RISK FACTORS ASSOCIATED WITH WORK-RELATED STRESS AMONG EMPLOYEES OF THE SOUTH AFRICAN POLICE SERVICE (SAPS) AT A DISTRICT IN LIMPOPO PROVINCE, SOUTH AFRICA: AN ANALYTICAL CROSS-SECTIONAL STUDY.

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KEYWORDS

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Workplace

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Burn-out

Police Act employees

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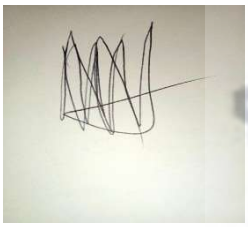
Rural and urban South African Police Service

Limpopo Province.

DECLARATION

I, Mmanare Wilhemina Mokoena, declare that **"Risk factors associated with work-related stress among employees of the South African Police Service (SAPS) at a district in Limpopo Province, South Africa: analytical cross-sectional study"** is my own work, and It has not been submitted for any degree or examination in any other university. All the sources I have used or quoted have been indicated and acknowledged by complete references.



Researcher's Signature

Date: **07 March 2024**

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DEDICATION

An extract from Nelson Mandela “It always seems impossible until it is done”. This work is dedicated to my loving Father (The late Koena Zacharia Kgomo), who was an educator and was very passionate about education. His going back to school to further his studies full-time, made me realize his passion for education. He instilled a love for education in me and walked the path with me until he succumbed to Cancer. He is the reason I pursued Public Health, and I wish he was here to witness this milestone. We may have lost him, but heaven has gained another angel. May Papa’s legacy live forever and his soul continues to rest in perfect peace (1935-2015).

ABBREVIATIONS

PA	Police Act
PSA	Public Service Act
PTSD	Post-Traumatic Stress Disorder
SAPS	South African Police Service
UK	United Kingdom
USA	United States of America

DEFINITION OF TERMS

Police Act members (PA): Employees hired in terms of the South African Police Act 68 of 1995.

Public Service Act members (PSA): Employees hired in terms of the Public Service Act 47 of 1994.

Rank 1 (Junior level): Constable, Sergeant and Warrant officer

Rank 2 (Junior management level): Captain

Rank 3 (Middle management level): Lieutenant Colonel and Colonel

Rank 4 (Senior level): Brigadier and General

ABSTRACT

Background:

One of the world's most demanding jobs is law enforcement. Police officers perform law and order tasks that often expose them to various psychosocial risk factors. These risk factors negatively affect their health and contribute to the burden of non-communicable diseases including mental health. An estimated 300 million people worldwide suffer from mental health issues. Due to exposure to traumatic incidents and work-related stress, police personnel are more likely than the general population to experience mental health illnesses including depression and suicide.

The study aimed to determine risk factors associated with work-related stress among the employees of the South African Police Service (SAPS) at a district in Limpopo Province, South Africa.

Methods:

The study employed a cross-sectional quantitative study design, using a structured self-reporting questionnaire to collect data. Participants were permanent employees of the South African Police Service, who have been employed for a period of one year and more in the selected district, in Limpopo Province. Systematic sampling was used and the sample size was n=341. Although 240 participants took part in the study, only 67% (n=228) completed it. Five percent (n =12) of the participants withdrew from the study because of unforeseen obligations at work. STATA software version 11.0 was used to analyze the data. Permission to conduct the study was requested from the University of the Western Cape (UWC) Biomedical Research Ethics Committee (BMREC) and approval was granted on 2022.12.12 with reference BM22/10/14. Further approvals were obtained from the SAPS National Office, SAPS Limpopo Provincial office, and from the actual sites where the study was conducted.

Results:

Socio-demographic data revealed that 67% (n=152) participants were Police Act members and Public Service Act members were 33% (n=76). Fifty-one percent (n=117) of participants were

from rural stations whilst 49% (n=111) were from urban stations. There were more female participants, 56% (n=127), compared to males, 38% (n=87) and 6% (n=14) participants who identified their gender as "other". Operational police officers were 51% (n=117), support staff 38% (n=87), and non-operational police officers 11% (n=24). In terms of risk factors, results showed a significant association in the manageable number of hours of work with regard to the gender groups (p=0.03). Both female and male participants reported that they do not have a manageable number of hours of work. However, there was no significant association in gender groups in terms of the appropriate amount of work, interesting work, enough time to complete the work, rest outside work and enough time for hobbies (p>0.05). The study showed a significant association between stress, anxiety and depression.

Conclusion:

The study concluded that participants experienced stress, anxiety and depression as a result of work-related stressors. Risk factors associated with work-related stress were found to be insufficient time to rest, working for long hours, heavy workload and not having what is needed to perform well at work There is a need to design appropriate interventions to address the identified risk factors. Furthermore, routine screening for stress, anxiety and depression is of paramount importance for the promotion of mental health education and reduction of stigma.

The findings of this study will serve as a baseline for the identification of risk factors within SAPS as an organization. Existing interventions will have to be reviewed so that they can address the management of stress, anxiety and depression. Furthermore, there might be a need for the development of new interventions. Efficient and effective implementation of the interventions will hopefully reduce the incidence and prevalence of mental health problems. This will boost the employees' productivity, and in turn have a positive impact on their families and the communities they serve.

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CHAPTER 1: INTRODUCTION

1.1 Background

An estimated 300 million people worldwide suffer from mental health issues, which contribute to the burden of non-communicable diseases. Due to exposure to traumatic incidents and work-related stress, police personnel are more likely than the general population to experience depression and suicide (Njiro et al., 2021).

1.1.1 The role of the police in the society

Kappeler & Schaefer (2018), describe the role of the police as crime prevention, crime prevention and apprehension of criminals, efficient, apolitical and professional enforcement of the law. The police are said to be playing the role of the peace-keeper as they maintain order in cases such as finding lost children and interceding in quarrels of one sort or another. They also play a role of law enforcement as they are responding to burglary calls or trying to find stolen cars and attending to riots in the society. Law enforcement results from the victimization of an innocent person by someone whose guilt needs to be established, whereas maintaining order results from conflicts between individuals who blame one another for wrongdoing (Kappeler & Schaefer, 2018). According to Charman (2018), the police are also entrusted with upholding law and order, safeguarding individuals and their property, and detecting, looking into, and preventing criminal activity.

1.1.2 The challenges faced by police officers in the line of duty

One of the world's most demanding jobs is law enforcement. Police officers in various nations may have distinct stressors (Kara, Sunger & Kapti, 2015). For example, Turkey's police force is facing numerous difficulties such as inadequate wages, long and irregular working hours, less time for social activities and so forth. In just five years (2009–2013), 157 police personnel are said to have taken their own lives. Turkey is situated between the frontiers of Europe and Asia. Due to Turkey's geographical area, police officers in this nation constantly deal with issues including drug and gun smuggling, people trafficking, becoming targets of terrorist groups, and other issues. Additionally, it is stated that the average life expectancy in Turkey is

73.8, whereas the life expectancy of law enforcement officials is 55.9. In other words, compared to the general population, police officers live about eighteen years less than the general population (Kara et al, 2015).

According to a recent survey conducted in the United Kingdom, nearly one in five police officers (out of 6857) reported having had symptoms of post-traumatic stress disorder after being exposed to a stressful event at work. Due to the numerous operational and occupational stressors they face, police work is a difficult and stressful profession. They deal with violent tendencies and unfavourable views of people they serve (Santa Maria, Wolter, Gusy, Kleiber & Renneberg, 2020).

Since police officers handle murder cases the majority of the time, they are prone to intrusive thoughts, irregular sleep patterns, and depressed moods. In addition, they deal with organizational stressors like heavy administrative workloads and poor leadership. Long-term job stress is linked to high rates of psychological discomfort and increased risks of cardiovascular disease (Santa Maria et al., 2020). Since police officers are considered emergency personnel, stress is a common occurrence for them. They are exposed to emotional trauma when they encounter traumatic events and psychological stressors such as physical harm, assault, and hostage situations. Due to their exposure to potentially fatal situations, police personnel are also more likely to experience Post-Traumatic Stress Disorder (Mona, Chimbari & Hongoro, 2019).

According to a study done in the USA on 365 police personnel. The physical and psychological risks of working as a police officer, as well as work pressure, were also mentioned (Mona et al., 2019). The majority of deaths among police officers were associated with the incidence of complete PTSD, according to a study done on 157 Brazilian police officers. Full PTSD incidence was 8.9%, while partial PTSD prevalence was 16%. Police personnel who had complete PTSD stated that they were in poor physical condition and had been exposed to long term suicidal ideation (Mona et al., 2019).

The psychological, social, and emotional well-being of police officers are impacted by stress. According to research done in the UK among London Police officers, 46% of them said they were under a lot of stress. High levels of stress were also found in a long-term study involving 290 police officers in Italy (Mona et al., 2019). According to a survey of 497 Israeli border police, common occupational concerns include inadequate resources, low pay, and an excessive workload. Numerous studies have demonstrated that police officers with psychological issues, such as stress or PTSD, had higher total cholesterol. Therefore, research has shown that psychological issues may contribute to additional health hazards, such as high blood pressure and diabetes (Mona et al., 2019).

According to research done among police officers in Botswana, police personnel are required to deal with scenarios that call for a distinct set of skills in order to deal with them forcefully and successfully. These situations include fighting and preventing crime. Numerous pressures that police officers encounter have a detrimental effect on their health and productivity at work (Agolla, 2009).

The South African Police Service (SAPS) operates in a violent and high-crime environment where the incidence of police killings is rising. Police personnel frequently encounter traumatic incidents because they deal with violence, car crashes, shootings, and witnessing the murders of their own colleagues (Mushwana, Govender & Nel, 2019). In a study involving 104 police officers in South Africa, it was discovered that constables and captains reported lower levels of stress. The study also revealed that female officers experienced higher levels than their male counterparts. According to reports from other studies, sexual harassment is one of the reasons why female police officers experience such high levels of stress (Mushwana et al., 2019).

Mushwana et al (2019) further states that, the top three stressors in the police force were reporting a death in the course of duty, a fellow officer dying in the line of duty, and knowing about or experiencing the death of a fellow officer. Additional research carried out in South Africa came to the conclusion that many police officers view their circumstances as stressful and traumatic due to ongoing exposure to violence, resigning from the South African Police Service due to psychological disorders related to stress, and the high suicide rate. This study

also came to the conclusion that police personnel may become unwell as a result of stressful situations (Mostert & Rothmann, 2006).

While performing their duties, police personnel are subjected to catastrophic situations and ongoing stress. Officers who have been exposed to such situations frequently develop physical and mental health problems throughout their careers (Papazoglou & Andersen, 2014). Mostert & Rothmann (2006), emphasize the need to reduce any potential variables affecting police officers' work-related well-being and the importance of having a strong and effective police force that contributes significantly to national stability and economic progress.

1.1.3 Work-related stress as a global public health issue

According to the World Bank, the World Health Organization, and the United Nations, 1 in 4 people globally suffer from neuro-psychiatric diseases; as a result, these conditions have been deemed a public health emergency (DeVries & Wilkerson, 2003). Approximately 10% of cases are reported to be recognized and treated globally, leaving 500 million people undiagnosed. In 1999, associated economic expenditures reached a total of 120 billion dollars in North America and Europe, with stress-related diseases accounting for over 60 billion of those expenses (DeVries & Wilkerson, 2003).

Stress in the workplace causes neuropsychiatric diseases to worsen globally and increases reliance on people's mental abilities (DeVries & Wilkerson, 2003). According to Senova & Antosova (2014), stress at work is a global problem that requires attention and elimination of stress-related risks within the organization. Stress can have a negative impact on an organization's finances through absenteeism, mistakes, poor performance, employee accidents, damage to the company's reputation from unfavourable working conditions, and other issues (Senova & Antosova, 2014).

1.1.4 The Police work stress reactions

Physiological, emotional, and behavioural reactions can be used to characterize police job stress reactions. Physiological responses are linked to an increased risk of dying as well as

conditions including heart attacks, high blood pressure, migraines, and other ailments. An emotional response can be depressive, suicidal, or extremely emotional, like Post Traumatic Stress Disorder, which is invariably linked to intense and protracted exposure to a sequence of traumatic experiences (Agolla, 2009). At the organizational level, behavioural responses are linked to decreased job performance, which leads to bad decisions, low morale, and absenteeism. Individual behavioural responses, however, might take many forms, such as hostility, violence, drug abuse, alcoholism, excessive smoking, and so forth (Agolla, 2009).

Mushwana et al. (2019) state that, police officers, particularly those with more experience on the job, are more prone to suicidal thoughts and behaviours as well as depression and PTSD. Different ranks in the SAPS have varying stress levels; nevertheless, some research indicates that constables have lower levels of stress than other ranks. Some of the organizational stressors in the SAPS include low salary, unjust disciplinary procedures, bad working conditions, unfair promotions, and a lack of management assistance (Mushwana et al., 2019).

1.2 Problem statement

Limited research has been conducted on work-related stress among police officers in South Africa, hence there are insufficient opportunities to draw inferences from previous studies. This research will therefore explore this area which is less known and unlock new possibilities. This study will help the SAPS management to intensify programmes that will address the mental health of employees and capacity building of employee health and wellness practitioners who will be facilitating these programmes. Sound mental health of employees will contribute to the enhancement of employee productivity, workplace efficiency and effectiveness. This will in turn reduce the high rate of domestic violence amongst SAPS employees, thus preserving their families. Furthermore, they will be able to serve the communities more efficiently and effectively.

Few studies that were conducted in South Africa came to the conclusion that police officers' jobs force them to repress feelings of shock, horror, or melancholy (Mushwana et al., 2019). It is also expected of officers to have empathy and understanding for victims of crime. As a result,

they alternate between being emotionally detached, sympathetic, and occasionally extremely forceful, which may cause cognitive disorientation (Mushwana et al., 2019).

Police personnel in South Africa frequently are not able to discuss work-related concerns with friends, family, or peers due to confidentiality (Mushwana et al., 2019). Police personnel may be misinterpreted in familial and domestic settings, adding to their stress levels and raising the possibility of feelings of loneliness, which in turn raises the divorce rate within the force. Stress levels are increased as a result of all these variables. Suicide or probable femicide/suicide can result from strong feelings of loneliness and hopelessness (Mushwana et al., 2019).

In the course of their work, South African Police Service (SAPS) personnel encounter numerous hazardous and taxing circumstances. These circumstances may negatively affect their personal lives, their ability to perform at work, and their ability to provide the communities with high-quality services. Additionally, it may result in their demise as well as infections, wounds, and disabilities. Employees, their families, or the general public may file civil claims against the organization as a result of all these stressful circumstances (SAPS Annual Report, 2016/17).

1.3 Research question

What are the risk factors associated with work-related stress among employees of the South African Police Service (SAPS)?

1.4 Purpose of the study

The purpose of this study was to determine risk factors associated with work-related stress amongst members of the South African Police Service, employed under both the Police and Public Service Act, in a selected district in Limpopo Province. Determining these risk factors, will enable SAPS management to improve the working environment in order to address these stressors.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the literature review for psychological stress, work-related stress, as well as the stressful nature of policing as an occupation. The risk factors for stress among police officers and the strategies for management of work-related stress will also be addressed in this chapter.

2.2 Psychological stress

Stress is defined as the body's response to internal and external stimuli which can be mental, emotional, or physical, that disturb the body's homeostasis. Problems, sicknesses, and stress are caused by changing technologies, work environments, and perspectives. Illness, suicide, and absence from work also have a detrimental financial impact on the organization (Kara et al., 2015).

When a person believes that their ability to adjust to the demands of their environment is being exceeded, psychological stress results. It focuses on the occurrence of environmental events that are generally accepted to be beyond a person's capacity for adjustment or on personal reactions to events that suggest this overload, such as felt stress and adverse effects triggered by the experience (Cohen, Janicki-Deverts & Miller, 2007). Workers experience work-related stress when their workload surpasses their capacity and resources, leading to a mismatch in expectations between the organization and themselves (Galanis, Fragkou & Katsoulas, 2021).

According to Galanis et al. (2021), stress is a dynamic process brought on by outside pressure. The ability of an individual to adjust to changing environmental situations is a crucial aspect of stress. Every person is different and a person's experiences may influence how they react to stressors, whether they are favourable or negative. Experiencing stress occasionally can be healthy and helpful; it can spur one to concentrate and be productive. However, excessive stress can be excruciating and disastrous, leading to depression and other health issues. Therefore,

there is a need to identify risk factors for stress in order to develop and implement appropriate interventions to reduce stress among police officers (Galanis et al., 2021).

2.3 Work-related stress among police officers

Neely and Cleveland (2011) define work-related stress as "a negative state of mind that develops when workers experience a stressor that impairs, exceeds or threatens their ability to effectively manage the stressor". Depending on a person's personality, the kind of stress they experience and their coping skills may lead to maladaptive health outcomes, such as depression, burnout, or behavioral responses (Neely & Cleveland, 2011).

Stress-related behaviours among police officers leads to police brutality, aggressive behavior and the unnecessary use of force during an arrest, dispute or other incident. The excessive use of force will continue even after the victim has been restrained or is in police custody. The person who has been subjected to stress will deal with it in a variety of ways, including delinquent behavior and criminal activity. If the response to the stress elicits negative feelings, especially anger or frustration, these behaviors can result in civil actions against police officers and their employers (Neely & Cleveland, 2011).

Burnout, a syndrome resulting from continuous professional stress that has not been effectively handled, has been linked to work-related stress. It is characterized by tiredness, a more detached or mistrustful attitude toward co-workers and clients, as well as sentiments of diminished personal achievement or professional efficacy (Alves, Abreo, Petkari & Pinto, 2023). Furthermore, Rose et al. (2017) note that research has linked burnout to depression, a significant health issue affecting working populations that contributes to an increase in and prolongation of sick leave.

Work-related stress can lead to burnout, which has been recognized as a syndrome resulting from chronic workplace stress that has not been managed successfully. It is characterized by exhaustion, increased mental distance or distrustful attitude towards colleagues and service users, as well as feelings of reduced professional efficacy or reduced personal accomplishment

(Alves et al. 2023). In addition, Rose et al. (2017) indicate that burnout has been shown to be related to depression, which is a major health problem among working populations leading to increasing and prolonged sickness absences).

Rose et al. (2017) went on to say that weariness could be caused by stress. Feelings of exhaustion or low energy are called fatigues. While relaxation and sleep can help with normal exhaustion, fatigue has unpleasant characteristics and cannot be totally or readily relieved by these activities. Fatigue has been linked to both chronic medical conditions and work-related stress (Rose et al., 2017).

Ornek & Esin (2020) contend that because work-related stress negatively affects people's health, it is increasingly becoming recognized as a significant public health issue. Additionally, it leads to illnesses, harmful behaviours, and a variety of stress-related reactions in workers, particularly in female workers. Because of the biological and psychological makeup of women, the impact of different duties and obligations that women have in the home, and their exposure to social injustices, women are twice as likely as men to experience the symptoms of stress (Ornek & Esin, 2020).

2.4 The stressful nature of policing as an occupation

Nair and Joseph (2013) state that policing is typically regarded as a vocation that is extremely susceptible to stress. A person's occupation plays a crucial role in their life and existence because adults spend the majority of their time at work, where social and psychological aspects of the job as well as physical aspects have an impact on their physical and mental well-being. Numerous physiological, psychological, or behavioural markers of stress may arise depending on the type, duration, and perceived intensity of the stress (Nair & Joseph, 2013).

Webster (2013) describes policing by the possibility of danger present at all times, a special right to use force, a tendency toward social isolation, and a duty to ensure the safety of others. It has been determined that policing is a difficult profession, and there is a link between long-term workplace stress and poor health outcomes for police officers. Physical, psychological,

and behavioural issues, including elevated rates of specific illnesses, post-traumatic stress disorder, burnout, and suicide, can be brought on by both chronic and acute stressors (Webster, 2013).

According to a study done on police officers in Botswana, police personnel are required to deal with scenarios that call for a distinct set of skills in order to deal with them forcefully and successfully. These situations include combating and preventing crime (Agolla, 2009). In South Africa, some police officers are less affected because they have the support of their families and innate personality traits that strengthen their resilience, while others suffer extremely high levels of stress and burnout (Mushwana et al., 2019).

The nature of the job is the most common excuse given by police officers for their stress at work. Extreme occurrences are more likely to happen to police officers than to ordinary persons during the course of a lifetime. These incidents include coming across a dead body, even coming into contact with them while working, killing someone while performing their job, dying themselves, or witnessing the death of a co-worker while performing their job (Kara et al., 2015).

Police detectives are frequently required to speak with sexual offenders and are confronted with graphic crime scenes, distressed victims or witnesses, unsettling evidence, dead bodies, sounds, and odours. Due to their ongoing exposure to these hardships, investigators frequently depart from investigation units; for those who do remain, it is crucial that they establish coping mechanisms (Giblin, 2016).

Enforcing democratic laws is a duty that around 806 400 police officers and 17 784 agencies in the US must accomplish. Yet, stress has a detrimental effect on this duty by impairing the health of these police officers (Violanti et al., 2017).

Moreover, compared to their male counterparts, female officers felt greater stress at work. It was discovered that the South African Police Service is predominately male, and that female

police officers may face sexual harassment, prejudice from the public and the necessity to win over male officers. In addition, female police officers distinguished stressors in a different way than their male counterparts (Mushwana et al., 2019). It was also reported that women are susceptible to stress due to their biological and psychological makeup and exposure to social injustices (Ornek & Esin, 2020). Higher work stress and gender were the most reliable risk variables for worse mental health among police officers, according to another study done on police officers, albeit their impact differed depending on the outcome (Syed, Ashwick, Schlosser, Jones, Rowe & Billings, 2020).

According to research done on Chinese law enforcement, personnel assigned to rural areas demonstrated a greater degree of somatization than their counterparts in urban areas. On the other hand, no differences between rural and urban areas were found for the stress components of depression and anxiety (Wu & Wen, 2020). Furthermore, this research implies that the observed differences in somatization between rural and urban areas were largely mitigated by perceived limitations in training and resources (Wu & Wen, 2020).

2.5 Job content

The environment or nature of the work might be sources of stress for police officers. Violanti et al. (2017) state that, job content includes things like work schedules, shift work, lengthy working hours, overtime, court work, traumatic occurrences, dangers to one's bodily or mental health, and so on. Inadequate pay, workload, irregular work schedules, organizational policies, job ambiguity and conflict, retirement, career advancement, and other issues are some organizational pressures in the police force (Kara et al., 2015).

Police officers work between 240 and 300 hours per month, whereas the Public Servant Law caps total working hours at 160 (Kara et al., 2015). An increased risk of poor mental health, depression, anxiety, stroke, poor sleep, coronary heart disease, and heavy alcohol consumption has been linked to long work hours (Houdmont & Randall, 2016). According to the results of one study on police officers, 25% of the sampled police officers reported working long hours, and they were also far more likely to report having a common mental health issue. The results

of this study, which indicate that managing working hours may successfully improve psychological well-being, need to be confirmed by national and longitudinal research (Houdmont & Randall, 2016).

Police officers were found to be more susceptible to overall burnout when their work schedules were irregular, their hours were lengthy, they were required to work overtime, and they were sleepy. Peterson et al. (2019) emphasize that police officers who work frequently long shifts and are required to perform overtime are more prone to experience emotional weariness. Moreover, depersonalization was linked to police officers who worked night shifts more than those who did not. Compared to irregular work schedules, fixed work schedules were linked to depersonalization and emotional weariness (Peterson et al., 2019).

2.6 Job context

The term "job context" refers to organizational stressors, which include co-worker interactions and bureaucracy, among other traits of the organization and human behaviour that cause stress (Violanti et al., 2017). Violanti et al. (2017) further emphasize that insufficient or subpar equipment, a dearth of social support, work-family conflict, job insecurity, high job demand, and little workplace control are additional organizational stressors that police officers face. Poor mental and physical health as well as morbidity as determined by a doctor were all linked to these stressors (Violanti et al., 2017).

Mushwana et al. (2019) propose that organizational stressors that influence police officers include, but are not limited to, killing someone while performing their duties, witnessing the death of a fellow cop while performing their duties, and not receiving enough support from management. Family pressure at home, poor counselling services, and a lack of social and emotional support will all make this worse (Mushwana et al., 2019).

2.7 Consequences of work-related stress

Stress at work can cause psychological suffering, mental sickness, and physical illness. A variety of work-related stressors can lead to stress at work when individuals try to handle their

obligations, tasks, or other pressures associated with their jobs and encounter difficulties, strain, anxiety, or concern in the process (Bhui, Dinos, Galant-Miecznikowsa, de Jongh & Stansfeld, 2016). Galanis et al. (2021) emphasize that stress at work results in lower output and higher absenteeism, as well as higher medical and health care expenses because there are more people seeking treatment for mental health issues.

Numerous studies show that police officers who suffer from psychological issues like stress or PTSD are more likely to have elevated cholesterol. Mona et al. (2019) state that these psychological issues may contribute to additional health concerns like diabetes mellitus and hypertension. Nonetheless, additional research indicates that stress at work may contribute to psychological suffering, mental disease, and physical sickness (Bhui et al., 2016).

According to the results of a study done in Tanzania, police officers who had been in the force for five to fourteen years as well as those who felt they had little social support; were more likely than their peers to experience depression. The Study conducted among police professionals in China and Italy have indicated that a longer duration of exposure to operational and organizational stressors significantly predicts the degree of depression (Njiro et al., 2021). Due to their increased exposure to violent and extreme situations, police officers working in big cities were shown to have greater levels of stress and PTSD, according to a systematic analysis that looked into the risk factors for stress among police officers (Galanis et al., 2021).

Officers with high levels of stress are more prone to experience marital problems and to stop participating in family activities. Police officers who work rotating shifts frequently have restless nights, disturbed family lives due to working on holidays, and strained relationships (Violanti et al., 2017). Research conducted in New Zealand and other European nations indicates that being exposed to traumatic experiences raises the risk of developing anxiety, depression, and psychological distress. There has also been evidence of a positive correlation between symptoms of distress and exposure to violence at work (Violanti et al., 2017).

One known source of stress in law enforcement is the working environment. The working conditions in law enforcement are more stressful and potentially fatal than in most other

industries. Basic workplace stressors include inadequate equipment, unequal promotion possibilities, bureaucratic and authoritative systems, and poor departmental assistance (Kara et al., 2015).

Although stress is a prevalent issue for all police organizations, the causes of stress vary because police surroundings vary as well. Although the tasks performed by police are the same worldwide, not all countries will have the same stress levels or pressures. According to a South African study, some police stressors include seeing criminals go free, having inadequate or low-quality equipment, and receiving inadequate pay (Kara et al., 2015). Numerous researches came to the conclusion that police personnel may experience harmful physiological and psychological reactions as a result of organizational pressures, including cardiovascular diseases (Violanti et al., 2017).

2.8 Management of work-related stress

Reducing workplace stress can be achieved by making adjustments to work environments that are less stressful or unhelpful to good coping. This will make it easier for people who are struggling to cope with situations that they cannot alter to do so (Lazarus, 2020). Finding stressful individual or group relationships in the workplace and attempting to modify them for the person and group based on relational discoveries is another strategy for lowering stress levels in the workplace (Lazarus, 2020).

In addition, work-related stress can be managed through primary interventions which try to stop the causes of stress; secondary interventions which lessen the intensity or duration of symptoms and tertiary or reactive interventions which maximize the functioning and offer rehabilitation to people with long-term medical conditions, can also be used to manage stress. When necessary, the combination of these coping mechanisms will help police personnel manage stress (Bhui et al., 2016).

Police educators are needed to empower police officers, at the beginning of their career, on the health realities of chronic exposure to traumatic events they may come across in their line of

duty and provide positive skills and resilience to that effect. This should be incorporated in the Police training curriculum and it will help in breaking barriers such as stigma against seeking mental health treatment (Papazoglou & Andersen, 2014). Cieslak et al (2020) is also of the view that training and workshops should be conducted to empower police officers on effective ways of coping with stress. Agolla (2009) states that stress is unavoidable in the police workplace; yet the police department ought to frequently hold stress-reduction training to assist officers in managing the demands of their jobs. Galanis et al. (2021) further argue that maintaining the wellbeing and promoting the health of police officers depend on ongoing mental health assessments and health surveillance. To avoid sickness and improve quality of life, it is essential to identify high-risk police personnel early and conduct proper screening for mental health issues (Galanis et al., 2021).

Brooks, Rubin & Greenberg (2019) argue that managing traumatic stress in the workplace should include ongoing monitoring of staff wellbeing and the use of informal peer support programmes as first line interventions. There is also a need for post-incident managerial workshops to educate managers about barriers to help-seeking and practical advice for how to reduce stigma related to mental health (Brooks et al., 2019).

2.9 Conclusion

There is limited literature on this topic, more especially in South Africa. This has made it difficult for the researcher to draw inferences from previous studies that have been conducted. There is a need for more studies to be conducted in South Africa, and this study will serve as one of the studies to close the identified gap.

It is evident that work-related stress has a huge negative impact on police officers and there is an urgent need for interventions to address these stressors. There is a need to promote and strengthen both reactive and proactive programmes on mental health issues. The management should provide sufficient financial and human resources for efficient and effective implementation of these programmes.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter covers aims, objectives, research question, research setting, study design, study population and its inclusion and exclusion criteria, sampling size and procedure, data collection and procedure, data analysis, validity and reliability of the study, generalizability, limitations of the study, and ethical considerations.

3.2 Aim

The study aimed to determine risk factors associated with stress among employees of the South African Police Service in a selected district in Limpopo Province.

3.3 Objectives

- To determine the risk factors associated with work-related stress among employees of the South African Police Service in a selected district in Limpopo Province.
- To assess whether there are any differences in work-related stress levels among male and female police officers of the South African Police Service, in a selected district in Limpopo Province.
- To compare work-related stress levels among various ranks in the South African Police Service in a selected district in Limpopo Province.
- To assess whether there are any differences in work-related stress levels among employees based in urban and rural police stations in a selected district in Limpopo Province.

3.4 Research question

What are the risk factors associated with work-related stress among employees of the South African Police Service (SAPS)?

3.5 Research setting

SAPS is a government department that reports to the Department of Safety, Security and Liaison. Limpopo is South Africa's northernmost province which shares borders with Mozambique, Zimbabwe and Botswana. There are 18,000 SAPS employees in Limpopo Province and 1,600 of them are based in the district in which this study was conducted. The researcher conducted the study in twenty police stations and ten units in the selected district of Limpopo Province, spread across urban and rural settings. The researcher is one of the professional team members rendering services at this selected district. This research will serve as a need analysis and will assist in identifying gaps and interventions to that effect.

3.6 Study design

Since data for this study was gathered all at once, a cross-sectional analytical research method was adopted (Levin, 2006). In order to ascertain the prevalence of the outcome of interest for the subgroup within the population at a specific time point, this research design allowed examination of the subgroups within the population with regard to an outcome and a set of risk factors (Levin, 2006). The researcher was also able to look at relationships between risk factors and the desired outcome by using a cross-sectional research design. Cause and effect could not be established because there could be another variable that might have caused the outcome (Levin, 2006).

It has been demonstrated that this research design is simple, rapid, and affordable to carry out. In order to determine which risk factors were dominant and which factors were associated with these risk factors, as well as how many employees of the South African Police Service had observed or been exposed to a particular risk factor, quantitative methodology was utilized (Bonita, Beaglehole & Kjellström, 2006).

3.7 Study population

The population of interest for this study was current permanent employees of Limpopo South African Police Service (SAPS) in this particular district from various ranks, both males and females, from all racial groupings employed in rural and urban areas, with or without

disabilities, who were between the ages of 18 to 65 years. The participants were employees who have been employed for a minimum period of a year.

Inclusion criteria:

- Current permanent employees of Limpopo South African Police Service (SAPS) in this particular district from various zones and ranks.
- Males and females from all racial groupings employed in rural and urban areas.
- Participants with disabilities.
- Participants between the ages of 18 to 65 years.
- Participants employed for a minimum period of a year.

Exclusion criteria:

- Permanent employees of the South African Police Service (SAPS) who have been employed for less than a period of one year.
- Employees working outside this particular district.
- Contractors and temporary employees such as interns.
- Employees with vision impairment were excluded from the study as the questionnaire was not converted into braille.
- Pensioners and other former employees were another group of people who were excluded from the study.

3.8 Sampling, sample size and procedure

The chosen district had 1600 employees who are based at police stations and other SAPS units. The sample size calculator used derived from Calculator.net and the formula used was $Z\text{-Score}^2$ x StdDev x (1-StdDev) / $(\text{confidence interval})^2$ (Singh, Yadav, Sharma & Bhadwaj, 2022). The sample size was worked out on the confidence level of 95%, a population size of 1600, margin error of 5%, which gave an ideal sample of 310 participants. Errors are inevitable; hence only 5% of the margin error was allowed. Assuming that participants may withdraw from the study

at any time, 10% of 310, which is 31, was added to the sample of 310, which made a final sample of 341 (Which was about 21% of the total population) (Singh et al., 2022).

Participants with over one year of working experience were called to the boardroom by the commander to be briefed by the researcher, before the collection of data. The researcher introduced herself, outlined the purpose of the study and explored the issue of voluntarism, consent and confidentiality. Both Police Act and Public Service Act members were sampled. The researcher used systematic sampling where participants were allocated numbers from 1 to 5, and every 5^{th} person in the population was selected to build a sample systematically (Creswell, 2014). Systematic sampling was suitable for this study as it was simple to conduct and easy to understand. It was also easy to conduct systematic sampling because the size of the population was already known and served as a starting point (Creswell, 2014).

The proposed sample size of 341 was not reached, instead only 228 participants completed the study. Two hundred and forty participants from this particular district took part in the study but only 228 completed the study, which is 67% response rate of respondents who participated in the study. Five percent (n=11) participants withdrew from the study due to a work-related emergency that needed their attention and they had to leave in order to attend to the incident. One participant (n=1), ≤1% started crying whilst completing the questionnaire, it seems as if the content of the questionnaire had triggered some emotions. She then asked to withdraw from the study and was allowed to do so. The researcher referred her to a psychologist. As a result, 12 questionnaires were excluded due to missing data on other variables.

The emergency nature of some SAPS units made it difficult for the researcher to collect data at those units. Subsequent appointments to collect data at some of these emergency units did not bear fruit, the environment proved not to be conducive for collection of data on several occasions, hence the initial proposed sample was not reached. Emergency units were the least conducive environment for this study to be conducted as the employees had to withdraw from the study in order to attend to work-related emergencies.

Police officers also informed the researcher that they did not want to take part in the study for fear of victimization by their commanders. It is alleged that some commanders discouraged participants from taking part in the study as their abuse of power will be exposed, and participants obliged to their commanders for fear of victimization. This has happened even though the researcher emphasized the issue of privacy and confidentiality during the briefing sessions conducted prior collection of data.

3.9 Data collection and procedure

The questionnaire was pre-tested on a group of SAPS peer educators to test its feasibility and identify errors for correction. During pre-testing, it was discovered that two important variables were omitted, that is the variable on the participants' geographical area (whether it is urban or rural) and an indication of the zone where the participants are working. The selected district is divided into four zones (Zone A, B, C and D), and the zones have different population sizes as well as the number of police stations. This implies that employees from various zones might experience different organizational stressors. These two variables which were previously omitted, were later added to the questionnaire.

SAPS boardrooms were used for the pre-test and the actual study, in order to administer the questionnaire and to ensure privacy and confidentiality. Sampling was done only on the participants who showed interest in participating in the study. Some participants used the boardroom to complete the questionnaire, whilst others used their offices and returned the questionnaires to the researcher after completion.

Data was collected during weekdays to allow both day and night shift staff to participate in the study. Weekends and public holidays were excluded due to the unavailability of most of the population of interest (Varkevisser, Pathmanathan & Brownlee, 2003). The questionnaire took about 30 minutes to complete.

The researcher visited different stations and units to collect data manually, as most Police officers do not have access to emails. Data was collected from February to June

2023. Participants were asked the same questions in the same order (Robson & McCartan, 2016). Questions were clear, concise, easy to understand and unambiguous. The questions had a logical flow, starting with simple questions like an introduction, initial screening of respondents, warm-up questions and transitioning into more detailed and more difficult questions and farewell (Creswell, 2014).

The researcher was responsible for issuing out blank questionnaires to participants and collection of completed questionnaires. Data was collected through a standardized questionnaire, which was self-administered by participants and collected by the researcher immediately after completion. Participants were given a maximum of thirty minutes to complete the questionnaire, and on average most participants spent twenty minutes or less in completing the questionnaire.

A self-administered questionnaire by participants was adapted from the one previously used by other researchers, on studies related to stress. It was divided into various sections which included demographic information, geographical area, the zone where participants are working at, gender, age, rank, role, responsibility, component, and type of disability, if there is any.

3.10 Data analysis

Data was arranged into meaningful order to make it easier to understand, analyze and visualize immediately after its collection using the numbering system (0 to 228) before it could be processed. Data was checked and cleaned to ensure its completeness and completed questionnaires were checked thoroughly to avoid missing data. Twelve questionnaires were excluded from further analysis due to missing data. Before and during data processing, the information was cleaned and verified again for completeness and internal consistency (Varkevisser et al., 2003). The researcher manually entered the data from the questionnaires into the excel sheet and later exported the data onto the STATA software package version 11.0.

Data was categorized according to different variables. 19 variables were loaded on a software package for analysis using descriptive statistics and frequency tables. Each category of

variables was coded for easy reference (Varkevisser et al., 2003). Data analysis was done by interpreting frequencies, proportions, tables and graphs that describe the data. Frequency counts were used to determine the frequencies for various variables. Cross tabulations were used to determine risk factors which resulted in certain health conditions (Varkevisser et al., 2003). In this study, the Fischer's exact test was used to determine whether or not there are statistically significant differences in the responses from various categories of respondents to a certain question. When analyzing survey answer data, the use of cross-tabulations showed frequency and proportion of replies by different response groups.

3.11 Validity and reliability of the study

The degree to which a concept is precisely quantified in a quantitative investigation is known as validity (Heale & Twycross, 2015). The validity of the study was ensured by the reduction or prevention of selection bias; hence a systematic sampling was used. The target population and sampling frame was defined. The researcher recruited a larger sample to account for withdrawals; hence the original sample was increased by 10% (from 310 to 341) to account for such instances, even though at the end only 228 participants completed the study.

The researcher ensured the use of a standardized questionnaire and prevented a response bias by ensuring confidentiality and interviewing respondents in a private area. The pre-test was conducted, and its feedback and recommendations implemented. The researcher used the same instrument for pre-test and post-test measures. Clear, simple and comprehensible language was used to ease the cognitive burden for respondents. The questions had a logical flow, starting with simple questions and transitioning into more detailed and complex questions and farewell.

Reliability is a measure of quality in a quantitative study or the accuracy of an instrument (Heale & Twycross, 2015). The questionnaire was piloted. There were sufficient questions to determine risk factors associated with stress among police officers. Questions were asked in a way that minimised psychological discomfort, even though the questionnaire triggered the emotions of one participant who ended up withdrawing from the study. The environment where the research took place was calm, conducive and user-friendly.

3.12 Generalizability

Drawing broad conclusions from specific examples and inferring something about the unseen based on the seen phenomenon is known as generalization (Polit & Beck, 2010). The study included a large sample of participants from both rural and urban work settings, members employed on Police Act and Public Service Act. Hence, the findings of this study may be generalizable and applied to members of SAPS in other districts and Provinces in South Africa with the same characteristics in order to develop mental health promotion and prevention interventions. Generalization has been widely acknowledged as a quality standard in quantitative research, hence it is suitable for this study.

3.13 Limitations of the study

The use of self-administered questionnaires in data collection led to a significant number of missing data due to incomplete responses. However, self-administered questionnaires by participants were considered a preferred method as it gave participants privacy and freedom when expressing their feelings.

Braille transcription software was not used on the questionnaire to convert text characters, words, punctuation and document layout to correspond with braille character equivalents. This was considered a limitation as participants with visual impairment were excluded from the study.

Recall bias was a limitation as not every participant was able to remember information with accuracy when completing the questionnaire. Due to the nature of the study design, no cause-and-effect relationship was established between the risk factors of stress and health conditions experienced by participants due to stress. Blood pressure and other related health screenings could have been conducted as part of gathering data to determine health conditions of participants due to stress, if another study design had been used, in order to determine the cause-and-effect relationship.

Administering health screening was not done considering the shorter time allocated for the completion of this mini thesis and the cost implications for the actual health screening. Employing the service of another service provider for health screenings was impossible as it would amount to breach of contractual agreement with the SAPS Health Risk Manager who is currently rendering the same service. Using the appointed Health Risk Manager was not going to be possible as the researcher started to collect data post the screening events.

Lack of resources such as computers, work emails and fax machines were considered a limitation, as participants were to be given questionnaires and completed them at their own pace and email or fax them back to the researcher. The researcher was also not in a position to distribute the questionnaires via emails, as most of the Police officers are doing fieldwork and do not have access to emails.

Some of the emergency units were excluded from the study due to the emergency nature of these units. This was considered a limitation as 11 participants from these units did not complete the study, as they were called out to attend work-related emergencies. Hence, they had to withdraw in the middle of the study. Their questionnaires were excluded due to missing data and further attempts by the researcher to secure another appointment failed.

Some Police officers reported that they do not want to take part in the study for fear of victimization by their commanders. It was reported that some commanders discouraged participants to take part in the study as their abuse of power would be exposed, and participants obliged to please the commander for fear of victimization. This was considered a limitation as some participants were not free to participate in the study.

There are fewer studies conducted on work-related stress amongst Police officers in South African Police Service, and this is considered a limitation as there were insufficient inferences to draw from the previous studies conducted. Hence, there is a dire need to conduct further research in this area.

3.14 Ethical considerations

Ethical considerations were applied in this study in order to protect the dignity, rights and welfare of study participants. This also ensured that appropriate ethical standards were upheld. Permission to conduct the study was requested from the University of the Western Cape (UWC) Biomedical Research Ethics Committee (BMREC) and approval was granted on 2022.12.12 with reference BM22/10/14, SAPS National Office approval was granted on 2022.12.15 with reference 3/34/2, SAPS Limpopo Provincial office approval was granted on 2023.01.16 with reference 2/1/2/1(202200017). The researcher emailed the UWC, SAPS National and Provincial office approvals to the local SAPS sites where the study was conducted and made appointments for briefing sessions and collection of data. The final confirmation of appointments with the local sites was done telephonically. Individual consent was obtained from participants. Taking part in the study was on a voluntary basis and participants were informed of their right to withdraw before and during the study.

Participants' data was kept anonymous and confidential, as they were allocated numbers as a form of identification. All data collected was kept confidential in order to comply with the Protection of Personal Information Act 4 of 2013. The Act sets out the minimum standards regarding accessing and processing of any personal information belonging to another person. The Act defines processing as collecting, receiving, recording, organizing, retrieving or the use, distribution or sharing of any such information (Protection of Personal Information Act 4, 2013).

Electronic data was password protected and manual data kept in lockable cabinets. The findings of the study will be shared with participants and SAPS Research unit for purposes of further research, informing policy and developing interventions for the identified needs of employees without identifying particulars of participants. The researcher will destroy data after five years of the study being conducted, through shredding, then cross shredding, pulping and pulverizing.

One participant became emotional while completing the questionnaire and withdrew from the study as per her request. After a brief interview, the researcher referred the participant for

psychological assistance through SAPS Employee Health and Wellness. She went for two sessions and decided to use her own private Psychologist. The researcher is still making follow-ups with the said participant, and she reported that her condition is stable and she is still undergoing therapy.

Chapter 4: Results

4. 0 Introduction

This chapter presents the findings of the study on risk factors associated with work-related stress among employees of the South African Police Service in Limpopo Province, at a selected district. These findings include participants' socio-demographic characteristics, feelings about their jobs, levels and duration of job stress, stress related symptoms and what participants like about their jobs. Fischer's exact test was used to compare work-related stress between male and female participants, participants from various ranks and participants based in rural and urban stations. Furthermore, bivariate and multivariate regression for anxiety, depression and stress was done.

4.1 Socio-demographic characteristics of study participants

Table 1 below presents the socio-demographic characteristics of the study participants which include location, gender, age, job rank, job role, department/unit and disability status of participants.

There rural and urban areas had similar numbers of participants, 51% and 49% respectively. However, in terms of gender, the females were higher in number (56%) as compared to their male peers (38%). 6% of participants identified themselves as 'other' gender. 39% of participants were between the ages of 31-39, 30% (50-59), 21% (31-39), 6% (60-65) and 4% (18-30) years of age.

Data on job rank revealed that most of the participants were Police Act members at 67% (n=152), which was made up of 15% Sergeants, 14% Warrant officers, 10% Captains, 9% Lieutenant Colonels, 8% Constables, 6% Colonels, 3% Brigadiers while Generals were 2%. Public Service Act members accounted for 33% (n=76) of the participants.

The majority of the employees (51%) were operational police officers versus 11% non-

operational police officers and 38% support staff. The majority of participants were from Support units (38%), 25% from visible policing, 9% from Crime Intelligence, 8% from Employee health & Wellness, 7% from Tactical Response Team, 6% from public order policing, while 7% were from other units. A large percentage of the participants reported not having any disability (83%) while 12% reported that they had a disability. About 4% did not want to answer this question.

Table 1: Socio-demographic characteristics of the participants

Variables	**Number (Percentage %)**
Location	
Rural	117 (51%)
Urban	111 (49%)
Gender	
Female	127 (56%)
Male	87 (38%)
Other	14 (6%)
Age Range	
18 - 30 years of age	9 (4%)
31 - 39 years of age	48 (21%)
40 - 49 years of age	90 (39%)
50 - 59 years of age	68 (30%)
60 - 65 years of age	13 (6%)
Job Rank	

General	4 (2%)
Brigadier	6 (3%)
Colonel	14 (6%)
Lieutenant Colonel	21 (9%)
Captain	23 (10%)
Warrant Officer	31 (14%)
Sergeant	34 (15%)
Constable	19 (8%)
Public Service Act Member	76 (33%)
Role	
Operational Police Officer	117 (51%)
Non-operational police officer	24 (11%)
Support Staff	87 (38%)
Department/Unit	
Crime Intelligence	20 (9%)
Crime prevention unit	1 (0.44%)
Employee Health & Wellness	18 (8%)
Other, Detectives	4 (1.75%)
Ports of entry	4 (1.75%)
Protection security services	2 (0.88%)

Public Order Policing	13 (6%)
Supply chain management	1 (0.44%)
Support	86 (38%)
Tactical Response Team	15 (7%)
Visible Policing	58 (25%)
Other	4 (1.75%)
Other, court	2 (0.88%)
Disability status	
No	192 (84%)
Yes	28 (12%)
Do not want to answer	8 (4%)

4.2 Participants feelings about their jobs

Information was collected on participants' feelings about their jobs. Table 2 presents information on participants' feelings about their jobs where several variables were assessed. Corresponding responses were observed between the frequency of job stress and having a hard time relaxing, as well as working a manageable number of hours and the appropriate amount of work assigned. The other corresponding responses were observed between enough time to complete work and rest outside work, enough time for hobbies and good work-life balance, as well as achievable targets and satisfaction with the pace of work. This shows a significant statistical association among these variables. It was also observed that most participants do not have all what they need to perform well at work as compared to 31% who reported that they sometimes do have what they need to perform well at work, 26% reported that they always have what they need, 24% very often have what they need, 10% rarely have what they need,

whereas 9% reported that they never had what they need to perform well at work.

Table 2: Participants' feelings about their jobs

	Independent stress factors				
Variable	**Always**	**Very often**	**Sometimes**	**Rarely**	**Never**
Frequency of job stress	21 (9%)	55 (24%)	88 (39%)	30 (13%)	34 (15%)
Have a hard time relaxing	22 (10%)	62 (27%)	83 (36%)	39 (17%)	22 (10%)
Working manageable number of hours	53 (23%)	41 (18%)	23 (10%)	63 (28%)	48 (21%)
Appropriate amount of work assigned	53 (23%)	41 (18%)	23 (10%)	63 (28%)	48 (21%)
Variable	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
Level of interest in the work	21 (9%)	10 (4%)	55 (24%)	90 (39%)	52 (23%)
Enough time to complete work	31 (14%)	35 (15%)	77 (34%)	49 (21%)	36 (16%)
Rest outside work	31 (14%)	34 (15%)	79 (35%)	54 (24%)	30 (13%)
Enough time for hobbies	38 (17%)	46 (20%)	82 (36%)	40 (20%)	22 (10%)
Good work life balance	30 (13%)	38 (17%)	81 (36%)	49 (21%)	30 (13%)
A say in the work assigned to me	104 (46%)	57 (25%)	36 (16%)	23 (10%)	8 (4%)

Achievable targets	21 (9%)	36 (16%)	102 (45%)	45 (20%)	24 (11%)
Satisfied with the pace of work	28 (12%)	49 (21%)	90 (39%)	36 (16%)	25 (11%)
Have what I need to perform well at work	60 (26%)	55 (24%)	70 (31%)	23 (10%)	20 (9%)

4.3 Reported levels of job stress among participants

Table 3 presents reported levels of stress. The levels of stress were categorized into no stress, mild, moderate, severe and extreme. Seventy-four percent (74%) of participants reported some form of stress, mild (33%), moderate (24%), severe (10%) and extreme (7%). Whereas 26% of participants experienced no stress.

Table 3: Reported levels of job stress among participants

Variable	**Number (Percentage %)**
No stress	59 (26%)
Mild	76 (33%)
Moderate	54 (24%)
Severe	23 (10%)
Extreme	16 (7%)

4.4 Reported duration of job stress among participants

Table 4 presents the reported duration of job stress. The duration was divided into four categories. Majority of participants, at 45%, have experienced stress for a period of one year and more. Twenty seven percent of the study participants never experienced stress. However, participants who experienced stress for a period of 1-3 months, 4-6 months and 6 months to 1 year were ≤ 13% each.

Table 4: Reported duration of job stress among participants

Variables	**Number (Percentage %)**
Never	62 (27%)
1 - 3 months	16 (7%)
4 - 6 months	19 (8%)
6 months - 1 year	29 (13%)
More than 1 year	102 (45%)

4.5 Participants' reported stress-related symptoms

Table 5 presents experiences of job-related stress symptoms, namely, frequent headaches, prolonged exhaustion, irritability, loss of appetite, inability to sleep, anxiety, depression and others. There were corresponding responses between frequent headaches and prolonged exhaustion, irritability and inability to sleep, as well as anxiety and depression. This shows a significant statistical association between these variables. The majority of participants, 78%, never experienced loss of appetite. No other stress-related symptoms were observed.

Table 5: Participants experiences of job stress-related symptoms

	Independent stress factors				
Variable	**Always**	**Very often**	**Sometimes**	**Rarely**	**Never**
Frequent headaches	54 (24%)	32 (14%)	33 (14%)	18 (8%)	91 (40%)
Prolonged exhaustion	51 (22%)	34 (15%)	28 (12%)	17 (7%)	98 (43%)
Irritability	38 (17%)	25 (11%)	31 (14%)	9 (4%)	125 (55%)
Loss of appetite	12 (5%)	11 (5%)	20 (9%)	8 (4%)	177 (78%)
Inability to sleep	33 (15%)	14 (6%)	20 (9%)	8 (4%)	153 (67%)
Anxiety	32 (14%)	18 (8%)	16 (7%)	10 (4%)	152 (67%)
Depression	24 (11%)	11 (5%)	14 (6%)	2 (1%)	177 (78%)
Other	No response	No response	No response	No response	No response

4.6 What participants like about their job

Table 6 presents what participants like about their jobs. The majority of participants (31%) like performing duties related to combating crime, while 22% like performing counseling and mentoring. Thirteen percent like other duties which were less than 1% each (They like to be treated equally, gain experience, work with service providers, like development of human resource, to be allocated with reasonable workload and so forth). Ten percent of participants did not like anything about their job. This may imply that they might be misplaced or demoralized, thus making employees susceptible to work-related stress.

Table 6: What participants like about their job

Variable	Number (Percentage %)
Combating crime	71 (31%)
Counseling & mentoring	51 (22%)
Other	30 (13%)
I do not like anything about my job	23 (10%)
Performing administrative duties	20 (9%)
Occupational health & safety	15 (7%)
Passion & Fulfilment	10 (4%)
Fringe benefits	8 (4%)

4.7 Comparing work-related stress between male and female police service employees

Table 7 presents a summary of Fischer's exact test on work-related stress between male and female police service employees. The detailed Fischer's exact test is in appendix 1. The significant p-value level is <0.05. The significant p-values are shown in bold. There is a significant statistical association in the manageable number of hours among the gender groups ($p = 0.03$). However, there was no significant association in gender groups concerning the appropriate amount of work, interesting work, enough time to complete the work, rest outside work, and enough time for hobbies ($p > 0.05$).

There was also a significant association in terms of achievable targets and satisfaction with the

pace of work (p-value=0.002, 0.03 respectively) among the gender groups. The association of good work-life balance, a say in the work assigned to them, and resources were not statistically significant (p-value > 0.05) among the gender groups. There was an anxiety association in gender groups which was statistically significant, however, there was no significant association in terms of stress, prolonged exhaustion, irritability, depression, and loss of appetite. Female participants were negatively affected by work-related stress, more than other gender groups. Fifty-six percent of female participants experienced extreme stress, whereas males reported 31% and other genders 13%.

Table 7: Work-related stress between male and female participants

Variable name	**Fischer's exact test result**
Manageable number of hours	**0.03**
Appropriate amount of work	0.73
Level of interest in the work	0.36
Enough time to complete the work	0.179
Rest outside work	0.18
Enough time for hobbies	0.38
Good work life balance	0.29
A say in the work assigned to me	0.09
Achievable targets	**0.002**
Satisfied with the pace of work	**0.03**

Resources	0.29
Stress	0.59
Prolonged exhaustion	0.85
Irritability	0.61
Anxiety	**0.01**
Depression	0.08
Loss of appetite	0.13

4.8 Comparing work-related stress among various ranks of police service employees

Table 8 presents a summary of Fischer's exact test on work-related stress among various ranks of police service employees. The detailed Fischer's exact test is in appendix 8. The significant p-value level is <0.05. The significant p-values are shown in bold. There was a statistical association between work-related stress and manageable number of hours on various ranks (p-value = 0.001), enough time to complete the work (p-value = 0.002), rest outside work (p-value = 0.02), a say in the work assigned to them (p-value = 0.02), satisfaction with the pace of work (p-value = 0.02), resources (p-value = 0.04), prolonged exhaustion (p-value = 0.0001), irritability (0.01) and inability to sleep (p-value = 0.002). However, there was a borderline significant association with enough time for hobbies among various ranks (p-value = 0.05). There was no statistically significant association concerning the appropriate amount of work assigned, interesting work, good work-life balance, loss of appetite, stress, anxiety, and depression among various ranks (all p-values > 0.05). Participants in rank 1 experienced more stress than those in other ranks. Fifty percent of participants in rank 1 (Constable, Sergeant and

warrant officer) experienced extreme stress, followed by rank 2 with 13% (Captain), rank 3 with 6% (Lieutenant Colonel and Colonel) and rank 4 with 31% (Brigadier and General).

Table 8: Work-related stress among various ranks of the participants

Variable name	Fischer's exact test result
Manageable number of hours	**0.001**
Appropriate amount of work	0.08
Level of interest in the work	0.09
Enough time to complete the work	**0.002**
Rest outside work	**0.02**
Enough time for hobbies	**0.05**
Good work life balance	0.36
A say in the work assigned to me	**0.02**
Achievable targets	**0.001**
Satisfied with the pace of work	**0.02**
Resources	**0.04**
Stress	0.38
Prolonged exhaustion	**0.0001**

Irritability	**0.01**
Inability to sleep	**0.002**
Anxiety	**0.016**
Depression	0.43
Loss of appetite	0.29

4.9 Comparing work-related stressors among employees based in rural and urban stations

Table 9 presents a summary of Fischer's exact test on work-related stressors among employees based in rural and urban stations. The detailed Fischer's test is in appendix 9. The significant p-value level at < 0.05 and significant p-values are shown in bold.

A statistically significant association was observed in the following variables among the rural and urban participants; the manageable number of hours, (p-value = 0.02), interesting work, (p-value = 0.01), enough time to complete the work, p-value (0.04), rest outside work, p-value (0.04), good work-life balance, (p–value = 0.02), achievable targets (p-value = 0.04), resources, (p-value = 0.001), stress (p-value = 0.02) and anxiety (p-value = 0.02). The association of appropriate amount of work and irritability reached borderline significance of p-value = 0.05 among the rural and urban participants respectively. Other variables were not statistically significant (p-value > 0.05). Employees based in urban stations (75%) experienced more work-related stressors than those based in rural stations (25%).

Table 9: Work-related stress among employees based in rural and urban stations

Variable name	Fischer's exact test result
Manageable number of hours	**0.02**
Appropriate amount of work	0.05
Level of interest in the work	0.01
Enough time to complete the work	**0.04**
Rest outside work	**0.04**
Enough time for hobbies	0.29
Good work life balance	0.02
A say in the work assigned to me	0.18
Achievable targets	0.04
Satisfied with the pace of work	0.26
Resources	**0.0001**
Stress	**0.02**
Prolonged exhaustion	0.13
Irritability	0.05

Anxiety	0.02
Inability to sleep	**0.03**
Depression	0.34
Loss of appetite	**0.40**
Frequency of headaches	**0.11**

4.10 Bivariate and multivariate regression of anxiety with work-related risk factors

Table 10 presents bivariate and multivariate regression of anxiety (Dependent variable). On the bivariate association, there were significant statistical associations between anxiety (dependent variable) and independent variables, appropriate work (p-value = 0.0000), enough time to complete the work (p-value = 0.002), rest outside work (p-value = 0.003), achievable targets (p-value = 0.02), satisfied with the pace of work (p-value = 0.007), having what they need to perform the job well (p-value = 0.007), prolonged exhaustion (p-value = 0.000), irritability (p-value = 0.000), loss of appetite (p-value = 0.000), and inability to sleep (p-value = 0.000).

Individually (through bivariate regression), independent variables affect the anxiety status negatively in the sense that when work is not appropriate among the workers, the time is not enough to complete the work, there is lack of rest outside work, work targets not being achieved, employees not satisfied with the pace of work, lack what they need to accomplish the work, having prolonged exhaustion, irritated, losing appetite, and unable to sleep well, as these factors shows an increase in anxiety among the employees.

On the multivariate regression, only three variables were statistically significantly related, which are, appropriate work, (p-value = 0.007), irritability, (p-value = 0.000) and inability to sleep, (p-value = 0.000). As a way of controlling for confounding in biostatistics and

epidemiological studies, all variables that reached a statistical significance of p-value<0.05 in bivariate regression analysis, were included in a multivariate regression analysis modeling. Hence, it was observed that participants who found their work to be inappropriate, were irritable, lacked sleep, and were highly anxious according to multivariate regression.

Table 10: Bivariate and multivariate regression of anxiety with work-related risk factors

	Bivariate regression			**Multivariate regression**		
Independent variables	**Unadjusted β-Coefficient**	**P-Value**	**95% CI**	**Unadjusted β-Coefficient**	**P-Value**	**95% CI**
Age	-0.04	0.47	-0.18			
Manageable number of hours	0.13	0.08	-0.02 - 0.27			
Appropriate work	0.24	0.000	0.12 – 0.36	0.13	0.007	0.04 – 0.23
Level of Interest in the work	0.10	0.23	-0.68 – 0.27			
Enough time to complete the work	0.20	0.002	0.08 – 0.33	-0.002	0.97	-0.13 – 0.13
Rest outside work	0.19	0.003	0.07 – 0.32	0.05	0.46	-0.08 – 0.18

Enough time for hobbies	0.10	0.10	-0.02 – 0.22			
Good work life balance	0.08	0.22	-0.04 – 0.21			
A say in the work assigned to me	0.05	0.49	-0.09 – 0.19			
Achievable targets	0.16	0.02	0.03 – 0.28	-0.04	0.43	-0.15 – 0.06
Satisfied with the pace of work	0.17	0.007	0.05 – 0.29	-0.002	0.96	-0.10 – 0.09
Resources	0.16	**0.007**	0.04 – 0.28			
Hard time relaxation	-0.08	0.34	-0.24 – 0.09			
Prolonged exhaustion	0.32	0.000	0.21 – 0.43	0.05	0.34	-0.05 – 0.14
Irritability	0.52	0.000	0.42 – 0.62	0.26	0.000	0.15 – 0.36
Loss of appetite	0.56	0.000	0.44 – 0.67	0.11	0.08	-0.02 – 0.24
Inability to sleep	0.66	0.000	0.56 – 0.76	0.41	0.000	0.27 – 0.53

4.11 Bivariate and multiple regression of depression with work-related risk factors

Table 11 presents bivariate and multivariate regression of depression (dependent variable). On the bivariate association, there was significant positive statistical associations of depression (dependent variable) and independent variables, appropriate work, (p-value = 0.0001), enough time to complete the work (p-value = 0.03), rest outside work (p-value = 0.001), enough time for hobbies (p-value = 0.04), good work life balance, (p-value = 0.04), achievable targets (p-value = 0.002), satisfied with the pace of work (p-value = 0.005), resources (p-value = 0.05, border-line), prolonged exhaustion (p-value = 0.000), irritability (p-value = 0.000), loss of appetite (p-value = 0.000), and inability to sleep (p-value = 0.000). In multivariate regression, only four variables were statistically significantly related. These variables were namely; appropriate work, (p-value = 0.02), rest outside work, (p-value = 0.04) irritability, (p-value = 0.04) and loss of appetite, (p-value = 0.0001).

There is a positive significant association between depression (dependent variable) and other independent variables. Bivariate regression shows that participants who do not have appropriate work assigned to them, not having enough time to complete the work, not resting outside work, not having enough time for hobbies, not having good work balance, not having achievable targets, not satisfied with the pace of work, not having what they need to perform the job, with prolonged exhaustion, will experience consequences of depression such as irritability, loss of appetite and inability to sleep.

Furthermore, on the multivariate regression there was a positive association between depression (dependent variable) and other independent variables. It shows that depression is statistically significantly associated with assignments of inappropriate work, not having enough time to complete the work, not having enough rest outside work, irritability and loss of appetite. This implies that participants who were not assigned appropriate work, without enough time to complete the work, and without enough rest outside work, will experience consequences of depression such as irritability and loss of appetite.

Table 11: Bivariate and multiple regression of depression with work-related risk factors

	Bivariate regression			**Multivariate regression**		
Independent variables	**Unadjusted β-Coefficient**	**P-Value**	**95% CI**	**Adjusted β-Coefficient**	**P-Value**	**95% CI**
Age	-0.02	0.78	-0.13 – 0.09			
Manageable number of hours	0.13	0.08	-0.01 – 0.27			
Appropriate work	0.19	**0.001**	0.08 – 0.29	0.11	**0.02**	0.01 – 0.20
The level of interest in the work	0.12	0.1	-0.02 – 0.27			
Enough time to complete the work	0.12	**0.03**	0.01 – 0.23	-0.13	**0.05**	-0.25 – 0.003
Rest outside work	0.18	**0.001**	0.07 – 0.29	0.14	**0.04**	0.001 – 0.28
Enough time for hobbies	0.10	**0.04**	0.0008 – 0.21	-0.04	0.54	-0.16 – 0.09
Good work life balance	0.11	**0.04**	0.001 – 0.22	0.004	0.95	-0.13 – 0.14

A say in the work assigned to me	0.04	0.49	-0.07 – 0.16			
Achievable targets	0.17	**0.002**	0.06 – 0.28	0.03	0.56	-0.07 – 0.14
Satisfied with the pace of work	0.15	**0.005**	0.04 – 0.25	0.04	0.43	-0.06 – 0.14
Resources	0.09	**0.05**	-0.005 – 0.20	0.02	0.71	-0.07 – 0.10
Hard time relaxation	-0.03	0.71	-0.17 – 0.11			
Prolonged exhaustion	0.21	**0.000**	0.12 – 0.31	0.03	0.53	-0.06 – 0.12
Irritability	0.33	**0.000**	0.24 – 0.42	0.11	**0.04**	0.005 – 0.21
Loss of appetite	0.51	**0.000**	0.41 – 0.60	0.37	**0.0001**	0.25 – 0.51
Inability to sleep	0.41	**0.000**	0.31 - 0.51	0.07	0.29	-0.06 – 0.19

4.12 Bivariate and multiple regression of stress with work-related risk factors

Table 12 presents bivariate and multiple regression of stress (dependent variable). On the

bivariate association, there were significant associations with depression and independent variables, appropriate work, (p-value = 0.0001), enough time to complete the work (p-value = 0.0001), rest outside work (p-value = 0.0001), enough time for hobbies (p-value = 0.0001), good work life balance, (p-value = 0.0001), achievable targets (p-value = 0.0001), satisfied with the pace of work (p-value = 0.0001), resources (p-value = 0.001), prolonged exhaustion (p-value = 0.0001), irritability (p-value = 0.0001), loss of appetite (p-value = 0.0001), and inability to sleep (p-value = 0.0001). In multivariate regression, only one variable was statistically significantly associated, which was achievable targets (p-value = 0.01).

Bivariate regression shows a positive statistically significant association between stress (dependent variable) and other independent variables. Participants experienced stress as a result of un manageable number of hours, inappropriate work assigned to them, insufficient time to complete the work, no rest outside work, insufficient time for hobbies, poor good work balance, unachievable targets, unsatisfied with the pace of work, they do not have what they need to perform the job, prolonged exhaustion, irritability, loss of appetite and inability to sleep. However, on the multivariate regression a positive association was found between stress and one independent variable, namely achievable targets. Targets which are not achievable, expose participants to stress. This stress can be experienced as a result of high job demands and pressures which challenge participants' ability to cope.

Table 12: Bivariate and multiple regression of stress with work related risk factors

	Bivariate regression			**Multivariate regression**		
Independent variables	**Unadjusted β-Coefficient**	**P-Value**	**95% CI**	**Adjusted β-Coefficient**	**P-Value**	**95% CI**
Age	0.008	0.88	-0.10 – 0.12			
Manageable	0.23	**0.000**	0.12 –	0.11	0.09	-0.02 –

number of hours			0.34			0.24
Appropriate work	0.23	**0.000**	0.13 – 0.33	0.04	0.48	-0.08 - 0.17
Level of interest in the work	0.06	0.41	-0.08 – 0.19			
Enough time to complete the work	0.19	**0.000**	0.09 – 0.30	-0.11	0.11	-0.24 – 0.02
Rest outside work	0.26	**0.000**	0.16 - 0.36	0.08	0.22	-0.05 – 0.23
Enough time for hobbies	0.24	**0.000**	0.15 – 0.34	**Omitted due to collinearity**		
Good work life balance	0.24	**0.000**	0.14 – 0.34	0.09	0.15	-0.03 – 0.21
A say in the work assigned to me	0.02	0.68	-0.09 – 0.14			
Achievable targets	0.30	**0.000**	0.20 – 0.39	0.14	**0.01**	0.03 – 0.24
Satisfied with the pace of work	0.25	**0.000**	0.16 – 0.34	0.08	0.15	-0.02 – 0.18
Resources	0.16	**0.001**	0.07 – 0.25	0.06	0.18	-0.03 – 0.15

Hard time relaxation	0.07	0.32	-0.07 - 0.20			
Prolonged exhaustion	0.20	**0.000**	0.11 – 0.29	0.06	0.19	0.03- 0.16
Irritability	0.22	**0.000**	0.14 – 0.32	0.08	0.15	-0.03 – 0.18
Loss of appetite	0.27	**0.000**	0.17 – 0.37	0.12	0.07	-0.01 – 0.25
Inability to sleep	0.26	**0.000**	0.16 – 0.37	0.05	0.41	-0.07 – 0.18

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter discusses the findings of the study on the risk factors associated with work-related stress among employees of the South African Police Service (SAPS) at a district in Limpopo Province, South Africa: An analytical Cross-sectional study. In this chapter, the socio-demographic characteristics of participants, work-related stress among the SAPS employees, implications of the findings of this study and limitations of the study will be discussed.

The study aimed at determining the risk factors associated with stress among employees of the South African Police Service in a selected district, in Limpopo Province. The response rate for this study was 67% (n=228 participants) out of a proposed sample of 341 participants.

5.2 Socio-demographic characteristics

In this study female participants were well represented at 56%, males 38% and other 6%. However, in another cross-sectional study conducted among police officers in the South African Police Service in Tzaneen (Limpopo Province), it was reported that female officers were under-represented (Mushwana et al., 2019). This study further revealed that both females and males from all age groups and ranks have experienced work-related stress in their lifetime. Whereas the study conducted by Mushwana et al. 2019 reported emotional exhaustion across all age groups. Constables experienced less stress than other ranks, as they have worked in the police for a shorter period than other officers and have experienced less exposure to stressors.

5.3 Work-related stress among police officers

The findings of this study indicated that participants experienced stress, depression and anxiety. These findings are supported by another study which indicated that police are exposed to high levels of stress, which exposes them to mental health disorders such as post-traumatic stress disorder, anxiety, depression, suicidal thoughts and behaviours (Galanis et al., 2021). The study also reported that police are exposed to work-related stressors such as violence, job pressure

and demands, long working hours, burnout, fatigue and so forth. These lead to an increased risk of poor mental health and other negative consequences such as hypertension, smoking, alcohol and drug abuse, decreased quality of life and so forth (Galanis et al, 2021).

Another study which supports the findings of this study was conducted among police officers in New Zealand. The study reported that police officers are exposed to traumatic events that increase their likelihood to develop psychological distress (Violanti, 2017). Police who were exposed to traumatic incidents have also been found to have higher levels of depression and anxiety. It was also reported that there is a positive relationship between exposure to work-related violence, and symptoms of distress (Violanti, 2017).

A study conducted among police officers in the United Kingdom reported that, every one in five police officers who have been exposed to a work-related traumatic event have experienced post-traumatic stress symptoms subsequently (Santa Maria et al., 2020). Prolonged exposure to work-related stress is associated with a variety of adverse health outcomes for police officers such as increased risks for cardiovascular disease and higher rates of psychological distress compared to other working populations (Santa Maria et al., 2020).

5.4 Implications of the findings of this study

The South African Police Service is offering programmes which address work-related stressors. Some of these programmes which are offered to employees are sexual harassment, dynamics of anger, personal work life balance, managing stress effectively, relationship building in the workplace, choose life, initial debriefing, mental health awareness, team development and so forth. Most of the employee health and wellness practitioners are not trained on these programmes, hence they are struggling with implementation thereof. Failure to implement these programmes efficiently, negatively impacts the service being rendered and the employees need for good mental health. Furthermore, there is no regular in-service training or continuous professional development of employee health and wellness practitioners.

There is a need analysis tool that is used to identify the challenges of employees, and how they can be addressed. Hence, there is a need for employee health and wellness practitioners to be capacitated on various programmes, in order for them to be able to address the identified needs appropriately.

The findings of this study will assist the management of the South African Police Service, to identify job related stressors within the organization as a baseline. The management should ensure that all the employee health and wellness practitioners are trained on all programmes before they can render services to employees. It is therefore important for the SAPS management to review the current programmes in order to address the risk factors identified in this study, and reduce the negative impact of work-related stress on the employees.

Effective and efficient implementation of these programs will reduce the incidence and prevalence of non-communicable conditions such as depression, post-traumatic stress disorder and so forth.

5.5 Limitations of the study

The researcher did not collect information to determine whether the participants are using any alcohol and drugs. This information is very important to determine whether participants were at a risk of developing alcohol and drug addiction, as a result of work-related stress. Furthermore, participants were not screened for cholesterol and blood glucose. The health screenings were not conducted as a result of the shorter time allocated to complete this mini-thesis. Furthermore, the cost-implications of administering the health screenings and hiring of health professionals who will be conducting the screening, as well as contractual obligations between SAPS and the Health risk manager made it impossible for the researcher to conduct health screenings on participants.

The necessary health screenings could have been conducted as part of gathering data to determine health conditions of participants due to stress, if another study design had been used, in order to determine the cause-and-effect relationship. These are some of the elements reported

to be associated with stress, depression and anxiety (Qi et al, 2023).

Recall bias was a limitation as not every participant was able to remember information with accuracy when completing the questionnaire. Due to the nature of the study design, no cause-and-effect relationship was established between the risk factors of stress and health conditions experienced by participants due to stress.

Lack of resources such as computers, work emails and fax machines were considered a limitation, as participants were to be given questionnaires and completed them at their own pace and email or fax them back to the researcher. The researcher was also not in a position to distribute the questionnaires via emails, as most employees are doing fieldwork and do not have access to emails.

Some of the emergency units were excluded from the study due to the emergency nature of these units. This was considered a limitation as 11 participants from these units did not complete the study, as they were called out to attend to work-related emergencies. Hence, they had to withdraw in the middle of the study. Their questionnaires were excluded due to missing data and further attempts by the researcher to secure another appointment failed. At times the researcher will secure an appointment for a briefing and it will later be cancelled due to unavailability of participants.

Some Police officers reported that they do not want to take part in the study for fear of victimization by their commanders. It was reported that some commanders discouraged participants from taking part in the study. This was considered a limitation as some participants were not free to participate in the study, despite the fact that the researcher emphasized the principle of confidentiality and privacy.

There are fewer studies conducted on work-related stress amongst Police officers in the South African Police Service, and this is considered a limitation as there were insufficient inferences

to draw from the previous studies conducted. Hence, there is a dire need to conduct further research in this area.

Fischer's exact test was used to analyze data. It shows association between or among the variables through their respective variable cells, but one of its limitations is that the researcher is not in a position to know exactly which variable is contributing more or less towards the significance of the association.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter summarizes the main findings of this study and outlines recommendations based on the study findings in terms of policy and practice as well as suggested areas of further research.

6.2 Conclusion

This study investigated risk factors associated with work-related stress among employees of the South African Police Service in Limpopo Province, at a selected district. The study revealed that participants experienced stress, anxiety and depression as a result of work-related stress.

Some of the variables that were statistically significant and were regarded as symptoms of work-related stress among participants were frequent headaches, prolonged exhaustion, irritability, inability to sleep, anxiety and depression. Both male and female participants experienced anxiety (56% female and 31% male), depression (10% female and male) and stress (56% female and male) alike.

According to the researcher, it is evident that there are risk factors associated with work-related stress. Police officers are one of the working populations which is exposed to more stress due to the traumatic nature of their work. This study is one of the few studies conducted in this area in South Africa, hence its findings will contribute to literature and a body of knowledge in work-related stress among police officers. This work will contribute to an understanding of policing as a profession and be a base for further studies needed in this area.

6.3 RECOMMENDATIONS

6.3.1 Recommendations for future study/research.

This study was conducted in a selected district of Limpopo Province. Similar studies are needed in all the provinces in order to obtain the experiences of police officers in South Africa as a whole that will be compared with those of other countries.

- Longitudinal studies with larger sample size are needed to increase the literature and to create awareness with regard to work- related stress among employees of the South African Police Service (SAPS).
- Further research is needed to determine the association between work-related stress, staff turnover, as well as the impact of workplace programs that are aimed at reducing work-related stress.

6.3.2 Recommendations for practice

- The SAPS working environment needs to be restructured, in order to prevent risk factors of work-related stress and to reduce the severity and duration of symptoms. All employees who were involved in traumatic events should be referred to the Employee health and wellness unit within a period of 72 hours, to reduce the prevalence and incidence of post-traumatic stress disorder (PTSD).
- SAPS Management should be trained on stress management and referral system to Employee health and wellness, to spot the signs of stressed-out employees and refer to the relevant unit as soon as possible.
- Awareness of the destigmatization of mental health conditions should be intensified.
- Gender sensitive and rank specific interventions need to be intensified. For instance, interventions which address gender-based violence and commanders' programmes.
- There is a need for 100% coverage of onsite health screening and testing in order to reduce the incidence and prevalence of chronic health conditions that arise as a result of work-related stress. Furthermore, this will result in a healthy and productive workforce, as employees will be more engaged in their roles, offering a happier and more efficient environment to work in as well as better service delivery.
- Continuous professional development for Employee health and wellness professionals is needed, in order for them to have updated information to address work-related stressors.
- There should be an extensive marketing drive by Employee health and wellness professionals to ensure that all employees are aware of the services rendered by this unit, as far as stress management is concerned.
- Continuous monitoring and evaluation of health programmes to ensure that the programmes are on track and achieving their objectives.

- Provision of resources and budget for restructuring of the working environment, training of managers, continuous professional development, marketing and implementation of health programmes.

6.3.3 Policy recommendations

- It is recommended that the policy on continuous professional development be evaluated and reviewed to ensure that all employees are audited for compliance; and those who do not comply be provided with the relevant in-service training and workshops to bridge the gap.
- The Employee health and wellness framework be adhered to, to ensure that the SAPS implements the 4th pillar on Health and productivity programmes which deals with communicable diseases. Currently, the SAPS complies with three pillars only (Wellness, Occupational health and safety (OHS), as well as Safety, Health, Environment, Risk and Quality (SHERQ).
- Review and implementation of monitoring and evaluation policy that is in place currently.

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7.1 APPENDIX 1: UWC Mini-thesis ethics

12 December 2022

Mrs MW Mokoena
School of Public Health
Faculty of Community and Health Sciences

BMREC Reference Number: BM22/10/14

Project Title: Risk factors associated with work related stress among employees of the South African Police Service (SAPS) at a district in Limpopo Province, South Africa: An analytical cross-sectional study

Approval Period: **12 December 2022 – 11 December 2025**

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above-mentioned research project and the requested amendment to the project.

Any further amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report annually by 30 November for the duration of the project.

For permission to conduct research using student and/or staff data or to distribute research surveys/questionnaires please apply via: https://sites.google.com/uwc.ac.za/permissionresearch/home

The permission letter must then be submitted to BMREC for record keeping purposes.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

Director: Research Development
University of the Western Cape
Private Bag X 17
Bellville 7535
Republic of South Africa
Tel: +27 21 959 4111
Email: research-ethics@uwc.ac.za

7.2 APPENDIX 2: SAPS Approval

South African Police Service **Suid-Afrikaanse Polisie Diens**

Private Bag X 9428 Polokwane 0700 Fax No: 015 230 1023

Reference	2/1/2/1 (202200017)
Enquiries	Brig Mphahlele-Ngoveni Lt Col Mamabolo
Telephone	015 290 6099/6115
E-Mail	LIM:Prov-Head:OD & Strategic Management

THE DEPUTY PROVINCIAL COMMISSIONER
SOUTH AFRICAN POLICE SERVICE
SUPPORT SERVICES
LIMPOPO PROVINCE

Ms MW Mokoena
43 Jubilee Creek
Northview Estate
Bendor
0699

PERMISSION TO CONDUCT RESEARCH IN THE SOUTH AFRICAN POLICE SERVICE: UNIVERSITY OF WESTERN CAPE: MASTERS DEGREE: RISK FACTORS ASSOCIATED WITH WORK-RELATED STRESS AMONG EMPLOYEES OF THE SOUTH AFRICAN POLICE SERVICE AT A DISTRICT LEVEL IN LIMPOPO: AN ANALYTICAL CROSS-SECTIONAL STUDY: RESEARCHER: MW MOKOENA

Authority to conduct the above research Limpopo Province is hereby granted.

Crucial aspects to be followed are as follows:-

- The research will be done at your own cost;
- The research will be conducted without any disruption of official duties;
- The information provided to the researcher by the SAPS to be treated strictly as confidential as possible;
- Participation in the interviews to be done voluntarily so;
- SAPS expect you to donate an annotated copy of the research done for service improvement.

Hoping you will find everything in order.

ORIGINAL SIGNED **MAJOR GENERAL**
DEPUTY PROVINCIAL COMMISSIONER: SUPPORT SERVICES
LIMPOPO PROVINCE
HC MORAKALADI Date: 2023/01/16

7.3 APPENDIX 3: Consent form

UNIVERSITY OF THE WESTERN CAPE

UNIVERSITY of the WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21 959 2809 Fax: 27 21 959 2872

E-mail: soph-comm@uwc.ac.za

Title of Research Project: Risk factors associated with work-related stress among employees of the South African Police Service (SAPS) at a district in Limpopo Province, South Africa: An analytical cross-sectional study.

The study has been described to me in the language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

In terms of the requirements of the Protection of Personal Information Act (Act 4 of 2013), personal information will be collected and processed:

☐ I hereby give consent for my personal information to be collected, stored, processed and shared as described in the information sheet.

☐ I do not give consent for my personal information to be collected, stored, processed and shared as described in the information sheet.

Participant's name……..

Participant's signature……

Date……

7.4 APPENDIX 4: Information sheet

UNIVERSITY OF THE WESTERN CAPE

UNIVERSITY of the WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21 959 2809 Fax: 27 21 959 2872

E-mail: soph-comm@uwc.ac.za

INFORMATION SHEET

Project Title: Risk factors associated with work-related stress among employees of the South African Police Service (SAPS) at a district in Limpopo, South Africa: An Analytical cross-sectional study.

What is this study about?

This is a research project being conducted by **Mmanare Wilhelmina Mokoena** who is studying for a Master of Public Health at the University of the Western Cape. We are inviting you to participate in this research project because you are a permanent employee of the South African Police Service in Capricorn District, Limpopo Province, employed for a minimum of one year. The purpose of this research project is to determine risk factors associated with stress among members of the South African Police Service.

What will I be asked to do if I agree to participate?

You will be asked to answer questions about your identifying particulars such as age range, race, job rank, the component you are based at and job stressors. You will also be asked questions to determine whether you cope or do not cope with your workload. The study is conducted at all SAPS units and Police stations in Capricorn District. The participant will take twenty minutes or less to complete the questionnaire.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity and confidentiality. The questionnaire is anonymous and will not contain information that may personally identify you. To ensure your confidentiality, identification codes will be used on the data form, which will be stored in a lockable filing cabinet. No names of participants will be requested on the questionnaire. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

There may be some risks to participating in this research study. Some questions asked in the questionnaire might make participants relive their painful experiences and bring other psychological issues to the surface. All human interactions and talking about self or others carry some amount of risk. We will nevertheless minimize such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise, during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about risk factors associated with work-related stress among SAPS employees. We hope that, in the future, other people might benefit from this study through an improved understanding of these risk factors.

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or stop participating at any time, you will not be penalized or lose any benefits you otherwise qualify for.

How will the data be handled?

In terms of the requirements of the Protection of Personal Information Act (Act 4 of 2013), personal information will be collected and processed:

What type of personal information will be collected?

Only demographic information such as age range, race, job rank, the component you are based at and your opinion on work-related stress will be collected. No personal information that can reasonably ascertain the identity of a participant will be collected.

Who at UWC is responsible for collecting and storing my personal information?

The researcher Mmanare Wilhelmina Mokoena is responsible for collecting and storing participants' personal information.

Who will have access to my personal information outside of UWC?

South African Police Service regulations make it mandatory for researchers to handover the copy of their thesis, if they are conducting research in the South African Police Service (SAPS). As a result, the SAPS National office Research unit will be given a copy of this thesis.

How long will my personal information be stored?

Personal data will be stored for five years after the study has been completed.

How will my personal information be processed?

Data will be arranged into meaningful order to make it easier to understand, analyze and visualize immediately after its collection using the numbering system before it can be processed. Data will be checked in the field to ensure the completeness of data. Before and during data processing, the information will be verified again for completeness and internal consistency. Filled-in questionnaires will be checked thoroughly to avoid missing data. Questionnaires with a lot of missing data will be excluded from further analysis. Data processing will be done through STATA data analysis, version 11.0. Data will be categorized according to different variables. Each category of variables will be coded for easy reference.

Data analysis will be done by interpreting frequencies, proportions, tables and graphs that describe the data. Frequency counts will be used to determine the frequencies for various variables. Cross tabulations will be used to determine risk factors which resulted in certain health conditions.

What if I have questions?

This research is being conducted by Mmanare Wilhelmina Mokoena of the South African Police Service, who is a student at the University of the Western Cape. If you have any questions about the research study itself, please contact Mmanare Wilhelmina Mokoena at 06 Rhodesdrift Avenue, Bendor, Polokwane, 0825631844 or by email at mmanaremokoena@gmail.com. Should you have any questions regarding this study and your rights as a research participant, or if you wish to report any problems you have experienced related to the study, please contact:

Prof Uta Lehmann

Head of Department: School of Public Health

University of the Western Cape

Private Bag X17

Bellville 7535

ulehmann@uwc.ac.za

Prof Anthea Rhoda

Dean: Faculty of Community and Health Sciences

University of the Western Cape

Private Bag X17

Bellville 7535

chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Biomedical Research Ethics Committee.

Biomedical Research Ethics Committee

University of the Western Cape

Private Bag X17

Bellville

7535

Tel: 021 959 4111

Email: research-ethics@uwc.ac.za

REFERENCE NUMBER: BM22/10/14

7.5 APPENDIX 5: Questionnaire

QUESTIONNAIRE

Introduction:

I am **Mmanare Wilhemina Mokoena**, a student studying for the Master in Public Health at the University of the Western Cape. I am gathering information from members of the Limpopo South African Police Service (SAPS), Capricorn District between the ages of 18 to 65. I am trying to find out about risk factors associated with stress in the workplace. I would like to ask you some questions which will take about 20 minutes of your time. You may choose not to participate in this study. Whatever information you give will be kept confidential, and will not be shared with anyone else except for the improvement of the SAPS health and safety programmes. The information that will be collected will help SAPS to modify its programmes or develop new programmes to address the risk factors of work-related stress.

Kindly tick what is applicable to you:

✓ Do I have your permission to continue with questions? **Yes** …… **No** ……

✓ Geographical area that you are working at: **Rural…… Urban……. Other……..**

✓ Which zone are you working at: **A…… B…… C…… D……**

Date of Interview: ……

1. **What is your gender?**

a) Male

b) Female

c) Other

2. **Which age range do you belong to?**

a) 18 – 30 years of age

b) 31 - 39 years of age

c) 40 – 49 years of age

d) 50 – 59 years of age

e) 60 – 65 years of age

3. **What is your job rank?**

a) General

b) Brigadier

c) Colonel

d) Lieutenant Colonel

e) Captain

f) Warrant officer

g) Sergeant

h) Constable

i) Public Service Act (PSA)

4. **What is your role? (You can choose more than one category which best describes you).**

a) Operational Police officer

b) Non-operational Police Officer

c) Support staff

Other (Please specify): ……

5. **Which component do you belong to?**

a) Visible policing

b) Crime Intelligence (CI)

c) Tactical Response Team (TRT)

d) Employee Health and Wellness (EHW)

e) Public order policing (POP)

f) Support

g) Other (Please specify): ……

6. Which responsibility best describes you? Please tick more than one response if applicable.

a) Compliance officer

b) Support Head

c) Safety officer

d) Police Act member

e) Public service Act member

f) Trade union representative

g) Peer educator

h) Employee Health and Wellness

i) Other (Please specify): …….

7. Do you have any disability?

a) Yes

b) No

c) Do not want to answer

If your answer is yes, please specify the type of disability:

…….

8. How often do you feel stressed from your job?

Always		**Very often**		**Sometimes**		**Rarely**		**Never**	

9. How often do you have a hard time relaxing?

Always		Very often		Sometimes		Rarely		Never	

10. Please select how you feel about the following statements:

10.1 Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a) I work a manageable number of hours.					
b) I have an appropriate amount of work assigned to me.					
c) My work is interesting.					
d) I have enough time to complete my work.					
e) I have rest outside my work.					
10.2 Statement	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
a) I get enough time for my hobbies.					
b) I have a good work life balance.					

11. Please tell us more about how you feel about your work assignment:

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a) I have a say in the work assigned to me.					

b) The targets I am given are achievable.					
c) I am satisfied with the pace of my work.					
d) I have what I need to perform well at work.					

12. How would you rate the level of your job stress?

a) I do not experience stress from my work

b) Mild

c) Moderate

d) Severe

e) Extreme

13. How long have you been experiencing stress from work?

a) Never

b) 1 to 3 months

c) 4 to 6 months

d) 6 months to 1 year

e) More than 1 year

14. Please indicate how often you have experienced the following as a possible result of stress:

Statement	**Always**	**Very often**	**Sometimes**	**Rarely**	**Never**
a) Frequent headaches					
Statement	**Always**	**Very often**	**Sometimes**	**Rarely**	**Never**
b) Prolonged exhaustion					

c) Irritability					
d) Loss of appetite					
e) Inability to sleep					
f) Anxiety					
g) Depression					
h) Other (please specify):					

15. What do you like the most about your job?

……

……

……

16. What are the most stressful aspects of your job?

……

……

……

17. Considering your overall experience, how likely are you to recommend your family members or someone you respect for employment here using a scale of 1 to 10?

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

Very unlikely Very likely

The end, thank you for participating in this study

7..6 APPENDIX 6: Table 7 Fischer's Exact Test among male and female participants

Table 7: Differences in work-related stress among male and female participants

	Female	Male	Other	**Fischer's exact Test**
Manageable number of hours				
Agree	36 (62%)	17 (29%)	5 (9%)	**0.03**
Disagree	17 (43%)	20 (50%)	3 (8%)	
Neutral	24 (67%)	12 (33%)	0 (0%)	
Strongly agree	22 (73%)	8 (27%)	0 (0%)	
Strongly disagree	28 (44%)	30 (47%)	6 (9%)	
Appropriate amount of work				
Agree	23 (56%)	15 (37%)	3 (7%)	0.73
Disagree	22 (46%)	22 (46%)	4 (8%)	
Neutral	35 (56%)	23 (37%)	5 (8%)	
Strongly agree	31 (58%)	20 (38%)	2 (4%)	
Strongly disagree	16 (70%)	7 (30%)	0 (0%)	
Level of interest in the work				
Agree	10 (48%)	9 (43%)	2 (10%)	0.36
Disagree	6 (60%)	4 (40%)	0 (0%)	
Neutral	29 (53%)	22 (40%)	4 (7%)	
Strongly agree	47 (52%)	35 (39%)	8 (9%)	
Strongly disagree	35 (67%)	17 (33%)	0 (0%)	
Enough time to complete the work				

Agree	28 (57%)	19 (39%)	2 (4%)	0.179
Disagree	15 (43%)	18 (51%)	2 (6%)	
Neutral	43 (56%)	27 (35%)	7 (9%)	
Strongly agree	16 (52%)	15 (48%)	0 (0%)	
Strongly disagree	25 (69%)	8 (22%)	3 (8%)	
Rest outside work				
Agree	29 (54%)	23 (43%)	2 (4%)	0.18
Disagree	13 (38%)	19 (56%)	2 (6%)	
Neutral	46 (58%)	26 (33%)	7 (9%)	
Strongly agree	19 (63%)	11 (37%)	0 (0%)	
Strongly disagree	20 (65%)	8 (26%)	3 (10%)	
Enough time for hobbies				
Agree	19 (48%)	19 (48%)	2 (5%)	0.38
Disagree	21 (46%)	21 (46%)	4 (9%)	
Neutral	50 (61%)	27 (33%)	5 (6%)	
Strongly agree	12 (55%)	10 (45%)	0 (0%)	
Strongly disagree	25 (66%)	10 (26%)	3 (8%)	

Table 7: Differences in work-related stress among male and female participants (Continues)

	Female	Male	Other	Fischer's exact Test
Good work life balance				
Agree	28 (57%)	19 (39%)	2 (4%)	**0.29**
Disagree	16 (42%)	20 (53%)	2 (5%)	
Neutral	47 (58%)	28 (35%)	6 (7%)	
Strongly agree	18 (60%)	12 (40%)	0 (0%)	
Strongly disagree	18 (60%)	8 (27%)	4 (13%)	
A say in the work assigned to me				
Agree	18 (78%)	5 (22%)	0 (0%)	0.09
Disagree	31 (54%)	19 (33%)	7 (12%)	
Neutral	19 (53%)	16 (44%)	1 (3%)	
Strongly agree	7 (88%)	1 (13%)	0 (0%)	
Strongly disagree	52 (50%)	46 (44%)	6 (6%)	
Achievable targets				
Agree	33 (73%)	11 (24%)	1 (2%)	**0.002**
Disagree	11 (31%)	19 (53%)	6 (17%)	
Neutral	55 (54%)	41 (40%)	6 (6%)	
Strongly agree	12 (50%)	12 (50%)	0 (0%)	
Strongly disagree	16 (76%)	19 (4%)	1 (5%)	
Satisfied with the pace of work				

Agree	26 (72%)	6 (17%)	4 (11%)	**0.03**
Disagree	20 (41%)	24 (49%)	5 (10%)	
Neutral	50 (56%)	36 (40%)	4 (4%)	
Strongly agree	13 (52%)	12 (48%)	0 (0%)	
Strongly disagree	18 (64%)	9 (32%)	1 (4%)	
What they need to perform the job				
Agree	17 (74%)	6 (26%)	0 (0%)	0.29
Disagree	28 (51%)	22 (40%)	5 (9%)	
Neutral	39 (56%)	26 (37%)	5 (7%)	
Strongly agree	15 (75%)	5 (25%)	0 (0%)	
Strongly disagree	28 (47%)	28 (47%)	4 (7%)	

Table 7: Differences in work-related stress among male and female participants (Continues)

	Female	**Male**	**Other**	**Fischer's exact Test**
Stress				
Extreme	9 (56%)	5 (31%)	2 (13%)	**0.59**
I don't experience stress	35 (59%)	21 (36%)	3 (5%)	
Mild	41 (54%)	33 (43%)	3 (5%)	
Moderate	31 (57%)	18 (33%)	5 (9%)	
Severe	11 (48%)	10 (43%)	2 (9%)	
Prolonged exhaustion				
Always	25 (49%)	21 (41%)	5 (10%)	0.85

Never	56 (57%)	37 (38%)	5 (5%)	
Rarely	8 (47%)	8 (47%)	1 (6%)	
Sometimes	19 (68%)	8 (29%)	1 (4%)	
Very Often	19 (56%)	13 (38%)	2 (6%)	
Irritability				
Always	18 (47%)	16 (42%)	4 (11%)	0.61
Never	65 (52%)	52 (42%)	8 (6%)	
Rarely	7 (78%)	2 (22%)	0 (0%)	
Sometimes	20 (65%)	10 (32%)	1 (3%)	
Very often	17 (68%)	7 (28%)	1 (4%)	
Anxiety				
Always	13 (41%)	15 (47%)	4 (13%)	**0.01**
Never	84 (55%)	61 (40%)	7 (5%)	
Rarely	9 (90%)	1 (10%)	0 (0%)	
Sometimes	12 (75%)	1 (6%)	3 (19%)	
Very often	9 (50%)	9 (50%)	0 (0%)	
Depression				
Always	10 (42%)	10 (42%)	4 (17%)	0.08
Never	102 (58%)	68 (38%)	7 (4%)	
Rarely	2 (100%)	0 (0%)	0 (0%)	
Sometimes	7 (50%)	4 (29%)	3 (21%)	
Very often	6 (55%)	5 (45%)	0 (0%)	
Loss of appetite				
Always	5 (42%)	4 (33%)	3 (25%)	0.13
Never	97 (55%)	71 (40%)	9 (5%)	

Rarely	5 (63%)	2 (25%)	1 (13%)	
Sometimes	15 (75%)	5 (25%)	0 (0%)	
Very often	4(45%)	4 (45%)	1 (9%)	

7.7 APPENDIX 7: Table 8 Fischer's Exact Test among various ranks

Table 8: Work-related stress among various ranks of participants

	Rank 1	Rank 2	Rank 3	Rank4	Fischer's exact Test
Manageable number of hours					
Agree	16(31%)	15 (26%)	0(0%)	25 (43%)	**0.001**
Disagree	17 (43%)	15 (38%)	1 (3%)	7 (18%)	
Neutral	18 (50%)	8 (22%)	2 (6%)	8 (22%)	
Strongly agree	12 (40%)	1 (3%)	0 (0%)	17 (57%)	
Strongly disagree	19 (30%)	19 (30%)	7 (11%)	19 (30%)	
Appropriate amount of work assigned					
Agree	19 (36%)	11 (21%)	2 (4%)	21 (40%)	0.08
Disagree	19 (40%)	17 (35%)	1 (2%)	11 (23%)	
Neutral	25 (40%)	17 (27%)	5 (8%)	16 (25%)	
Strongly agree	8 (35%)	1 (4%)	0 (0%)	14 (61%)	
Strongly disagree	13 (32%)	12 (29%)	2 (5%)	14 (34%)	
Level of interest in the work					
Agree	30 (33%)	31 (34%)	4 (4%)	25 (28%)	0.09
Disagree	4 (40%)	2 (20%)	0 (0%)	4 (40%)	
Neutral	24 (44%)	13 (24%)	4 (7%)	14 (25%)	
Strongly agree	17 (33%)	11 (21%)	0 (0%)	24 (46%)	
Strongly disagree	9 (43%)	1 (5%)	2 (10%)	9 (43%)	
Enough to complete the work					
Agree	13 (27%)	14 (29%)	0 (0%)	22 (45%)	**0.002**

Disagree	17 (49%)	12 (34%)	0 (0%)	6 (17%)	
Neutral	27 (35%)	23 (30%)	7 (9%)	20 (26%)	
Strongly agree	16 (52%)	1 (3%)	0 (0%)	14 (45%)	
Strongly disagree	11 (31%)	8 (22%)	3 (8%)	14 (39%)	
Rest outside work					
Agree	16 (30%)	16 (30%)	0 (0%)	22 (41%)	**0.02**
Disagree	16 (47%)	10 (29%)	1 (3%)	7 (21%)	
Neutral	29 (37%)	24 (30%)	6 (8%)	20 (25%)	
Strongly agree	14 (47%)	1 (3%)	0 (0%)	15 (50%)	
Strongly disagree	9 (29%)	7 (23%)	3 (10%)	12 (39%)	
Enough time for hobbies					
Agree	14 (35%)	16 (40%)	0 (0%)	10 (25%)	**0.05**
Disagree	21 (46%)	9 (20%)	2 (4%)	14 (30%)	
Neutral	27 (33%)	25 (30%)	6 (7%)	24 (29%)	
Strongly agree	10 (45%)	1 (5%)	0 (0%)	11 (50%)	
Strongly disagree	12 (32%)	7 (18%)	2 (5%)	17 (45%)	

Table 8: Work-related stress level among various ranks of participants Continues

	Rank 1	Rank 2	Rank 3	Rank 4	Fischer's exact Test
Good work life balance					
Agree	15 (31%)	18 (37%)	1 (2%)	15 (31%)	0.36
Disagree	17 (45%)	10 (26%)	2 (5%)	9 (24%)	
Neutral	29 (36%)	20 (25%)	5 (6%)	27 (33%)	
Strongly agree	14 (47%)	3 (10%)	0 (0%)	13 (43%)	
Strongly disagree	9 (30%)	7 (23%)	2 (7%)	12 (40%)	
A say in the work assigned to me					
Agree	8 (35%)	4 (17%)	0 (0%)	11 (48%)	**0.02**
Disagree	20 (35%)	26 (46%)	1 (2%)	10 (18%)	
Neutral	15 (42%)	9 (25%)	2 (6%)	10 (28%)	
Strongly agree	4 (50%)	1 (13%)	0 (0%)	3 (38%)	
Strongly disagree	37 (36%)	18 (17%)	7 (7%)	42 (40%)	
Achievable targets					
Agree	13 (29%)	8 (18%)	0 (0%)	24 (53%)	**0.001**
Disagree	21 (58%)	9 (25%)	1 (3%)	5 (14%)	
Neutral	31 (30%)	34 (33%)	7 (7%)	30 (29%)	
Strongly agree	13 (54%)	1 (4%)	0 (0%)	10 (42%)	
Strongly disagree	6 (29%)	6 (29%)	2 (10%)	7 (33%)	
Satisfied with the pace of work					

Agree	15 (42%)	3 (8%)	2 (6%)	16 (44%)	**0.02**
Disagree	22 (45%)	14 (29%)	2 (4%)	11 (22%)	
Neutral	26 (29%)	33 (37%)	5 (6%)	26 (29%)	
Strongly agree	12 (48%)	1 (4%)	0 (0%)	12 (48%)	
Strongly disagree	9 (32%)	7 (25%)	1 (4%)	11 (39%)	
What they need to perform the job					
Agree	8 (35%)	2 (9%)	0 (0%)	13 (57%)	**0.04**
Disagree	16 (29%)	19 (35%)	4 (7%)	16 (29%)	
Neutral	26 (37%)	22 (31%)	4 (6%)	18 (26%)	
Strongly agree	7 (35%)	2 (10%)	0 (0%)	11 (55%)	
Strongly disagree	27 (45%)	13 (22%)	2 (3%)	18 (30%)	
Stress					
Extreme	8 (50%)	2 (13%)	1 (6%)	5 (31%)	0.38
I don't experience stress	25 (42%)	11 (19%)	0 (0%)	23 (39%)	
Mild	27 (36%)	18 (24%)	4 (5%)	27 (36%)	
Moderate	16 (30%)	20 (37%)	3 (6%)	15 (28%)	
Severe	8 (35%)	7 (30%)	2 (9%)	6 (26%)	

Table 8 Work-related stress level among various ranks of participants Continues

	Rank 1	Rank 2	Rank 3	Rank 4	Fischer's exact Test
Prolonged exhaustion					
Always	17 (33%)	24 (47%)	5 (10%)	5 (10%)	**0.0001**
Never	39 (40%)	18 (18%)	3 (3%)	38 (39%)	
Rarely	7 (41%)	1 (6%)	0 (0%)	9 (53%)	
Sometimes	11 (39%)	2 (7%)	0 (0%)	15 (54%)	
Very often	10 (29%)	13 (38%)	2 (6%)	9 (26%)	
Irritability					
Always	11 (29%)	16 (42%)	4 (11%)	7 (18%)	**0.01**
Never	50 (40%)	30 (24%)	6 (5%)	39 (31%)	
Rarely	4 (44%)	2 (22%)	0 (0%)	19 (61%)	
Sometimes	9 (29%)	3 (10%)	0 (0%)	19 (61%)	
Very often	10 (40%)	7 (28%)	0 (0%)	8 (32%)	
Loss of appetite					
Always	4 (33%)	3 (25%)	2 (17%)	3 (25%)	0.29
Never	69 (39%)	46 (26%)	8 (5%)	54 (31%)	
Rarely	2 (25%)	3 (38%)	0 (0%)	3 (38%)	

Sometimes	4 (20%)	4 (20%)	0 (0%)	12 (60%)	
Very often	5 (45%)	2 (18%)	0 (0%)	4 (36%)	
Inability to sleep					
Always	12 (36%)	12 (36%)	3 (9%)	6 (18%)	**0.002**
Never	56 (37%)	41 (27%)	7 (5%)	49 (32%)	
Rarely	5 (63%)	2 (25%)	0 (0%)	1 (13%)	
Sometimes	3 (15%)	1 (5%)	0 (0%)	16 (80%)	
Very often	8 (57%)	2 (14%)	0 (0%)	4 (29%)	
Anxiety					
Always	10 (31%)	11 (34%)	2 (6%)	9 (28%)	0.16
Never	59 (39%)	40 (26%)	8 (5%)	45 (30%)	
Rarely	3 (30%)	1 (10%)	0 (0%)	6 (60%)	
Sometimes	6 (38%)	0 (0%)	0 (0%)	10 (63%)	
Very often	6 (33%)	6 (33%)	0 (0%)	6 (33%)	
Depression					
Always	8 (33%)	6 (25%)	3 (13%)	7 (29%)	0.43
Never	65 (37%)	48 (27%)	7 (4%)	57 (32%)	
Rarely	0 (0%)	0 (0%)	0 (0%)	2 (100%)	
Sometimes	7 (50%)	1 (7%)	0 (0%)	6 (43%)	
Very often	4 (36%)	3 (27%)	0 (0%)	4 (36%)	

7.8 APPENDIX 8: Table 9 Fischer's' Exact Test among employees based in urban and rural stations

Table 9: Differences in work-related stressors among employees based in rural and urban stations

Manageable number of hours			
	Rural	Urban	Fischer's exact test
Agree	30 (52%)	28 (48%)	**0.02**
Disagree	22 (55%)	18 (45%)	
Neutral	20 (56%)	16 (44%)	
Strongly agree	7 (23%)	23 (77%)	
Strongly disagree	38 (59%)	26 (41%)	
Appropriate amount of work assigned			
Agree	28 (53%)	25 (47%)	0.05
Disagree	25 (52%)	23 (48%)	
Neutral	39 (62%)	24 (38%)	
Strongly agree	6 (26%)	17 (74%)	
Strongly disagree	19 (46%)	22 (54%)	
Level of interest in the work			
Agree	53 (59%)	37 (41%)	0.01
Disagree	4 (40%)	6 (60%)	
Neutral	34 (62%)	21 (38%)	
Strongly agree	16 (31%)	36(69%)	
Strongly disagree	10 (48%)	11 (52%)	
Enough time to complete work			

Agree	29 (54%)	25 (46%)	**0.04**
Disagree	16 (47%)	18 (53%)	
Neutral	49 (62%)	30 (38%)	
Strongly agree	9 (30%)	21 (70%)	
Strongly disagree	14 (45%)	17 (55%)	
Rest outside work			
Agree	29 (54%)	25 (46%)	**0.04**
Disagree	16 (47%)	18 (53%)	
Neutral	49 (62%)	30 (38%)	
Strongly agree	9 (30%)	21 (70%)	
Strongly disagree	14 (45%)	17 (55%)	

Table 9: Differences in work-related stressors among employees based in rural and urban stations, **Continues**

Enough time for hobbies			
	Rural	Urban	Fischer's exact test
Agree	22 (55%)	18 (45%)	0.29
Disagree	22 (48%)	24 (52%)	
Neutral	47 (57%)	35 (43%)	
Strongly agree	7 (32%)	15 (68%)	
Strongly disagree	19 (50%)	19 (50%)	
Good work life balance			
Agree	23 (47%)	26 (53%)	0.02
Disagree	21 (55%)	17 (45%)	
Neutral	50 (62%)	31 (38%)	
Strongly agree	8 (27%)	22 (73%)	
Strongly disagree	15 (50%)	15 (50%)	
A say in the work assigned to me			
Agree	9 (39%)	14 (61%)	0.18
Disagree	28 (49%)	29 (51%)	
Neutral	17 (47%)	19 (53%)	
Strongly agree	2 (25%)	6 (75%)	
Strongly disagree	61 (59%)	43 (41%)	
Achievable targets			
Agree	23 (51%)	22 (49%)	0.04
Disagree	22 (61%)	14 (39%)	

Neutral	58 (57%)	44 (43%)	
Strongly agree	7 (29%)	17 (71%)	
Strongly disagree	7 (33%)	14 (67%)	
Satisfied with the pace of work			
Agree	19 (53%)	17 (47%)	0.26
Disagree	27 (55%)	22 (45%)	
Neutral	51 (57%)	39 (43%)	
Strongly agree	9 (36%)	16 (64%)	
Strongly disagree	11 (39%)	17 (61%)	

Table 9: Differences in work-related stressors among employees based in rural and urban stations, **Continues**

What is needed to perform the job			
	Rural	Urban	Fischer's exact test
Agree	5 (22%)	18 (78%)	**0.0001**
Disagree	27 (49%)	28 (51%)	
Neutral	41 (59%)	29 (41%)	
Strongly agree	2 (10%)	18 (90%)	
Strongly disagree	42 (70%)	18 (30%)	
Stress			
Extreme	4 (25%)	12 (75%)	**0.02**
I don't experience stress	34 (58%)	25 (42%)	
Mild	34 (45%)	42 (55%)	

Moderate	35 (65%)	19 (35%)	
Severe	10 (43%)	13 (56%)	
Frequency of headaches			
Always	26 (48%)	28 (52%)	0.11
Never	54 (59%)	37 (41%)	
Rarely	8 (44%)	10 (56%)	
Sometimes	11 (33%)	22 (67%)	
Very often	18 (56%)	14 (44%)	
Prolonged exhaustion			
Always	24 (47%)	27 (53%)	0.13
Never	58 (59%)	40 (41%)	
Rarely	8 (47%)	9 (53%)	
Sometimes	9 (32%)	19 (68%)	
Very often	18 (53%)	16 (47%)	
Irritability			
Always	21 (55%)	17 (44%)	0.05
Never	70 (56%)	55 (44%)	
Rarely	1 (11%)	8 (89%)	
Sometimes	12 (39%)	19 (61%)	
Very often	13 (52%)	12 (48%)	

Table 9: Differences in work-related stressors among employees based in rural and urban stations, **Continues**

Loss of appetite			
	Rural	Urban	Fischer's exact test
Always	8 (67%)	4 (33%)	**0.40**
Never	90 (51%)	87 (49%	
Rarely	2 (25%)	6 (75%)	
Sometimes	10 (50%)	10 (50%)	
Very often	7 (64%)	4 (36%)	
Inability to sleep			
Always	16 (48%)	17 (51%)	**0.03**
Never	85 (56%)	68 (44%)	
Rarely	0 (0%)	8 (100%)	
Sometimes	8 (40%)	12 (60%)	
Very often	8 (57%)	6 (43%)	
Anxiety			
Always	16 (50%)	16 (50%)	0.02
Never	83 (55%)	69 (45%)	
Rarely	1 (10%)	9 (90%)	
Sometimes	5 (31%)	11 (69%)	
Very often	12 (67%)	6 (33%)	
Depression			
Always	12 (50%)	12 (50%)	0.34
Never	89 (50%)	88 (50%)	

Rarely	0 (0%)	2 (100%)	
Sometimes	10 (71%)	4 (29%)	
Very often	6 (55%)	5 (45%)	