and depressive symptoms especially after four to six weeks post sexual assault. These Co morbid disorders affect the normal functioning of an individual such home chores, work and increase mortality rate among sexual assaulted survivors. It was also documented that coping strategies (maladaptive or adaptive) employed by sexual assaulted survivors are the one that determine their recovery. Hence, there was a need to investigate the correlation between coping strategies, the level of PTSD and the level of depression in Ngaka Modiri Molema in the North West Province of South Africa.

The study aimed to investigate correlation between coping strategies and the levels of PTSD and depression among sexual assaulted survivors. Correlational cross-sectional design was used in this study. Sample size of 115 of sexually assaulted participants between the age of 18 and 50 was determined through the use of Raosoft calculator. PCL for PTSD, BDI and brief COPE instruments were used to collect data. Information about socio demographic was also obtained. Data analysis was done through frequency distribution to describe the demographic data, levels of PTSD and depression. Data were also analysed through Pearson correlations to determine the possible relationship between coping, PTSD and depressive symptoms. ANOVA, chi-square, cross tabulation were also done to determine the possible relationship between demographic data, level of PTSD and depression.

Results showed high level of PTSD and low level of depression among sexual assaulted survivors. They have also showed that there is no relationship between coping strategies and PTSD, and that there was a relationship between coping and depressive symptoms. These findings indicate that coping strategies cannot be regarded as one the factors that can control the non-development and development of PTSD, but could be

regarded as one the factors that can account to development and non development of depression.

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ACRONYMS/ABBREVIATIONS

AIDS	: Acquired Immune Deficiency Syndrome
BDI	: Beck Depression Inventory
CITI	: Collaborative institutional Training Initiative
DSM-IV-TR	: Diagnostic and Statistical Manual of mental disorders
HIPAA	: Health Insurance Portability and Accountability Act of 1996
HIV	: Human Immunodeficiency Virus
IRB	: Institutional Review Board
MDD	: Major Depressive Disorder
NWP	: North West Province
PTSD	: Post Traumatic Stress Disorder
PCL-S	: Post Traumatic Checklist Specific version
SA	: South Africa
SAPS	: South African Police Service
STI	: Sexual Transmitted Infections
TCC	: Thuthuzela Care Centres
SPSS	: Statistical Packages for Social Sciences
UNODC	: United Nations on Drugs and Crime
UCLA	: University of California Los Angeles
USA	: United States of America
WHO	: World Health Organisations

CHAPTER ONE

OVERVIEW OF THE STUDY

1.1. Introduction

This chapter provides an overview of the study and the following issues will be discussed; background of the study, problem statement, purpose, objectives, hypothesis, significance of the study, operationalisation of concepts and, finally, arrangements of chapters.

1.2. Background of the Study

The World Health Organization (WHO) defines “sexual health as the integration of the physical, emotional, intellectual and social aspects of sexual well-being in ways that are enriching and enhancing personality, communication and love” (Muganyizi, Kilewo, & Moshiro, 2004:138). Rape is one of the key barriers to sexual health that many women face throughout the world (Muganyizi *et al.*, 2004:138).

Peters and Olowa (2010:671) indicate that the incidence of rape differs in different parts of the world. The report from the seventh United Nations' Survey of Crime Trends and Operations of Criminal Justice Systems, covering the period from 1998–2000, showed that South Africa (SA) is the leading country on the rape incidence (UNODC, 2010:24). This is followed by Seychelles, Australia, Monstert, and Canada (UNODC, 2010:24). Zimbabwe was ranked the fifth highest in the country in Africa; whereas the United Kingdom, Spain and France were ranked the lowest on the incidence of rape worldwide (UNODC, 2010:25). See figure 1 that reflects the global statistics of the prevalence of rape

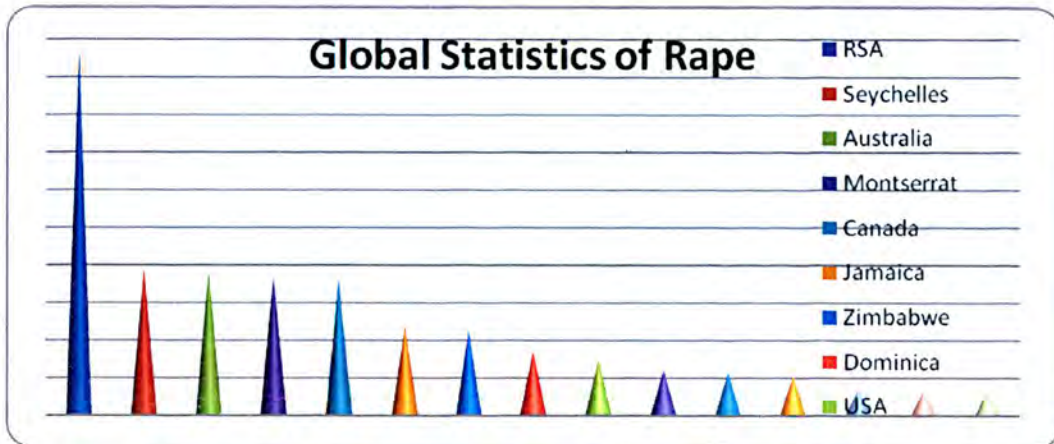


Figure 1: Global Statistics of the Prevalence of Rape (UNODC, 2010:25)

Within the period of March 2010/2011, about 68,332 cases of rape and sexual assault were reported to and recorded by the police in SA (SAPS, 2011:28). Some of the province such as Western Cape was found to have the highest incidence of 178 cases 1000 per ratio (SAPS, 2011:28). The Free State followed with 171 cases, Northern Cape with 169 cases and North West with 147 cases per 1000 ratio (SAPS, 2011:28). The other five provinces, which are, namely: Gauteng had 125 cases; Kwa Zulu Natal had 120 cases, Mpumalanga had 122 cases and Limpopo had 89 cases per 1000 ratio, all of which had a decrease in sexual assault (SAPS, 2011:28).

Jewkes and Abrams (2002:1233) and Padamanabhanunni (2010:9) highlighted that SAPS is severely affected by high rates of underreporting caused by lack of access to Police Stations, self-blame, the nature of relationship that a survivor has with the perpetrator and fear of disclosure. This suggests that, despite the fact that the rape incidence is high in SA, there are other rape cases that are not being reported and recorded. However, the overall statistics of rape indicated above shows that rape trauma affects every race, colour and creed. Thus, the consequences thereof need to be investigated to find out how women cope with the ordeal.

Rape is likely to cause PTSD and depression more than any other mental problems immediately following the incident of assault and might also last for many years

(Littleton, Buck, Rosman & Grills-Taquene, 2011:315; Chan, Fan & Unutzer, 2010:758; Cochran, Pruitt, Fuduka & Fenny, 2008:277; Nixon, Nishith & Resnick, 2004:32; O'Donnell, Creamer & Pattison, 2004:1390; Frazier, 2000:204; Yehuda, Halligan & Bierer, 2001:261; Neville & Heppner, 2000:42). This co-Morbid disorders impair psychological functioning (Cassano & Fava, 2002:849) and are also associated with long-term morbidity, mortality, economic burden and impairment in occupation, social functioning and health risk behaviours such as substance abuse to cope (Zinzow, Resnick, Mcclauley, Amstadter, ruggiero & Klipatrick, 2011:589; Najdowski & Ullman, 2011:218; Grice, 2006:4). But despite the fact that women tend to suffer PTSD and depression, research explained that coping strategies such as maladaptive and adaptive used by sexually assaulted survivors are the ones that determine their recovery (Littleton & Breitkopt, 2006:108).

This shows some association among coping strategies, PTSD and depressive symptoms. The study therefore aims to investigate the correlation between coping strategies and the level of PTSD and depression among raped survivors in the North West Province (NWP) SA.

1.3. Problem Statement

Several studies (Najdowski & Ullman, 2011:218; Ullman, Townsend, Phillipas & Starzynski, 2007b:23; Ullman & Najdowski, 2009:44) showed a possible relationship among coping, PTSD and depression. Zinzow *et al.*, (2011:588) and Ullman and Najdowski (2009:45) indicated that the development of PTSD and depression is usually influenced by maladaptive coping. Despite this information, less is known regarding the correlation between coping strategies and the level of PTSD and depressive symptoms among sexually assaulted survivors in South Africa, particularly in the NWP. Hence the researcher was interested in finding out whether there is correlation between coping strategies, the levels of PTSD and depressive symptoms among sexual assault survivors in the Ngaka Modiri Molema District, NWP, SA.

1.4. Aim of the Study

The main aim of the study was to investigate the correlation between coping strategies and the levels of PTSD and depressive symptoms among sexual assaulted survivors.

1.5. Objectives of the Study

The objectives of the study are described as follows:

- To describe the level of PTSD symptoms among sexual assault survivors;
- To describe the level of depressive symptoms among sexual assault survivors;
- To determine the relationship between coping strategies and the level of PTSD; and
- To determine the relationship between coping strategies and depressive symptoms.

1.6. Hypothesis

H0-There is no significant relationship between coping strategies and the level of PTSD

H1-There is a significant relationship between coping strategies and the level of PTSD

H0-There is no significant relationship between coping strategies and the level of depression

H1-There is a significant relationship between coping strategies and the level of depression

1.7. Significance of the Study

The results of this study are hoped to inform the policy developers on establishing a comprehensive care of individuals after sexual assault. The curriculum developers may utilise the results to inform training of health care professionals regarding the possible

inclusion of the sexual assault consequences on the health with emphasis on PTSD, depressive symptoms and coping strategies. Sexual assault survivors might benefit from improved services based on health professionals who have been trained on sexual assault and its impacts and improved policies

1.8. Operationalization of Concepts

1.8.1. Rape: Criminal law (sexual offences and related matters) define rape as any person who unlawfully and intentionally commits an act of sexual penetration with a complaint, without the concern of a complaint is guilty of rape (RSA, 2007:56). It is also states that sexual penetration is any extend whatsoever (a) by the genital organs of one person or any object including (b) any part of the body of an animal into or beyond the 'genital organs or anus of another person (c) the genital organs of an animal into beyond the mouth of another (RSA, 2007:56). In this study, rape bears the same meaning as defined in the criminal in the criminal law (sexual and related matters) act no.23 of 2007 of the RSA.

1.8.2. Sexual assault is when a person unlawfully and intentionally sexually violates another person or inspire the belief in that person that they will be sexually violated (RSA, 2007).

NB: In this study, rape and sexual assault are used interchangeably throughout the study as both bears the same meaning of rape as defined in the criminal law (sexual offences and related matters) Act no 23 of 2007.

1.8.3. Depression: It is defined as an illness that involves the body, mood, and thoughts, that affects the way a person eats and sleeps, the way one feels about oneself, and the way one thinks about things (Atousa, 2009:2638). In this study, depression is used to define a mood disorder that affects a person's thinking and behaviour in a negative manner and will only apply to sexually assaulted women

1.8.4. PTSD: This is defined as an anxiety disorder characterised by persistent reliving of the traumatic event such as recurring or intrusive thoughts, avoidance of cues associated with the traumatic or emotional numbing, and unrelenting physiological hyperactivity or arousal (Liu, Tau, Zhou, Li, Yang, Sun, & Wen, 2007:196). In this study PTSD bears the same meaning and applies to only sexually assaulted women

1.8.5. Coping: It is defined as cognitive and behavioural responses used to manage internal or external demand perceived as taxing or exceeding the person's resources (Taft, Resnick, Panuzio, Vogt & Melanie, 2007:409). In this study coping refers to cognitive and behavioural response a women employ after being sexually assaulted. In addition, in this study the researcher focuses on coping strategies such as adaptive and maladaptive among sexual assaulted women.

1.8.6. Sexual assaulted survivor: In this study sexual assault survivor, refers to the women between the age of 18 to 55 who have been sexually assaulted after four to six weeks and consulted in the local TCC.

1.9. Arrangement of Chapters

The dissertation is arranged in the following manner:

Chapter 1: An overview of the study

Chapter 2: Literature review and the conceptual framework

Chapter 3: Research design and methods

Chapter 4: Results

Chapter 5: Discussions, limitations, recommendations and conclusions

1.10. Summary

The chapter outlined the introduction, background, problem statement, objectives, and the hypotheses, significance of the stud, definition of operationalization of the concepts and outlined arrangements of the chapter

CHAPTER TWO

LITERATURE REVIEW AND THE CONCEPTUAL FRAMEWORK

2.1. Introduction

The purpose of this section was to conduct literature review with the aim of establishing global views regarding PTSD and depressive symptoms as well as coping strategies among sexual assault survivors. This was done to assist in achieving the purpose of the study, which is, namely, to investigate the correlation between coping strategies and the levels of PTSD and depressive symptoms among sexual assault survivors. The topics that are covered in this section were as follows: An overview of sexual assault, PTSD among sexual assaulted survivors, depression among sexual assaulted survivors, coping strategies employed by sexual assault survivors, relationship between coping and the level of PTSD, relationship between coping and the level of depression including the conceptual framework that was adopted to guide the study.

2.2. Overview of Sexual Assault

Although Jewkes and Abrams (2002:1233) and Padmanabhanunni (2010:10) argued that rape statistics used worldwide based on cases reported at the Police Stations does not reflect the overall percentage of rape cases due to non-reporting, sexual assault is still regarded as a public health problem. Zinzow, Resnick, McClauley, Amstadter, Ruggiero and Kilpatrick (2010:709) explained that a rape event can affect an individual's physical well-being as well as cause mental health problems such as depression, PTSD, social adjustment problems and chronic health problems. Other researchers indicated rape trauma syndrome as one of the sequelae of rape (Abolio, 2009:35; Raynal and Kossove, 1981:144).

2.2.1. Rape Trauma Syndrome

Rape trauma syndrome is divided into two phases or stages of reaction that an individual may undergo (Abolio, 2009:35; Raynal & Kossove, 1981:144). Unto the two phases, Burgess and Holmosrom, (1978:168) included the third stage. The first phase is regarded as the initial phase of disorganisation; the second phase is the long-term phase of reorganisation, and the third one is the phase of renormalization.

2.2.1.1 First Stage of Disorganisation

The first phase of disorganisation is divided into two clusters, namely, impact of somatic and emotional manifestations. In common somatic manifestations, normally, rape survivors report fear, anger, anxiety, physical shock and skeletal muscle tension (RRL, 1984:1657); gastro intestinal irritation, genital lesions, lacerations, haematoma, ecchymosis, abrasions, reddening and oedema around labia minora (Abolio, 2009:59). Survivors also tend to express their emotional feelings of shock, numbness, embarrassment, guilt, powerlessness, and loss of trust (Abolio, 2009:59). Anger, disbelief, shame, self-blame, denial, poor self-concept, lowered self-esteem, retriggering and disorientation with intrusive thoughts and nightmares (Abolio, 2009:37; Davidow & Edwards, 2007:10).

2.2.1. 2. Second Stage of Reorganisation

Generally, survivors experience manifestations of increased motor reactivity, rape related phobias, night mares and difficulty in maintaining their relationships (Abolio, 2009:37; Davidow & Edwards, 2007:10).

2.2.1. 3. Third Stage of Renormalisation

Survivors begin to recognize the adjustment phase (Raynal & Kossove 1981:144; and Burgess & Holmosrom, 1978:131). "Particularly, survivors recognise the impact of the rape, those who were in denial, realise the secondary damage of any counterproductive coping tactic" (Abolio, 2009:37; Raynal & Kossove, 1981:144).

Survivor integrates the sexual assault into their life so that rape becomes no longer the central focus (Burgess & Holmosrom, 1978:168). Survivors' negative feelings such as guilt, shame become resolved and no longer blame themselves for the attack (Burgess & Holmosrom, 1978:168). The aforementioned clinical manifestations in these three stages of reaction are more related to PTSD and depressive disorders. Over and above the aforementioned health problems, rape is also associated with increased cost because survivors tend to suffer other health problems leading to more usage of health care (Conoscenti & McNally, 2005:372).

All these stages describe how an individual respond to rape and depending on the type of rape they experienced.

2.2.2 Types of Rape

There are different types of rape which can affect an individual such as date/acquaintance rape, gang rape, and sadistic rape, (Peters & Olowa, 2010:670; Campbell, Sefl & Ahrens, 2004:67).

2.2.2.1 Date / Acquaintance Rape

Date/acquaintance rape is a type of rape whereby the perpetrator and the survivor are related to a certain degree (Kniesl & Trigoboff, 2009: 641). It is the most common and most underreported among all the types of rape (Peters & Olowa, 2010:670). Peters and Olowa (2010:670) indicates that it can lead to physical health problems and mental health disorders such as depression and PTSD.

2.2.2.2. Gang Rape

Another type of rape experienced across many countries is gang rape. It is when two or more perpetrators are involved in the commission of rape at one point in time (Jewkes, Sen & Garcia-Moremo, 2002:45). The definite statistics of the extent of gang rape are scanty, but in Johannesburg, RSA, it is reported that about one-third of women who attended the medico-legal clinics were gang-raped (Swart, 2000:6). In the USA it was indicated that about one out of ten rapes were gang rapes and in most cases the

survivor did not know the perpetrators (Jewkes, *et al.*, 2002:45). Jewkes *et al.* (2002: 45) pointed out that in the RSA perpetrators are usually known to the survivor as some are even boyfriends are often the members of the gang in gang rapes. According to Peters and Olowa (2010: 611) gang rape is the most predictor of PTSD, depression and other mental health problems.

2.2.2.3. Sadistic Rape

Sexual sadism is defined as a paraphilia in which there is recurrent and intense fantasies that sexually arousing in nature coupled with sexual urges and behaviors where the physical and psychological suffering of the survivor bring the perpetrator sexual excitement (American Psychiatric Association, 2000: 56). Sadistic rape is often characterized by torture and killing of the survivor as well as humiliation, wipping, bondage, dominance, biting, burning even body mutilation (Dietz, Hazelwood & Warren 1990:164; Hucker, 1997:164; MacCulloch, Snowden, Wood & Mills,1983:24; Warren & Hazelwood, 2002:78). Most sadistic rapists are men and its estimated prevalence is 5% to 11% in the general population, 45% of sexual offenders and up to 99% of serial sexual homicide perpetrators in the USA (Groth & Birnbaum, 1979; Kirsch, Becker, Fanniff, & Martens, 2006) (Fedora *et al.*, 1992) (e.g., Fox & Levin, 2005; Stone, 1998).

Sexual sadists are most frequently found among rapists and murderers, although they comprise only a small percentage of these groups. Sexual sadism is primarily a male phenomenon and little, if any, work has addressed the prevalence or specific symptom manifestations in women. Although sexual sadism is quite rare in the general population, prevalence estimates range from 5%–11% (Groth & Birnbaum, 1979:26) to 45% (Fedora, Morrison, Fedora, Pascoe & Yeudell, 1992:14) of sexual offenders, and 67% to 99% of serial sexual homicide perpetrators (Fox & Levin, 2005:45).

These types of rape and stages of rape trauma syndrome can affect individuals differently and does have an impact on the mental health outcome of a person after sexual assault. although they are not all looked at in the data collection instrument, one date/acquaintance rape in particular is assessed as it was isolated as the most common and the most underreported type of rape and a predisposing factor to depression and PTSD.

2.3. PTSD among Sexually Assaulted Survivors

PTSD has three clusters of symptoms used for diagnosis such as re-experiencing of symptoms (nightmares and flash backs), avoidance and numbing (efforts to avoid thoughts or feelings associated with trauma) and increased arousal symptoms (irritability or outbursts of equal) after six weeks for diagnosis (Voges & Romney, 2003:4; Liu *et al.*,2007:195; Sadock & Sadock, 2007:612). Literature has pointed out that rape has negative and harmful effects on the health of those who experience it for post assault functioning (Vickerman & Margolin, 2009:431). It has also been found that rape is likely to cause PTSD more than any other mental condition (Littleton *et al.*, 2011:316; and Cochran *et al.*, 2008:277). Studies reported that the prevalence of PTSD rape-related is common. Gill, Page, Sharps and Campbell (2008:693) revealed that 15 to 25% of individuals experienced trauma suffers PTSD.

Resnick, Acierno, Waldrop, King, King, Danielson, Ruggiero and Kilpatrick (2007:2432) from epidemiology study of sexual assault also reported that 80% of women experienced complete rape diagnosed of PTSD in their lifetime. Among those 80% of rape survivors, Resnick *et al.* (2007:2432) revealed that 94% reported to institutions like Police Stations, met PTSD criteria at two weeks and 50% of them continued to meet PTSD criteria even after three month. PTSD is a condition that impacts physical and psychological health of those individuals who develop it (Gill *et al.*, 2008:696).

Vickerman & Margolin(2009:43) stated that half of women diagnosed with PTSD could improve without treatment within three months and half of them might continue to meet the criteria for PTSD. Those who continued to meet the criteria of PTSD three months later, it was because of remaining with high level of stress from the onset (Vickerman & Margolin, 2009:431). Hence, they remain with high and constant symptoms of PTSD.

Early intervention for sexual assault survivors diagnosed with PTSD is required to prevent complications. Women who are raped with PTSD report two or more problems of substance abuse such as work, school, accidents and family problems (Vickerman & Margolin, 2009:431). Apart from its complications, PTSD is likely to occur with other common co-morbid psychiatric disorders such as Major Depressive Disorder (MDD), generalized anxiety disorder, drug and alcohol abuse and dependence, and obsessive compulsive disorder (Gill, 2008:697; and Kessler, 2000:06). Although PTSD develops with other psychiatric disorders it is commonly associated with depression.

2.4. Depression among Sexually Assaulted Survivors

Traumatic events and the way in which people subsequently cope thereafter play a crucial role not only in the development of PTSD but potentially also in the development of other forms of mental disorders such as depression (Kaukinem & De Maris, 2009:1334). Depression has different clusters of symptoms namely; psychological (depressed mood, Irritability,) behavioural (decreased appetite, heart palpitations) and physical symptoms (Crying spells, Social withdrawal) (Cassano & Fava, 2002:849). Literature revealed that all individuals diagnosed with depression should have at least an encounter with one significant negative life event in a month prior to the onset of depression (Hankin, 2006:105).

Research has pointed out that 30% of women in a national study were found to be suffering from major depressive disorder (Vickerman & Margolin, 2009:431).

Hankin (2006:108) explained that individuals with major depression report more impairment in physical, social role functioning. They also found it so difficult to adjust in daily activities such as home chores, work, and school, increases high morbidity, high mortality because of tendency of attempting and committing suicide (Cassano & Fava, 2002:849). Depression has a detrimental health effect on an individual lifestyle and it needs early interventions and psychological support to prevent its complications.

2.5. Coping Strategies used by Sexually Assaulted Survivors

Sexually assaulted survivors utilize some form of coping strategies such as maladaptive and adaptive to deal with trauma (Martin, 2010:16; Cohen & Wills, 1985:313, Littleton & Bretkopt, 2006:106). Maladaptive coping strategies have a negative impact in the recovery of sexual assault survivors (Martin, 2010:16). Women engaged in maladaptive coping strategies present with symptoms such as withdrawal and denial and this, are regarded as poor outcome of sexual assault in general (Ullman & Najdowski, 2009:44). In maladaptive coping, survivors usually also avoid to think about rape, resort to alcohol use or drugs, other prefer not to share their feelings with other people or seek help and blame themselves (Martin, 2010:16; Ullman & Najdowski, 2009:49). One of the factors that influences maladaptive coping are acts of sexual assault, sexual assault severity, physical injuries, resorting to substance abuse as means of coping, offender's violence and they could lead to development of PTSD (Ullman *et al.*, 2007b:23; Ullman & Najdowski, 2009:46; and Campbell & Sturza, 2005:353).

On the other hand, survivors who appraised stressor positively end up with adaptive coping which could lead to normal functioning of the daily activities (Cohen & Wills, 1985:313). It was discovered that survivors support networks are the ones who play an important role in promoting adaptive coping (Littleton, 2009:148). This suggests that using adaptive coping would prevent illnesses such as PTSD, depressive disorders or resorting to substance abuse.

Chiu (2002:344) states that there are four phases of coping strategies after the effects of rape. In first and second stages, usually survivors cope with denial, depression, anxiety, anger, guilt, loss of self-esteem and sexual dysfunction (Chiu, 2002:344; and Harvey, Orbuch, Chwalisz & Garwod, 1991:518). In the third stage, which is called stage of resolution, survivors use available resources to cope from disorganisation, this include change in daily activities and residence as well as rebuilding self-esteem and enjoying life again (Chiu, 2002:345).

In the final stage of recovery, called the long term of adjustment, survivors rebuild self-meaning and strengthen the recovery process (Chiu, 2002:346). This afore-mentioned clinical manifestations of stages one and two of coping strategies are more related to maladaptive coping strategies whereby stages three and four were more related to adaptive coping.

2.6. Relationship between Coping Strategies and PTSD among Sexual Assault Survivors

Research has pointed out that other rape survivors have the tendency of experiencing some form of stress (Boesch, Koss, Jose Figueredo & Coan, 2008: 211). This kind of stress leads to either adaptive or maladaptive coping strategies which could cause either PTSD or depression among other sexual assault survivors. Therefore studies were carried out to determine the possible relationship between coping strategies and PTSD. It has been found that there is a relationship between maladaptive coping strategies and the development of PTSD (Najdowski & Ullman, 2011:218; Ullman *et al.*, 2007b:23). This means that if an individual uses maladaptive coping strategies as a way of dealing with stress could end up suffering PTSD. It was also found out that there is a relationship between adaptive coping strategies and PTSD (Najdowski & Ullman, 2011:218). This suggests that adaptive coping strategy is one of the factors that could prevent development of PTSD among sexual assault survivor.

2.7. The Relationship between Coping Strategies and Depressive Symptoms among Sexual Assault Survivors

Women who are raped can experience long term harmful changes in their normal functioning (Littleton & Bretkopt, 2006:109). Factors that put women at risk of developing persistent psychological symptoms such as depression that were caused by frequency of psychological stress after rape were identified by Bretkopt, (2006:108) and Neville and Heppner (2000:41). It has been found that the development of depression among sexual assault survivors is influenced by maladaptive coping (Najdowski & Ullman, 2011:218; Ullman *et al.*, 2007b:23). It was also found that non development of depression among sexual assault is influenced by adaptive coping (Alim, Feder, Grace, Wang, Weaver, West Phal, Algbogun, Smith, Doucette, Mellman, Lawson & Charney, 2008:1571). This suggests a possible relationship to both adaptive or maladaptive coping and depression.

2.8. Conceptual Framework

This study was guided by cognitive model of PTSD developed by Ehlers and Clark (2000). According to Ehlers and Clark model (2000:320), there are different types of appraisals of the traumatic event which could affect cognitive appraisal of an individual and lead to a threat. That is how an individual could see a traumatic event as a threat, if an individual could over generalise a threat and see normal activities as dangerous as they really are. Lastly, the way women felt or behaved during sexual assault events could also produce long lasting complications.

The model also showed strategies such as maladaptive and adaptive coping that could be used to control a threat (Ehlers & Clark model, 2000:323; and Cohen & Wills, 1985:313). In Maladaptive coping strategy chances of increasing PTSD symptoms were very high. If an individual appraises traumatic events negatively and uses maladaptive coping, such would start to present with signs and symptoms of PTSD like intrusive recollections and flashbacks, irritability, mood swings, lack of concentration and

numbing. In addition, one of the clinical symptoms mentioned in this model were strong emotions, insomnia, and this forms part of signs and symptoms of depression.

In adaptive coping, Cohen and Wills (1985:313) explained that the type of treatment, such as social support received by survivors, can counter act negative appraisal and maladaptive coping. Therefore, this could help an individual to appraise stressors positively and uses adaptive coping strategies that would prevent development of PTSD and depression.

This cognitive model was used in a study of treatment of PTSD and depression in a Black South African rape survivor by Davidow and Edwards (2007:12).The actual reason for this was documented that sexual survivors with both depression and PTSD have poor recovery in a treatment than only with those having PTSD alone (Davidow & Edwards, 2007:12).The model was found useful in the study addressing both PTSD and depressive in relation to coping strategies hence was adapted in this study. Refer to adapted model is illustrated in the figure 2.

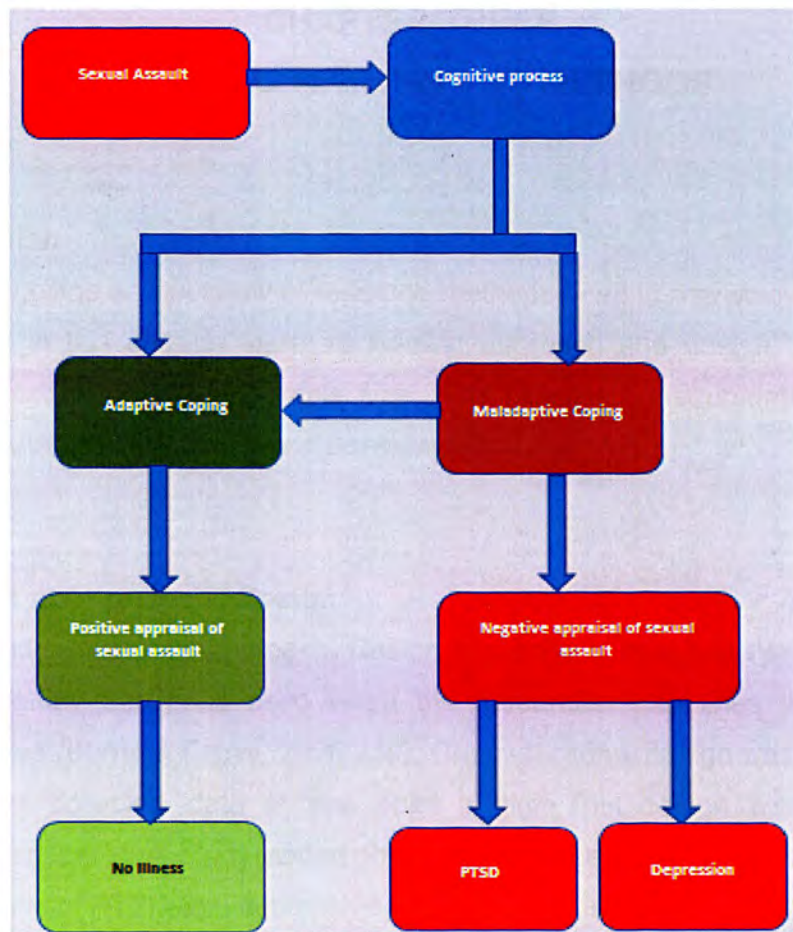


Figure 2: Adapted cognitive model of PTSD (from Ehlers & Clark, 2000)

2.9. Summary

This chapter has outlined two sections, which are, namely, literature review and the adopted conceptual framework for the study. Sections that were covered under literature review are as follows; overview of sexual assault, PTSD among sexual assault survivors, depression among sexual assaulted survivors, coping among sexually assaulted, relationship between coping and PTSD, and the relationship between coping and depressive symptoms

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1. Introduction

This chapter provide an overview of research methods used in this study. Sections that were covered in this chapter were as follows: approach and design, study settings, targeted population, sampling, sample size, data collection, instrumentation, reliability and validity, data analysis and ethical considerations.

3.2. Research Approach and Design

The study used quantitative approach. Design was correlational cross-sectional design. Correlational study design is used when the researcher examines the relationship among variables (Burns & Grove, 2006:239). Cross-sectional design was used because the researcher collected data at one point in time. This design was found to be appropriate because the study aimed to investigate the correlation between coping strategies, levels of PTSD and depressive symptoms among sexual assault survivors.

3.3. Study Setting

Data were collected at Mafikeng Provincial Hospital (Thuthuzela Care Centre, TCC). NWP is divided in to four districts, which are, namely: Ngaka Modiri Molema, Bojanala, Dr Kenneth Kaunda and Dr Ruth Segomotsi Mompati. Mafikeng is the capital city of the North West Province and is situated in the Ngaka Modiri Molema District. Mafikeng is a semi-urban town consisting of two combined provincial public hospitals, namely, Bophelong Psychiatric Hospital and Mafikeng Provincial Hospital. The provincial hospital is situated between Lomanyaneng village and Danville Township.

Mafikeng Provincial Hospital renders the following services: emergency services, medical and surgical, orthopaedic, gynaecology, paediatric, ears, nose and throat, burns, renal, intensive care, maternity, outpatient clinics and TCC for sexual assault survivors among different population, age and gender. The TCC serves as a referral centre from clinics, health centres and district hospitals in the Ngaka Modiri Molema District for further management of sexual assault survivors. The TCC is a Multidisciplinary health care centre developed for anti-sexual interventions to prevent emotional trauma sexual assault survivors in SA (Davids, Ncetakalo, Pezi & Zungu, 2006:109). Multidisciplinary team consists of professional nurses, doctor, psychologist, social worker, coordinator and a counsellor.

3.4. Targeted Population

The study targeted all women who have been sexually assaulted and thereafter consulted at the local TCC. The women who were legible for participation in the study were those who experienced the assault in the past four to six months and their ages ranging from 18 to 55 years.

3.5. Sampling

The study used purposive sampling as it aimed to sample a group of people with specific characteristics or set of experience (Moule & Goodman, 2009:274). The women who met the following selection criteria were recruited as participants:

- Being 18 to 55 years of age;
- Have been sexually assaulted in the past four to six months at the time of data collection;
- Agreed to participate in the study; and
- Consulted at the local TCC after the assault.

The women who met these selection criteria and constituted the population were 168 in number.

3.6. Sample Size

Raosoft sample size calculator was used to estimate the number of participants required to participate in the study. The estimated population of 168 from Mafikeng January to December 2011 was used, with the margin error of 5%, confidence interval of 95 % and response distribution of 50 % whereby a sample size was 118

This Raosoft calculation was based on this formula

$$x = Z(c/100)^2 r(100-r)$$

$$n = N x / ((N-1)E^2 + x)$$

$$E = \text{Sqrt}[(N-n)x / n(N-1)]$$

Where N was the population size, r was the fraction of respondents, Z(c/100) the critical value for the confidence level c, response distribution of 50% which was the conservative assumption in the general population to obtain larger sample size.

3.7. Data Collection Procedure

The study was carried out as part of the bigger longitudinal study entitled "The aftermath of rape on mental health of survivors in North West and Limpopo Provinces". For this study, the researcher only used data of the NWP that were collected at first interval starting from the six weeks and this section provides the detailed manner in which data was collected and precautionary measures taken to ensure that the results valid and reliable.

3.7.1 Instrumentation

The instrument used for data collection was checklist that was already developed. The researcher was guided by a checklist developed by the principal investigators of the longitudinal study mentioned earlier. The checklist had four sections which were demographic data, PTSD Checklist – Specific Version (PCL-S), Beck's Depression

Inventory (BDI) and the brief COPE grid for coping. These sections together addressed the main purpose of the study which was to investigate the relationship between coping strategies, levels of PTSD and depressive symptoms among sexually assaulted women in the Ngaka Modiri Molema District of the NWP.

The demographic section sought for numerous demographic characteristics of participants that were examined against the PCL-S, BDI and the coping grid to determine if the demographic background of an individual may play any part in the association of the variables of interest. The demographic characteristics included the age, ethnicity, residence, socio-economic status, marital status, level of education, and religion, among others. Please refer to Appendix 5 for complete demographic characteristics.

Following the demographic data in the checklist was the coping grid. This grid was used to find out the strategies the participants employed to cope after the ordeal of sexual assault. It is a 28-items self-report scale assessing maladaptive and adaptive coping strategies (Carver, Scheier & Weintraub, 1989:267). Maladaptive coping strategies had ten items, such as using alcohol as a way of forgetting about the incidence, blaming themselves items, and were scored at a 1-4 point scale: 1=I haven't been doing this at all; 2=I have been doing this a little bit; 3=I have been doing this a medium amount; 4=I have been doing this a lot (Ullman & Najdowski, 2009:46). Adaptive coping, consisting of 18 items such as turning back to work, home chores as way of trying to get rid of the incidence, meditating, items were scored at a 1-4 point scale: 1= I haven't been doing this at all; 2= I have been doing this a little bit; 3= I have been doing this a medium amount; 4 = I have been doing this a lot (Ullman & Najdowski, 2009:46).

The PCL-S (Blanchard, Jones, Alexander, Buckley & Forneris, 1996:670) is one of the checklists developed to assess PTSD. It consists of 17 items such as upsetting thoughts, bad dreams, traumatic events, avoiding activities or places that makes one to remember about the event all based on the three DSM-IV-TR symptom clusters of PTSD (Blanchard *et al.*, 1996:670). This items were rated on a 4-point Likert scale

used for each symptom in the last month (1 = not at all, 2=a little bit, 3 = moderately, 4=quite a lot,) (Blanchard *et al.*, 1996:670).

The BDI was last section of the checklist. The BDI grid had 21-items self-report scale measuring supposed manifestations of depression, such as sadness, pessimism, insomnia, irritability (Beck, Steer & Garbin, 1988:79). Each item was scored at a 1-3 point scale indicating the severity of symptoms with 0 indicating an absence of depressive symptoms and 3 indicating severe depressive symptoms (Beck *et al.*, 1988:79).

3.8. Reliability and Validity

Reliability is defined as the dependability of a measurement instrument that is the extent to which the instrument yields the same results on repeated trials (Blanche, Blanche, Durrheim & Painter, 2006:563). Validity is defined as a measure of the truth of accuracy and claims an important concern throughout the research process (Burns & Groove, 2006:754). The study used the PCL-S, BDI and brief COPE scales all of which have been used by various researchers in the past and are, therefore, reliable and valid instruments.

The PCL-S is a reliable instrument to measure PTSD. The PCL-S underwent the Cronbach's test, and was found that Cronbach's alpha was as high as .95, which is widely accepted reliability limit (Jacques-Tiura, Tkatch, Abbey & Wegner, 2010:181). In addition Foa, Cashman, Jacox and Perry (1997:445) and McDonald and Calhoun (2010:984) reported that this PTSD scale of 17 items has been validated among sexual assault and found to be reliable.

The BDI has been extensively used by many researchers in the past and consequently its validity and reliability is well established (Bumberry, Oliver & McClure, 1978:150). Bumberry, Oliver and McClure (1978:150) reported a high reliability and validity of BDI with a coefficient alpha of .85. Brief COPE was used in many studies of people who are

stressed and Cronbach's test was done for reliability. This was found to be reliable with Cronbach's Alpha values exceeding 60 (Ullman, Filipas, Townsend & Stazynski, 2006:807).

3.9. Data Analysis

Statistical Package for Social Science (SPSS) (PASW statistics version 21) computer software was used to capture and analyse raw data. Descriptive statistics particularly frequency distribution was used to describe and summarize demographic data, level of PTSD and level of depressive symptoms. Bivariate Pearson correlation analysis was done to assess possible relationship between coping and PTSD, relationship between coping and depression. The significant level of 0.05 was set on SPSS. Level of PTSD were cross tabulated against the most bothering traumatic event they have witnessed to detect possible variations. A One-Way ANOVA was done against demographic data and both levels of PTSD and depression to compare difference in means of scales and variables. Frequency tables and bar graphs were generated by the statistical packages to present the results.

3.10. Ethical Considerations

This study was carried under the longitudinal "The aftermath of rape on mental health of survivors in North West and Limpopo Provinces" by Professor Mashudu Davhana-Maselesele (RSA) and Professor Gail Wyatt (USA). This study acquired ethical clearances from the Institutional Review Board (IRB) of the University of California, Los Angeles (UCLA), in the USA, and from the Ethics Committee of the North West University (NWU) in the RSA. It also got the permission from Provincial Department of Health from the NWP. These laid down the manner in which the researcher sought for permission to conduct this study.

The researcher presented the proposal of the study to the departmental board, school board and the faculty board of the North West University and was consequently granted

the ethical clearance by the North West University Ethics Committee. The researcher then sought for ethics approval from the NWP Department of Health, followed by the management of Mafikeng Provincial Hospital and, finally, the TCC manager.

To ensure that the researcher has the capacity to conduct research in an ethical manner, the researcher underwent training in form of workshops and symposium in ethical data collection and ethics in research. Furthermore, the researcher underwent the online training called the Collaborative Institutional Training Initiative (CITI) offered by UCLA. The modules completed were Human Research - Social & Behavioural Researchers & Staff; Social and Behavioural Responsible Conduct of Research, and UCLA Health Insurance Portability and Accountability Act of 1996 (HIPAA), refer to Appendix 3.

The researcher then sought for autonomous participation by writing a letter requesting participation and those interested to take part were provided with an informed consent form, see Appendix 4. In this Consent Form, the rights of participants were clearly spelled out. The researcher informed each participant at the beginning of each interview that they had the right to refuse to participate or terminate their participation in the study and would get no kind of punishment or discrimination from the researcher or the TCC health professionals. To protect the wellbeing of the participants, because recounting their experiences could be emotionally draining, the interviews were postponed, paused or terminated where necessary and a participant was sent to the relevant health professional as and when needed.

The participants were provided with R100 meal vouchers because the interviews duration was very lengthy depending on each participant's preferences and emotional state.

The checklist were coded for the purpose and utilisation in the longitudinal study, they were consequently coded. This coding was traceable to the participants but did not contain a name or contact details of the participant. The list of codes and the coded questionnaires were kept in a locked cupboard in the office of the researcher's

supervisor who was one of the principal investigators in the longitudinal study of which this study was part of. The office was access-controlled, with its keys and those of the cupboards held only by the said supervisor. In this way, the privacy, confidentiality and anonymity of the participants were protected.

The interaction with the participants, listening to their stories and seeing them cry, can be emotionally straining and, as a result, the researcher needed debriefing after numerous interviews. This was provided by the supervisor who is also a professional nurse. Consequently, not only the wellbeing of the participants but also of the researcher was safe-guarded.

3.11. Summary

This chapter outlined research approaches followed in this chapter. A study followed a quantitative approach correlational cross-sectional design. Within a Population of 168, a sample size of 115 sexual assault survivors. The checklist used was divided into four sections, namely, demographic data of participants, PCL-S for PTSD, BDI and coping scale. The researcher employed all these in an ethically-sound manner.

CHAPTER FOUR

RESULTS

4.1. Introduction

This chapter presents an overview of the results and these results are structured according to the objectives, hypothesis and the demographic data. The objectives of the study described were as follows: to describe the levels of PTSD and depressive symptoms among sexual assault survivors; and to also determine the relationship between coping strategies and the levels of PTSD and depression. These objectives helped to respond to the main aim of the study, which was, namely, to investigate the correlation between coping strategies and the levels of PTSD and depressive symptoms among sexual assault survivors.

4.2. Demographic Characteristics of Participants

This section describes demographic data of participants in order to contextualize the results that follow under the different objectives.

4.2.1. Frequency Analysis of Demographic Characteristics of Participants

A total of 118 participants in baseline data collection were interviewed using structured interviewed questionnaires. Three of the questionnaires were incorrectly filled and 115 were returned. All the participants who filled the questionnaires were women, who were currently residing NWP at the time of data collection. Almost all of them (91.3%) never lived anywhere else, (80.1%) were Batswana and they were speaking Setswana, 91.3% at home. Almost all of them were never married (93.9%) and about (6.1%) of the participants were either married, widowed and divorced.

The age group of participants ranged from 18 to 50 year old. The majority of participants were at the age of 18 to 25 (64%); followed by those of age 26 to 34 years (24%); and those at the age 35 to 50 years comprised 12%. On their relationship status, 27.8% had

no relationship in the past three months; 31.3% lived with one partner; and 40.9% dated one or more person regularly. About 43.5% of participants had no children and 56.5% had one or more than one children respectively. Please refer Table 4.1 presenting demographic data of age of the participants, ethnicity, home language, marital status, relationship status and number of children

Table 4.1: Age, Ethnicity, Home Language, Marital Status, Relationship Status and Number of Children of Participants

Characteristics	Frequency (n)	Percentage (%)
Sex N=118		
Population Females	115	100
Age of the participants		
18 – 25 years	73	64
26 - 34 years	28	24
35 -50 years	14	12
Ethnicity		
Tswana	93	80.9
Other	22	19.1
Home Language		
Tswana	105	91.3
Other	10	8.7
Marital status		
Never Married	108	93.9
Other	7	6.1
Relationships		
No relationship in the past 3 months	32	27.8
Live with one partner	36	31.3
Date one /more person regularly	47	40.9
Number of children		
No children	50	43.5%
One or more children	65	56.5%

On the education level of the participants, 53.9% had no matriculation and 46.1% had obtained their matriculation or they had other qualifications. Unemployed participants formed 71.3. % and 28.7% was either working or still at school. On monthly income, most of the participants (69.6%) earned between 0-499 and 30.4% earned between 500 and more. About 57.4% had one to four dependants and 42.6% had five or more

dependants. About 94.8% of participants were Christians and 5.2% belonged to other religions. The majority of participants (78.3%) revealed that religion is very important in their lives, and 21.7% stated that religion had little importance in their life. Refer to table 4.2 presenting demographic data of education, employment, income, dependants and community standing.

4.2: Education, Employment, Income, Dependents and Community standing of Participants

Characteristics	Frequency (n)	Percentage (%)
Highest education level		
Less than matriculation	62	53.9
Matriculated or above matriculation	53	46.1
Employment status		
Unemployed	82	71.3
Employed	33	28.7
Monthly income		
R0 to R499	80	69.6
R500 or More	35	30.4
Dependants		
One to four	75	57.4
Five or more	40	42.6
Community standing		
Rung 1 to 4	66	57.4
Rung 5 and above	49	42.6
Religion		
Christian	109	94.8
Other	6	5.2
Importance of Religion		
Not Important	25	21.7
Very Important	90	78.3

4.3 Objective One: To Describe the Level of PTSD among Sexual Assault Survivors

PCL-S checklist was divided into four subsections which was the most bothering traumatic events witnessed by participants, period of traumatic event, physical injuries, and PTSD score.

4.3.1 Most Bothersome Traumatic Events Experienced or Witnessed by Participants

Figure 3 below represents the most bothering traumatic events experienced by participants of sexual assault by someone they know is 58.3% and sexual assault by stranger with 41.7%.

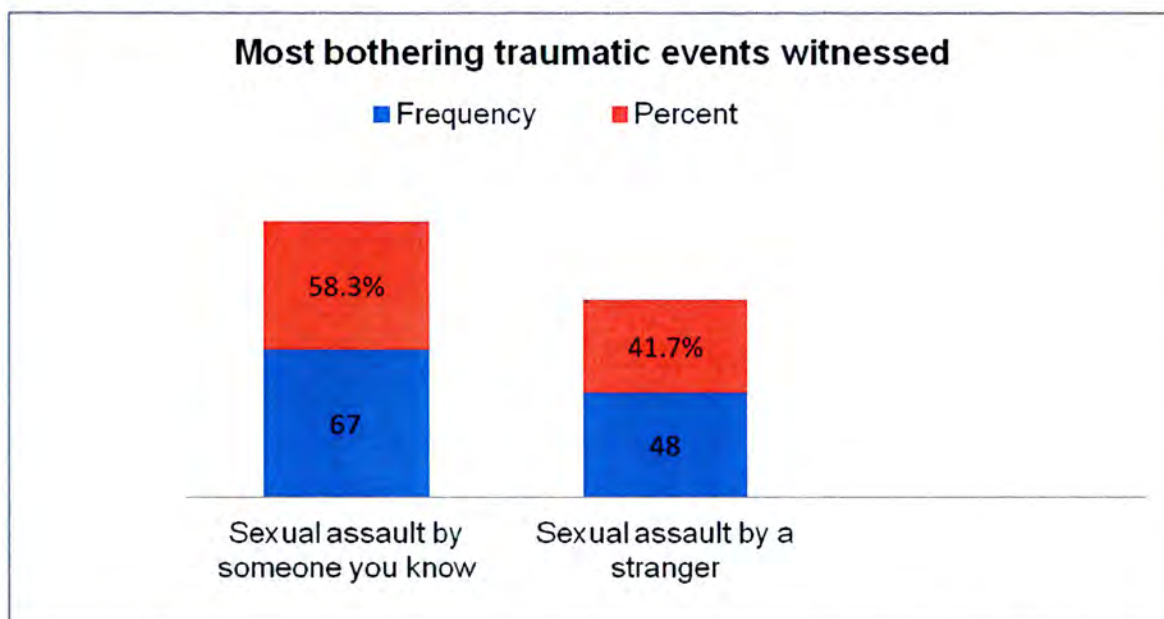


Figure 3: Participant's Response in the Most Bothersome Traumatic Event

4.3.2 Period of Traumatic Event

About 66.1% of participants experienced traumatic event in the period of one to three months, followed by those of three to six months at 15.7%; less than one month at 13.0%; and those of six months or more at 5.2%. See figure 4 which represents period of traumatic event

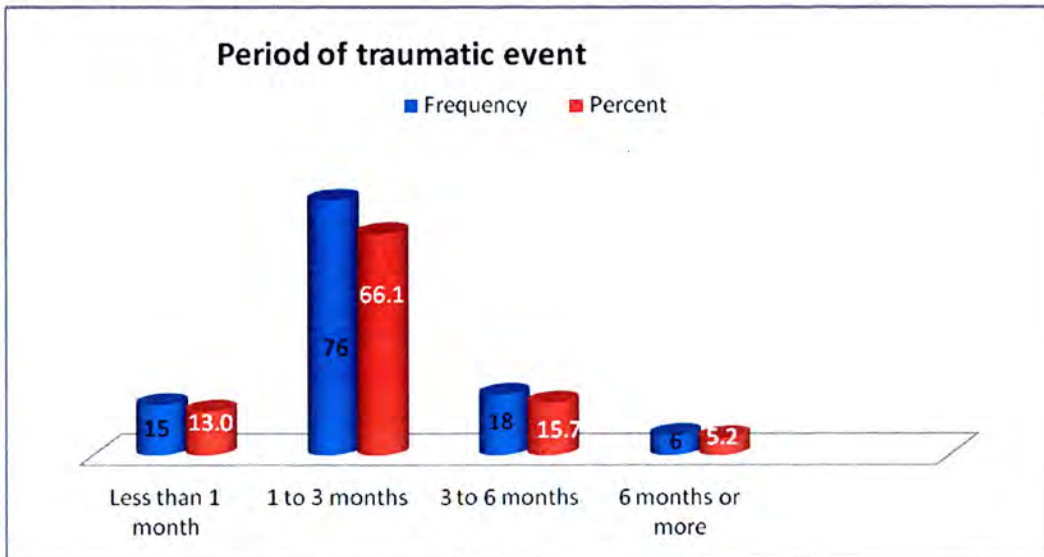


Figure 4: Period of Traumatic Event

4.3.3 Physical Injuries Occurred During Traumatic Event

During the time of sexual assault, 27.8% of participants were physically injured and 10.4% of physical injuries occurred to someone else. The majority of participants (43.5%) felt that their life is in danger after sexual assault and fewer (11.5%) felt that someone life is in danger.

About 79.9% of participants felt helpless, whereby 87.7% felt terrified. Refer to Table 4.3 of participants' response to physical injury that occurred during traumatic events

Table 4.3: Participant's Response in Physical Injury Occurred during Traumatic Events

Characteristics	Yes		No	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Were you physically injured	32	27.8	83	72.2
Was someone physically injured	12	10.4	103	89.6
Do you think your life was in danger	50	43.5	65	56.5
Do you think someone else is in danger	13	11.5	102	88.7
Did you feel helpless	91	79.1	24	20.9
Did you feel terrified	101	87.7	14	12.2

4.3.4. Level of PTSD Scores

The highest possible PTSD score was 72. The Mean score to diagnose PTSD was 36. This means that if the participants obtain PTSD mean score above 36 is said to be suffering PTSD and those who scored below 36 were not regarded as suffering PTSD. In this study, the total score obtained by all the participants ranged from 20 to 61 with an average mean of 40.70 SD (9.42). The majority (71%) of participants obtained above the mean score of PTSD, which is 36, and only fewer (29%) scored below 36. It was previously explained that PCL-S had four Likert scale and score one and two were summed up as no PTSD and score three and four as suffering PTSD. Table 4.4 below shows the responses of participants in the level of PTSD.

Table 4.4: Participant's Response in the Level of PTSD

PTSD Score:	Frequency	Percent
No PTSD	33	29
Having PTSD	82	71
Total	115	100

4.4 Objective Two: To Describe the Level of Depressive Symptoms among Sexual Assault Survivors

The highest possible depressive score was 84. The mean score was 42 and above that had represented depressive symptoms to the participants. The mean score below 42 indicates that the participants are not suffering depressive symptoms. In this study, the total score obtained by all the participants ranged from 21 to 65 with an average mean of 29.6 SD (8.98). Table 4.5 below shows response rate of participants and only 12.2% of participants obtained above 42 mean score of level of depressive symptoms and 87.8% scored below the mean of depression. It was previously explained that BID had four Likert scale and score one and two were summed as no depression and score three and four as suffering depression. See Table 4.5 which presents participants' response in the level of depression

Table 4.5: Participant's Response in the Level of Depression

Depressive score	Frequency	Percent
Not depressed	101	87.8
Depressed	14	12.2
Total	115	100.0

4.5 Objective Three: To Determine the Relationship between Coping Strategies and the Level of PTSD

The relationship between variables namely, PTSD and coping strategies (adaptive and maladaptive) were evaluated through hypothesis testing. The hypotheses were described as follows:

H0: There is no correlation between maladaptive coping and PTSD

H1: There is a correlation between maladaptive coping and PTSD

Based on this hypothesis, the Pearson's correlation coefficient of 0.034 shows an insubstantial positive correlation between the PTSD level and maladaptive coping with

5% confidence level. Therefore, it is concluded that the correlation is not statistically significant due to a p-value of 0.034, which is greater than 0.05. In this case; the null hypothesis is not rejected. Table 4.6 presents Pearson correlations between maladaptive coping and PTSD.

Table 4.6: Pearson correlation between Maladaptive Coping and PTSD

Maladaptive coping*PTSD		Maladaptive coping	PTSD
Maladaptive coping	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	115	
PTSD	Pearson Correlation	.034	1
	Sig. (2-tailed)	.715	
	N	115	115

H0: There is no correlation between adaptive coping and PTSD

H1: There is a correlation between adaptive coping and PTSD

The Pearson's correlation coefficient of 0.21 shows an insubstantial positive correlation between the PTSD level and adaptive coping with 5% confidence level. It is concluded that the correlation between adaptive coping and PTSD is not statistically significant due to a p-value of 0.21 which is greater than 0.05. Therefore, the null hypothesis is not rejected. Table 4.7 presents Pearson correlations between adaptive coping and PTSD

Table 4.7: Pearson Correlation between Adaptive Coping and PTSD

Adaptive coping*PTSD		Adaptive coping	PTSD
Adaptive Coping	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	115	
PTSD	Pearson Correlation	.021	1
	Sig. (2-tailed)	.825	
	N	115	115

4.6 Objective Four: To Determine the Relationship between Coping Strategies and the Level of Depression

The relationship between coping strategies (adaptive and maladaptive) and depression were evaluated through hypothesis testing. The hypotheses were described as follows:

H0: There is no correlation between adaptive coping and depression

H1: There is a correlation between adaptive coping and depression

Table 4.8 presents the Pearson's correlation between adaptive coping and depression. Coefficient of 0.311 shows a positive correlation between depression and adaptive coping with 5% confidence level. Therefore, it is concluded that the correlation between adaptive coping and depressive symptoms is statistically significant due to a p-value of 0.001 which is less than 0.05 and, in this case, the null hypothesis is rejected

Table 4.8: Pearson Correlation between Adaptive Coping and Depression

Adaptive coping*depression		Adaptive coping	Depression level
Adaptive coping	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	115	
Depression level	Pearson Correlation	.311**	1
	Sig. (2-tailed)	.001	
	N	115	115

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

H0: There is no correlation between maladaptive coping and depression

H1: There is a correlation between maladaptive coping and depression

The Pearson's correlation coefficient of 0.248 shows a positive correlation between the depression and adaptive coping. With 5% confidence level, it is concluded that the correlation is statistically significant due to a p-value of 0.008, which is less than 0.05 that is, the null hypothesis is rejected. See Table 4.9 which presents Pearson correlation between maladaptive coping and depression.

Table 4.9: Pearson Correlation between Maladaptive Coping and Depression

Maladaptive coping*depression		Maladaptive coping	Depression level
Maladaptive coping	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	115	
Depression level	Pearson Correlation	.248**	1
	Sig. (2-tailed)	.008	
	N	115	115

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

4.7 Relationship between PTSD, Traumatic Event and Demographic Characteristics

The relationship between PTSD, traumatic event were analysed relation to the characteristics of the demographics of the participants were analysed through hypothesis testing. The hypotheses were described as follows;

H₀: There is no association between PTSD and whether the survivor knew the perpetrator or not

H₁: There is association between the two variables

The expected count for the participants who had no PTSD were assaulted by someone they knew is (19.2) and the actual count is 15. Thus, there are fewer (4.2) participants with no PTSD who were assaulted by someone they knew than would be expected by chance. There are also the same differences between the actual and expected counts in the other cells. Refer to Table 4.10 of cross-tabulation between PTSD and the most bothering traumatic event witnessed by the participants.

4.10: Cross Tabulation between PTSD and most Traumatic Events Witnessed by Participants

Level of PTSD*Most bothering traumatic event		Please tell me which of the traumatic events you have experienced or witnessed has bothered you the most?		Total	
			Sexual assault by someone you know	Sexual assault by a stranger	
Level of PTSD	NO PTSD	Count Expected Count	15 19.2	18 13.8	33 33.0
	PTSD	Count Expected Count	52 47.8	30 34.2	82 82.0
Total		Count Expected Count	67 67.0	48 48.0	115 115.0

H₀: There is no association between the level of PTSD and traumatic events that bothered the participants most

H₁: There is an association between the two variables

Table 4.11 presents chi-square analysis to check association between PTSD and the traumatic event witnessed by the participants. The p-value for the Pearson's chi square statistic (0.077) is greater than the significance level of 0.05, therefore, the null hypothesis is not rejected, concluding that there is no statistically significant association between the level of PTSD and whether the victim knew the perpetrator or not.

4.11: Chi-Square analysis. Association between PTSD and the most Traumatic Event Witnessed by the Participants

PTSD*most of traumatic event witnessed by the participants	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.121 ^a	1	.077		
Continuity Correction ^b	2.426	1	.119		
Likelihood Ratio	3.095	1	.079		
Fisher's Exact Test				.096	.060
Linear-by-Linear Association	3.094	1	.079		
N of Valid Cases	115				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.77.

b. Computed only for a 2x2 table

The significant value of 0.60

Table 4.12 presents one way ANOVA of the association between PTSD and the level of education. The p-value of 0.584 is greater than the significance level of 0.05. Therefore, the null hypothesis that there is no statistically significant difference in the mean level of PTSD across all levels of education is not rejected. This suggests that no particular level of education can be regarded as having a significant contribution to the change in the level of PTSD. All education levels contribute equally to the level of PTSD

H_0 : The mean level of PTSD is the same across all levels of education

H_1 : At least one mean is different

4.12: One-Way ANOVA. Association between PTSD and the Level of Education

PTSD*level of education	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.595	4	.149	.714	.584
Within Groups	22.935	110	.208		
Total	23.530	115			

H_0 : The mean level of PTSD is the same across all relationship status

H_1 : At least one mean is different

Table 4.13 below represents one way ANOVA of association between PTSD across all the level of relationship status. The results have showed that p-value of 0.544 is greater than the significance level of 0.05; therefore, the null hypothesis that there is no statistically significant difference in the mean level of PTSD across all relationship is not rejected.

4.13: One-Way ANOVA. Association between PTSD across all the Relationship Status

PTSD*Relationship status	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.845	5	.169	.812	.544
Within Groups	22.685	109	.208		
Total	23.530	115			

H_0 : The mean level of PTSD is the same across all community standing levels

H_1 : Atlest one mean is different

Table 4.14 presents One-Way ANOVA determining association of PTSD across all levels of community standing. The p-value for the Pearson's chi square statistic (0.077) is greater than the significance level of 0.05, therefore, the null hypothesis is not rejected, concluding that there is no statistically significant association between the level of PTSD and whether the victim knew the perpetrator or not

4.14: One- Way ANOVA. Association between PTSD across all Community Standing

PTSD*Communi ty standing	Sum of Squares	df	Mean Square	F	Si g.
Between Groups	736.234	6	122.706	1.413	.216
Within Groups	9379.714	108	86.849		
Total	10115.948	115			

4.8 Relationships between Depression and Demographic Characteristics

The relationship between depression and demographic characteristics such i.e. is level of education, relationship status and community standing were analysed through hypothesis testing. The hypotheses were described as follows;

H₀:The mean level of depression is the same across all levels of education

H₁:Atlest one mean is different

Results showed that the p-value of 0.898 is greater than the significance level of 0.05 therefore the null hypothesis is not rejected. That there is no statistically significant difference in the mean level of depression across all education levels is not rejected. This suggests that no particular level of education can be regarded as a significant determinant of the level of depression. All education levels contribute equally to the level of depression. Refer to Table 4.15 of association between depression and the levels of education.

4.15: Association between Depression and the Level of Education

Depression*level education	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.119	4	.030	.269	.898
Within Groups	12.177	110	.111		
Total	12.296	115			

H₀:The mean level of depression is the same across all relationship status

H₁:Atlest one mean is different

The p-value of 0.635 is greater than the significance level of 0.05, therefore the null hypothesis, that there is no statistically significant difference in the mean level of depression across all relationship statuses, is not rejected. This suggests that no particular relationship status can be regarded as a significant determinant of the level of depression. All relationship statuses contribute equally to the level of depression. Refer to Table 4.16 of one way association between depression and the levels of relationship status.

4.16: One-way ANOVA. Association between Depression and the Levels of Relationship Status

Depression* relationship status	Sum of Squares	df	Mean Square	F	Sig
Between Groups	.375	5	.075	.68	.63
Within Groups	11.921	109	.109	6	5
Total	12.296	115			

H_0 : There is no correlation between level of depression and one's community standing

H_1 : There is a correlation between the two variables

Table 4.17 presents one-way ANOVA of Association between depression and across the levels of community standing. The p-value of 0.949 is greater than the significance level of 0.05 therefore; the null hypothesis that there is no statistically significant difference in the mean level of depression across all community standing levels is not rejected. This suggests that no particular community standing level can be regarded as having a significant contribution to the change in the level of depression. All community standing levels contribute equally to the level of depression.

4.17: One-Way ANOVA. Association between Depression and across the Levels of Community Standing

Depression*com munity standing	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.250	6	.042	.272	.949
Within Groups	16.533	108	.153		
Total	16.783	115			

4.9 Summary

Frequency distribution was used to analyse and describe demographic data. Frequency analysis was also used to describe the level of PTSD and the level depressive symptoms among sexual assault survivors. Correlational analysis was done to

determine the possible relationship between coping and PTSD and to determine the correlation between coping and depression. NOVA was used to determine the possible relationship among PTSD, depression and the demographic data. Chi-square analysis was done to determine the possible relationship between PTSD and the most traumatic event that bothered the participants.

CHAPTER FIVE

DISCUSSIONS, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION OF THE STUDY

5.1. Introduction

The chapter discusses the results according to its objectives, which are, namely, levels of PTSD and depression among sexual assault survivors; and the relationship among coping strategies, PTSD and depression among sexual assault survivors. Correlational cross sectional study was conducted in NWP - Ngaka Modiri Molema District. PCL-S for PTSD, BDI and brief COPE instruments were used to collect data to measure the levels of PTSD, depression and coping strategies among sexual assaulted survivors. The focus of this chapter is on discussions, applications of the conceptual framework to the findings, limitations, recommendations and conclusion of the study.

5.2. Discussions of the Findings

This section describes the levels of PTSD and depression, the relationship between coping strategies, PTSD and depression in relation to other studies. It also discusses the application of the conceptual framework (cognitive model) to the results of this study as well as limitations of the study.

5.2.1. Levels of PTSD and Depression among Sexual Assault Survivors

Suffering the aftermath of sexual assault is of great concern because its consequences that could lead to development of psychological and emotional problems. The study described the levels of PTSD and depressive symptoms among sexual assault survivors from six weeks after the event of sexual assault. The majority (71.3%) of participants in this study met the DSM-IV-TR diagnostic criteria for PTSD. This percentage shows a high degree of PTSD among sexual assaulted survivors as

compared to those who are not diagnosed with PTSD at 28.7%. The level of PTSD in this study is higher than the level of PTSD in a study conducted by Gill *et al.*, (2008:698) who found that only 14.8% suffered PTSD among women in the US and Griffin (2008:93) with 65% of level of PTSD in a study conducted in England with (40%) by Kilcommuns, Morrison and Lobban (2008:605). However, the level of PTSD in this study was below the level of PTSD (71.4%) in a study done by Ullman, Filipas, Townsend, & Starzynski (2007a:826) and level of PTSD (81%) in a study done by Gutner, Rizvi, Monson and Resnick (2006:814).

Furthermore, the study has also showed that only (12.2%) of participants obtained above mean average level of depression among sexual assaulted survivors. This level of depression is less than that of results found in a study done by Griffin, (2008:93), with 33% among sexual assaulted women in America. Due to reported percentage of PTSD and depressive symptoms found in this study at six weeks, it can be concluded that sexual assault is one of the predictors PTSD and depressive disorders as discussed in other studies.

5.2.2. The Relationship between Coping Strategies, PTSD and Depression

The study has examined the correlation between coping strategies and PTSD as well as coping strategies and depression. The results have revealed that there is no relationship between coping strategies (either maladaptive and or adaptive) and PTSD. This means that the development of PTSD in this study does not necessarily depend on coping strategies. Similarly, in a study conducted by Boesch, Koos, Figueredo and Coan, (2008:237) found that cognitive avoidance which is similar to maladaptive coping does not influence the development of PTSD. In contrary Ullman *et al.* (2007a:829) and Ullman and Najdowski (2009:48) found that there was an association between avoidance coping and PTSD symptoms among raped survivors.

The results also found that there is no relationship between adaptive coping and PTSD. This findings disagree with those found in a study by Ullman and Najdowski (2009:49) which states that there the development of PTSD is associated with adaptive

coping strategies among women who experienced traumatic life events. Additionally, the relationship between coping strategies (adaptive or maladaptive) was also examined. Results showed that there is a relationship between coping strategies and depression. Therefore it means that if an individual experienced sexual assault and had either adaptive or maladaptive coping strategies could not develop depressive symptoms.

These results are similar with the findings found in a study done by Alim *et al.* (2008:1571) which states that adaptive coping influences non development of psychological symptoms and depressive symptoms is one of the psychological problems. The results of this study have also showed that there is a relationship between maladaptive coping and depressive symptoms. This results, agrees with those found in a study by Rayburn, Wenzel, Elliot, Hambarsoomians, Marshall and Tucker (2005:674) and Waldrop and Resnick (2004:299) that state that traumatic event can influence maladaptive coping strategies which in turn may cause depressive symptoms. The implications of these results on determining the relationship between coping and PTSD could be that the study was cross sectional and focused only in first interval of data at six weeks after rape incidence. The other reason for coping strategies to relate to depression than PTSD could be that coping influences mood disorders more than anxiety disorders. Furthermore, previous studies have documented that except coping strategies, development of PTSD among sexual assault survivors might also be influenced by other factors like the type of psychological treatment they receive (Cohen & Wills, 1985:314), severity of sexual assault, physical injuries and offender violence (Ullman *et al.*, 2007b: 23).

5.3. Application of the Conceptual Framework to the Results of this Study: Cognitive Model for PTSD

Results of this study are discussed in relation with the conceptual framework of the study in Chapter two from Ehlers and Clark (2000). The study examined the relationship

between coping strategies and PTSD, and the correlation between coping strategies and depression.

According to adopted model by Ehlers and Clark (2000:321) survivors, who responded negatively to sexually assaulted events might end up with maladaptive coping strategies and present with either PTSD and/or depression. In turn, if the survivor responds positively to the sexually assaulted event, she might not develop PTSD and/or depression. Previously it was discussed that 58% of survivors knew their perpetrators, and about 42% were raped by strangers. Furthermore, 28% were physically injured and 44 % felt that their life was in danger whereby 79% felt helpless and 79% felt terrified.

Therefore, in contrary with this cognitive model results revealed that during cognitive process 74% of survivors had adaptive coping but remained with high level of PTSD (at 71%). These results suggest that both development and non-development of PTSD do not necessarily depend on either maladaptive or adaptive coping. Previously, it was also stated that maladaptive coping strategies have a tendency of influencing development of PTSD (Najdowski & Ullman, 2011: 218; Davidow & Edwards, 2007:12; and Ullman *et al.*, 2007b:23)

However, the results of this study in the relationship between coping strategies and depression were similar to the adapted conceptual framework. The adapted conceptual framework explained that if the survivor appraised the effects of sexually assaulted events negatively might develop depression. But if the individual appraises the effects of sexually assaulted events positively would end up not developing depressive symptoms.

Therefore, the study revealed about 74% of survivors had adaptive coping and most of them had no depression (at 88%). This results showed that results there is a relationship between both maladaptive and adaptive coping and depression. Therefore, both development and non-development of depression among sexually assaulted in this study is somehow influenced by coping strategies. On the other hand, the case is not

the same for PTSD and both adaptive and maladaptive coping. There was no any statistically significant relationship found between the coping strategies and PTSD.

This discussion of the application of the conceptual framework to the results is diagrammatically presented in figure 5 shows a schematic representation of the results in relation to the conceptual framework.

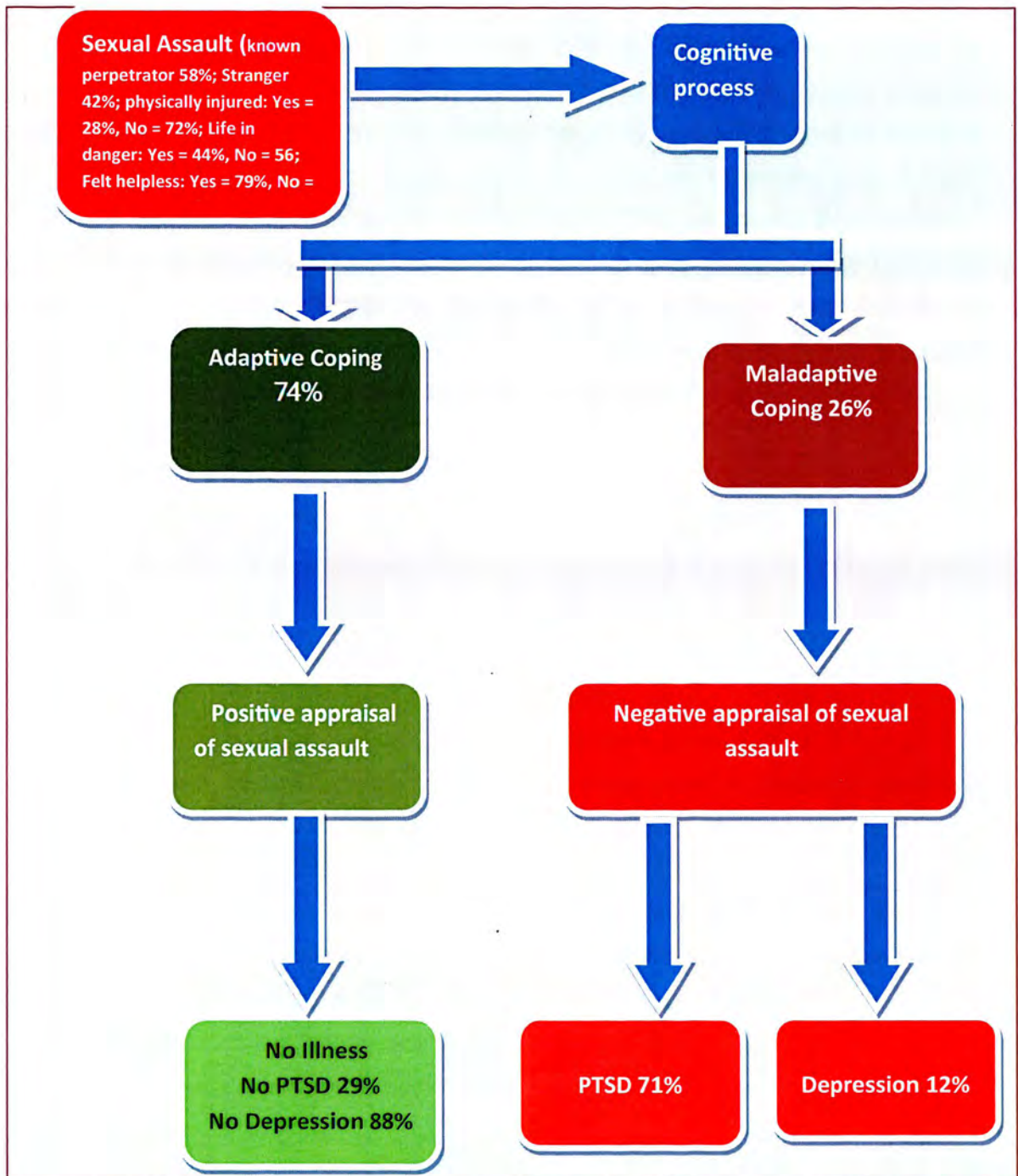


Figure 5: Schematic Representation of Results in Relation to the Conceptual Framework

5.4. Limitations of the Study

Findings of this study were done in one district in NWP, therefore such could not be generalised to other districts. The sample size of 115 also limits generalization because such will not be representative to other districts caring for sexually assaulted survivors in South Africa. Due to academic requirements the study was cross sectional. It could not assess coping strategies in relation to changes of PTSD and depression over time, could also not assess other factors that could hinder with coping as a strategy that could influence PTSD. Therefore, based on the factors listed above the study could not conclude that coping strategies cannot influence PTSD. Due the study can conclude coping can be used as a strategy that can influence depression.

5.5. Recommendations of the Study

This section discusses the recommendations of the study in the provision of health care, nursing education and future research.

5.5.1. Recommendations for the Provision of Health Care

Recommendations for the provision of health care services are as follows:

- Carry out comprehensive and in depth assessment to sexually assaulted survivors at six weeks to find out what is bothering them so to prevent the possibilities of PTSD and depressive symptoms development.
- Give psychological support and in depth counselling to sexually assaulted survivors diagnosed with PTSD and depressive symptoms, especially at six weeks after rape trauma.
- Provide cognitive behavioural therapy and integrate it with other treatment of PTSD and depressive symptoms to decrease its severity and complications.

5.5.2. Recommendations for Nursing Education

Recommendations to nursing education curriculum development are as follows:

- Include sexual assault and emphasize more on PTSD and depressive disorders in the training of nurses registered in undergraduate programmes of nursing degree and diploma.
- In-service training in relation to in-depth counselling and providing psychological support should be carried out among qualified nurses and other health care workers.

5.5.3. Recommendations for Future Research

- Large scale with high sample size studies to determine the relationship between coping strategies and level of PTSD and depressive symptoms at different intervals.
- Comparison study that will to determine factors that could influence coping strategies as one of the variables that could not account for development or non-development of PTSD as compared to depression.
- Explore feelings, emotions and psychological well-being of individuals who experienced trauma and how they respond it.

5.6. Conclusion

The importance of this study was to determine the levels of PTSD and depression among sexually assaulted survivors as well as to establish the relationship among coping strategies, levels of PTSD and depression. The study revealed a high level of PTSD and low level of depression among sexually assaulted survivors.

Hypothesis testing was done to assess the possible relationship of the variables. The study showed that there is no relationship between coping strategies and PTSD among sexually assaulted. On the other hand, the results had showed the possible relationship between coping strategies and depression. These associations between tested variables (coping and PTSD) showed that coping cannot account for the development

or non-development of PTSD. This suggests that there are still other factors that need to be considered when addressing coping as a strategy that could not influence both development and non-development of PTSD. This results also showed an association between coping and depression, which concludes that coping, can be used as a strategy that can account for development and non-development of depression among sexually assaulted survivors. Finally, implications of the results, limitations and recommendations were addressed as well.

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APPENDICES

Appendix 1: Ethical Clearance



Private Bag X6001, Potchefstroom
South Africa 2520

Tel: (018) 299-4900
Faks: (018) 299-4910
Web: <http://www.nwu.ac.za>

ETHICS APPROVAL OF PROJECT

Ethics Committee
Tel: +27 18 299 4990
Fax: +27 18 293 5329
Email: Ethics@nwu.ac.za

2010-11-19

This is to certify that the next project was approved by the NWU Ethics Committee:

<p>Project title : The Aftermath of Rape on Mental Health of Survivors in North West and Limpopo Provinces</p> <p>Project leader: Prof M Macolecele</p> <p>Ethics number: NWU-00110-10-A2</p> <p><small>(S) = Submission; (R) = Re-submission; (P) = Provisional Authorization; (A) = Authorization</small></p> <p>Expiry date: 2015/11/17</p>
--

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance.

The formal Ethics approval certificate will be sent to you as soon as possible.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Mariëtte Halgryn', written over a horizontal line.

Me. Mariëtte Halgryn
NWU Ethics Secretariate

Appendix 2: Permission Letter Submitted to Thuthuzela Care Centre

North West University (Mafikeng Campus)
P/Bag X 2046
Mmabatho
2735
30/August/2010

Thuthuzela Care Centre
Mafikeng Provincial Hospital
Lichtenburg Road
Danville
Mafikeng
2475

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

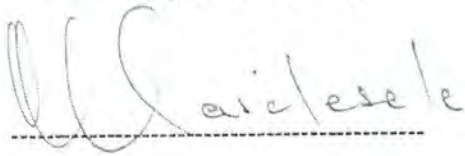
I am currently conducting a research project in collaboration with the University of California in Los Angeles. We are currently investigating on the aftermath of trauma as a result of Sexual Assault among women within the age range of 18- 55 years. This study will be conducted at the Thuthuzela centre in Mafikeng. We will be collecting data from rape survivors: first interviews will be conducted during their second visit to the hospital, then after 6 months and the last interview will be conducted after 12 months.

This study is conducted under the supervision of Professor M. Davhana- Maselesele in collaboration with University of California (Los Angeles) USA. We will prefer to collect data starting around November/December 2010 then will continue in 2011 and 2012.

Participants will be informed that all information disclosed by them to the interviewers will be kept confidential, and receive informed consent prior to the interview. In an effort to address safety, all participants will be informed of their right to withdraw from the study at any time or refuse to answer any question without any negative consequences. Participants will also be asked what they understand about each paragraph read to them during the consent process to ensure their informed consent

We will conduct interviews with participants and where need arise we will be able to refer them to a social worker/psychologist at the hospital. The information gathered will assist in curriculum development to ensure that training of health professionals is on an informed basis.

Thanking you in advance.



Mashudu Davhana-Maselesele

Professor Mashudu Davhana-Maselesele DPhil;
Dean Faculty Agriculture, Science and Technology
Private Bag X2046
Mmabatho
South Africa
2735

Email: mashudu.maselesele@nwu.ac.za
Tel: 018 389 2051/2050
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Appendix 3: Report for Completion of Human Research- Social & Behavioral Researchers

CITI Collaborative Institutional Training Initiative

**Human Research Curriculum Completion Report
Printed on 2/7/2012**

Learner: Nombulelo Veronica Zulwayo (username: 1234nombulelo)

Institution: University of California, Los Angeles

Contact Information Department: MEDCTR SMH NURSING DEPARTMENT

Email: nombulelo.zulwayo@NWU.ac.za

Human Research - Social & Behavioral Researchers & Staff:

Stage 1. Basic Course Passed on 02/07/12 (Ref # 7209297)

Required Modules	Date Completed	Progress
History and Ethical Principles - SBR	02/07/12	3/4 (75%)
Defining Research with Human Subjects - SBR	02/07/12	5/5 (100%)
The Regulations and The Social and Behavioral Sciences – SBR	01/04/12	3/5 (60%)
Assessing Risk in Social and Behavioral Sciences – SBR	01/04/12	4/5 (80%)
Informed Consent - SBR	02/07/12	5/5 (100%)
Privacy and Confidentiality - SBR	02/07/12	5/5 (100%)
Research With Protected Populations - Vulnerable Subjects: An Overview	01/10/12	3/4 (75%)
University of California, Los Angeles (UCLA)	01/10/12	2/4 (50%)

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education CITI Course Coordinator

Appendix 4: Consent Form

Informed consent

The Fulufhelo (Hope) project: South Africa

You are asked to participate in a research study conducted by Prof. Mashudu Maselesele of the North West University at Mafikeng, South Africa. You were selected as a possible participant in this study because you are a female over the age of 18 who is able to communicate in English, Tshivenda, Xitsonga or Tswana. Your participation in this research study is voluntary.

Why is this study being done?

Many women in our community have had sexual experiences against their will, which may afterwards affect their emotional health. The aim of this study is to obtain a greater understanding of the short and long-term effects of sexual assault and treatment services.

What will happen if I take part in this research study?

If you volunteer to participate in this study, the researcher will interview you using a survey that contains the following sets of questions:

- **Demographic information:** These will include questions about your age and marital status, where you live, your level of education, what work you do, your level of income, use of drugs or alcohol, your religion and any experience you may have going to a doctor as well as a traditional healer.
- **Questions about traumatic incidents:** This will include questions on the sexual assault that brought you into the clinic, as well as questions about whether you have had any traumatic experiences in the past. We will also ask you questions about how you feel about these traumatic incidents and how they have affected your daily life.
- **Questions about coping:** This will include questions like the way you might have felt or behaved after the rape

- Questions about PTSD and depressive symptoms: This will include questions like which traumatic events you have experienced and how long did it happen, physical injuries, nightmares, sadness, past failures, loss of pleasure

How long will I be in the research study?

Your participation in the study will take a total of about 90 minutes. We will also interview you again in 6 months and in one year

Are there any potential risks or discomforts that I can expect from this study?

- You may experience possible discomfort or tiredness from 90 minutes in the interview.
- You may also experience possible distress coming from the discussion of any traumatizing or life threatening events you may have experienced.
- During the interview, you may disclose sensitive personal information such as personal or family problems that you may have or have had in the past. The research team has taken several steps to ensure that this information is kept strictly confidential, but if it were to be exposed to others, your reputation could potentially be harmed.

Are there any potential benefits if I participate?

You could be having symptoms of trauma for which you may benefit from treatment. If this is discovered during this study, you will be referred to suitable health practitioners in the Hospital or elsewhere.

The results of the research may also help health professionals find better ways to examine and assist people from this community who have experienced trauma.

Will I receive any payment if I participate in this study?

You will not receive any payment for participating in this study. At the end of the study interview, you will receive a food voucher. We will also give you bus vouchers for return visits and light meals will be offered during return visits if necessary.

Will information about me and my participation be kept confidential?

Any information that is obtained in connection with this study and that can identify you will remain confidential. It will be disclosed only with your permission or as required by law.

We will keep your participation private by following these steps: The screening form and consent form will be the only documents containing your name. In addition, the screening form will be the only document containing your date of birth. Please remove the names on the demographic document. These two documents will therefore be kept in the locked office of the Principal Investigator, in a filing cabinet separate from the study survey.

The study survey will not have any information that can identify you as a person. It will be labelled with a code that the research team can link to your screening form and consent form. The survey will be kept in a locked cupboard in the locked office of the Principal Investigator. The list of all participants and their code numbers will be kept in a locked cabinet in a different room. These steps are designed to ensure that if an unauthorized person tried to obtain any of these documents, it would still be very difficult for them to know which participant the information belongs to.

Withdrawal of participation by the investigator

The investigator may withdraw you from participating in this research if circumstances arise which make it necessary. If it becomes extremely hard for you to understand or answer the study questions, you may have to drop out, even if you would like to continue. The investigator will make the decision and let you know if it is not possible for you to continue.

What are my rights if I take part in this study?

You may change your mind about participating at any time and stop participating without penalty or loss of benefits to which you were otherwise entitled.

You can choose whether or not you want to be in this study. If you volunteer to be in this study, you may leave the study at any time without consequences of any kind. You are not giving up any of your legal rights if you choose to be in this research study. You may also refuse to answer any questions that you do not want to answer and still remain in the study.

Who can answer questions I might have about this study?

If you have any questions, comments or concerns about the research, you can also talk to the principal investigator Prof. Mashudu Maselesele:

North West University (Mafikeng Campus)

P/Bag x2046

Mmabatho

2735

Email: mashudu.maselesele@nwu.ac.za

Signature of study participant

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

Name of Participant

Signature of Participant

Date

Future use of data

Please check the appropriate box below and initial:

I agree to have my data stored for future use by the Principal Investigator and/or research team. Initial _____

I do not want my data stored for future use by the Principal Investigator and/or research team. Initial _____

Signature of person obtaining consent

In my judgment the participant is voluntarily and knowingly giving informed consent and possesses the legal capacity to give informed consent to participate in this research study.

Name of Person Obtaining Consent

Contact Number

Signature of Person Obtaining Consent

Date

Appendix 5: Questionnaire of the Study

Survey Form 1 (Baseline)

Welcome and thank you for participating in the Fulufelo Project. Fulufelo stands for "hope" and we would like to ask you questions about your experiences and how they are affecting you. If you have any questions or need to stop, please let me know.

Section A: Demographic data

We'd like to get some information about you. I am going to read you some questions and please answer to the best of your ability.

- A1. How old are you? _____
- A2. Which province do you current live in?
1. Northwest Province
 2. KwaZulu-Natal
 3. Western Cape
 4. Limpopo (Venda)
 5. Other: _____
- A3. Have you always lived in this province?
0. No
 1. Yes
- A3a. If no, where else have you lived before? (specify): _____
- A4. How do you describe your ethnicity?
1. Zulu
 2. Venda
 3. Tsonga
 4. Tswana
 5. Other (specify): _____
- A5. What is your current marital status?
0. Never married
 1. Married, living with husband
 2. Married, but not living with husband
 3. Separated
 4. Divorced
 5. Widowed
- A6. What is your relationship status?
0. You have not had a relationship in the past 3 months
 1. You live with one partner
 2. You see/date one person regularly

- 3. You see, date more than one person regularly
- 4. You date occasionally

A7. What is your highest level of education?

- 0. None
- 1. Less than matric
- 2. Matric
- 3. University degree
- 4. Diploma
- 5. Other (specify): _____

A8. What is your working status?

- 0. Unemployed
- 1. Unable to work
- 2. Retired
- 3. Homemaker
- 4. In school
- 5. Working part time
- 6. Working full time
- 7. Other (specify): _____

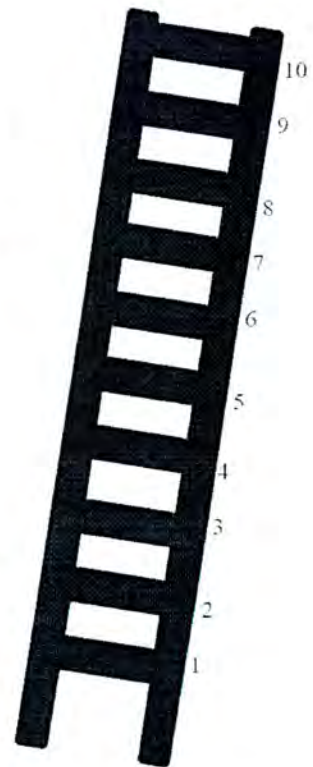
A9. How many children do you have?

A10. Which of the following best describes your total monthly personal income?

- 0. R0 - R500
- 1. R500 - R900
- 2. R1000 - R2999
- 3. R3000 - R5999
- 4. R6000 - R8999
- 5. R9000+

A11. This of this ladder as representing where people stand in their communities

People define community in different ways: please define it in whatever way is most meaningful for you. At the top of the ladder the people who have the highest standing in their community. At the bottom of the ladder are the people who have the lowest standing in the community.



Please tell me where you think you stand at this time in your life, relative to other people in your community.

Rung number: _____

A12. How many people in your household, including

Yourself, depend on your grant or income? _____

A13. What is the main language spoken in your home? _____

A14. What is your religion?

0. No religion (*SKIP TO B1a*)
1. Christian (e.g. Protestant, Baptist, Methodist, etc.)
2. Eastern (e.g. Muslim)
3. Catholic
4. Judaism
5. Other (specify): _____

A15. How important is your religion in your life?

1. Not at all
2. Somewhat
3. Very

Section B: Coping

We'll now talk about the ways you might have felt or behaved after the rape.

	I haven't been doing this at all (1)	I've been doing this once in a while (2)	I've been doing this some of the time (3)	I've been doing this a lot (4)
B1. I've been making jokes about it				
B2. I've been looking for something good in what is happening				
B3. I've been giving up trying to deal with it				
B4. I've been getting comfort and understanding from someone				
B5. I've been turning to work or other activities to take my mind off things				
B6. I've been getting emotional support from others				
B7. I've been trying to come up with a strategy about what to do				
B8. I've been refusing to believe it has happened				
	I haven't been doing this at all	I've been doing this once in a	I've been doing this some of	I've been doing this a lot (4)

	(1)	while (2)	the time (3)	
B9. I've been trying to find comfort in my religion or spiritual beliefs				
B10. I've been blaming myself for things that happened				
B11. I've been making fun of the situation				
B12. I've been expressing my negative feelings				
B13. I've been praying or meditating				
B14. I've been using alcohol or other drugs to help me get through it				
B15. I've been doing something to think about it less, such as going to movies, watching TV, reacting, daydreaming, sleeping or shopping				
B16. I've been saying things to let my unpleasant feeling escape				
B17. I've been accepting the reality of the fact that it has happened				
B18. I've been giving up the attempt to cope				
B19. I've been trying to get advice or help from other people about what to do				
B20. I've been taking action to try to make the situation better				
B21. I've been saying to myself that "this isn't real"				
B22. I've been getting help and advice from other people				
B23. I've been learning to live with it				
B24. I've been thinking hard about what steps to take				
B25. I've been using alcohol or other drugs to make myself feel better				
B26. I've been trying to see it in a different light, to make it seem more positive				
B27. I've been criticizing myself				
B28. I've been concentrating my efforts on doing something about the situation I'm in.				

Section C: PTSD Symptoms

This next section deals with experiences that have bothered or upset you in your lifetime.

C1. Please tell me which of the traumatic events you have experienced or witnessed has bothered you the most?

1. Accident
2. Disaster
3. Non-sexual assault by someone you know
4. Non-sexual assault by a stranger
5. Sexual assault by someone you know
6. Sexual assault by a stranger
7. Combat (war)
8. Sexual contact under 18 with someone 5 or more years older
9. Imprisonment
10. Torture
11. Life-threatening illness
- 12.

Other: _____

C2. How long ago did this traumatic event happen?

1. Less than 1 month
2. 1 to 3 months
3. 3 to 6 months
4. 6 months to 3 years
5. 3 to 5 years
6. More than 5 years ago

<i>During this traumatic event...</i>		No (0)	Yes (1)		
C3. Were you physically injured?					
C4. Was someone else physically injured?					
C5. Did you think your life was in danger?					
C6. Did you think that someone else's life was in danger?					
C7. Did you feel helpless?					
C8. Did you feel terrified?					
<i>In the past month...</i>	Not at all or only one time (1)	Once a week or less / once in a while (2)	2 to 4 times a week / half the week (3)	5 or more time a week / almost always (4)	N/A
C9. Did you have upsetting thoughts or images of the traumatic event that came into your mind					

when you didn't want them to?					
C10. Did you have bad dreams or nightmares about the traumatic event?					
C11. Did you relive the traumatic event, acting or feeling as if it was happening again?					
C12. Did you feel emotionally upset when you were reminded of the traumatic event (for example, feeling scared, angry, sad, guilty, etc.)?					
C13. Did you experience physical reactions when you were reminded of the traumatic event (for example, breaking out into a sweat, heart beating fast)?					
C14. Did you try not to think about, talk about, or have feelings about the traumatic event?					
C15. Did you try to avoid activities, people or places that remind you of the traumatic event?					
C16. Were you not able to remember an important part of the traumatic event?					
C17. How often have you had much less interest or participated much less often in important activities?					
C18. How often have					

you felt distant or cut off from people around you?					
C19. How often have you felt emotionally numb, for example, being unable to cry or unable to have loving feelings?					
	Not at all or only one time (1)	Once a week or less / once in a while (2)	2 to 4 times a week / half the week (3)	5 or more time a week / almost always (4)	N/A
C20. How often have you felt as if your future plans or hopes will not come true, for example, you will not have a career, marriage, children or long life?					
C21. How often have you had trouble falling or staying asleep?					
C22. How often have you felt irritable or had fits of anger?					

N23. How often have you felt overly alert, for example, checking to see who is around you, being uncomfortable with your back to a door, etc.?					
C24. How often have you been jumpy or easily startled, for example, when someone walks up behind you?					

Section D: Depressive Symptoms

*This questionnaire consists of 21 groups of statements. Please listen to each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. If several statements in the group seem to apply equally well, chose the one that fits the closest.*

Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

D1. Sadness

0. I do not feel sad
1. I feel sad much of the time
2. I am sad all of the time
3. I am so sad or unhappy that I can't stand it

D2. Pessimism (negative thoughts)

0. I am not discouraged about my future
1. I feel more discouraged about my future than I used to be
2. I do not expect things to work out for me
3. I feel my future is hopeless and will only get worse

D3. Past failure

0. I do not feel like a failure
1. I have failed more than I should have
2. As I look back, I see a lot of failures
3. I feel I am a total failure as a person

D4. Loss of pleasure

0. I get as much pleasure as I ever did from the things I enjoy
1. I don't enjoy things as much as I used to
2. I get very little pleasure from the things I used to enjoy
3. I can't get any pleasure from the things I used to enjoy

D5. Guilty feelings

0. I don't feel particularly guilty
1. I feel guilty over many things I have done or should have done
2. I feel guilty most of the time
3. I feel guilty all of the time

D6. Punishment feelings

0. I don't feel I am being punished
1. I feel I may be punished
2. I expect to be punished

3. I feel I am being punished

D7. Not liking yourself

0. I feel the same about myself as ever
1. I have lost confidence in myself
2. I am disappointed in myself
3. I do not like myself

D8. Self-criticalness

0. I don't criticize or blame myself more than usual
1. I am more critical of myself than I used to be
2. I criticize myself for all my faults
3. I blame myself for everything bad that happens

D9. Suicidal thoughts or wishes

0. I don't have any thoughts of killing myself
1. I have thought of killing myself, but I would not carry them out
2. I would like to kill myself
3. I would like to kill myself if I had the chance

(NOTE TO INTERVIEWER: FILL OUT REFERRAL FORM FOR THE PSYCHOLOGIST IN THE CENTER IF PARTICIPANTS ANSWER 2 OR 3)

D10. Crying

0. I don't cry any more than I used to
1. I cry more than I used to
2. I cry over every little thing
3. I feel like crying, but I can't

D11. Agitation

0. I am no more restless or wound up than usual
1. I feel more restless or wound up than usual
2. I am so restless or agitated that it's hard to stay still
3. I am so restless or agitated that I have to keep moving or doing something

D12. Loss of interest

0. I have not lost interest in other people or activities
1. I am less interested in other people or things than before
2. I have lost most of my interest in other people or things
3. It's hard to get interested in anything

D13. Having a hard time making decisions

0. I make decisions about as well as ever
1. I find it more difficult to make decisions than usual
2. I have much greater difficulty in making decisions than I used to
3. I have trouble making any decisions

- D14. Not feeling like I am worth anything
0. I do not feel that I am worthless
 1. I don't consider myself as worthwhile and useful as I used to
 2. I feel more worthless compared to other people
 3. I feel utterly worthless
- D15. Loss of energy
0. I have as much energy as ever
 1. I have less energy than I used to have
 2. I don't have enough energy to do very much
 3. I don't have enough energy to do anything
- D16. Changes in sleeping patterns
0. I have not experienced any change in my sleeping pattern
 - 1a. I sleep somewhat more often than usual
 - 1b. I sleep somewhat less than usual
 - 2a. I sleep a lot more than usual
 - 2b. I sleep a lot less than usual
 - 3a. I sleep most of the day
 - 3b. I wake up 1-2 hours early and can't get back to sleep
- D17. Irritability or being easily annoyed
0. I am no more irritable than usual
 1. I am more irritable than usual
 2. I am much more irritable than usual
 3. I am irritable all the time
- D18. Changes in appetite
0. I have not experienced any changes in my appetite
 - 1a. My appetite is somewhat less than usual
 - 1b. My appetite is somewhat greater than usual
 - 2a. My appetite is much less than before
 - 2b. My appetite is much greater than usual
 - 3a. I have no appetite at all
 - 3b. I crave food all the time
- D19. Concentration difficulty
0. I can concentrate as well as ever
 1. I can't concentrate as well as usual
 2. It's hard for me to keep my mind on anything for very long
 3. I find I can't concentrate on anything
- D20. Tiredness or fatigue

- 0. I am no more tired or fatigued than usual
- 1. I get more tired or fatigued more easily than usual
- 2. I am too tired or fatigued to do a lot of things I used to do

D21. Loss of interest in sex

- 0. I have not noticed any recent change in my interest in sex
- 1. I am less interested in sex than I used to be
- 2. I am much less interested in sex now
- 3. I have los

APPENDIX 6: LETTER OF ENGLISH EDITOR

MM Mohlaka
Centre for Academic Excellence
University of Limpopo
Turfloop Campus
Private Bag x 1106
Sovenga
0727

25 July 2013

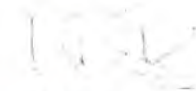
To Whom It May Concern:

This letter is meant to acknowledge that I, MM Mohlaka, as a professional editor, have meticulously edited the dissertation of Ms Nombulelo Veronica Zulwayo (Student Number: 18C08240) entitled "Correlation between Coping Strategies and the Levels of Posttraumatic Stress Disorder and Depressive Symptoms Among Sexually Assaulted Survivors in North West Province, South Africa".

Thus I confirm that the readability of this work in question is of a high standard.

For any queries please contact me.

Regards



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