The psychological effects of the COVID-19 pandemic on mental healthcare workers in South Africa.

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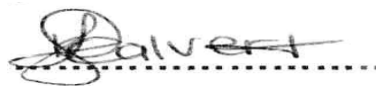
Plagiarism Declaration

I declare that this thesis, titled "*The psychological effects of the COVID-19 pandemic on mental healthcare workers in South Africa*" is my own work. It has not been submitted before for any degree or examination in any other university, and all the resources I have used or quoted have been indicated and acknowledged as complete references.



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Abstract

The COVID-19 pandemic has affected individuals both physically and mentally, and existing studies emphasise that mental healthcare workers are facing similar psychological struggles and are not immune to mental illness. However, limited research exists on the mental health effects of COVID-19 on mental healthcare workers, specifically those within the South African context. The present study aimed to address this gap within literature by investigating the psychological effects of COVID-19 on mental healthcare workers in South Africa. The objectives of the study included investigating: (i) the psychological effects of the pandemic on mental healthcare workers with regards to their levels of depression, anxiety, and loneliness; (ii) the association between fear of COVID-19 and specific psychological outcomes (i.e., depression, anxiety, and loneliness); (iii) the association between specific protective factors (i.e., resilience and social support) and psychological outcomes; and (iv) the moderating and mediating role of resilience and social support on psychological outcomes. The study used a cross-sectional research design, non-probability convenience sampling, and participants (N=259) were mental healthcare workers (i.e., clinical psychologists, counselling psychologists, counsellors, and social workers) who completed seven electronic self-report instruments. These included, a socio-demographic questionnaire, the Fear of COVID-19 Scale (FCV-19S), the Connor-Davidson Resilience Scale (CD-RISC-25), the Multidimensional Scale of Perceived Social Support (MSPSS), the UCLA Loneliness Scale, the Center for Epidemiological Studies-Depression Scale (CES-D), and the State-Trait Anxiety Inventory (STAI). The results showed that mental healthcare workers were experiencing lower levels of psychological distress (i.e., depression, anxiety, and loneliness) compared to other studies. The findings showed a significant relationship between COVID-19 fear and mental health outcomes (i.e., depression, anxiety, and loneliness), and a significant inverse association was found between resilience and social support and mental

health outcomes. The study found no moderating or mediating effects for resilience and social support relative to mental health outcomes. The study confirmed that the COVID-19 pandemic exhibited certain psychological effects on mental healthcare workers in South Africa.

Keywords: COVID-19, mental healthcare workers, mental health, resilience, social support, loneliness, anxiety, depression, fear of COVID-19, South Africa

List of Abbreviations

APA	American Psychiatric Association
BMREC	Biomedical Research Ethics Committee
CD-RISC-25	Connor-Davidson Resilience Scale
CES-D	Center for Epidemiological Studies-Depression Scale
COVID-19	Coronavirus Disease 2019
DSM-5	Diagnostic and Statistical Manual of Mental Disorders – 5
FAMSA	Family and Marriage Society of South Africa
FCV-19S	Fear of COVID-19 Scale
GAD	Generalised Anxiety Disorder
GBV	Gender-based Violence
HPCSA	Health Professions Council of South Africa
HSRC	Human Sciences Research Council
ICT	Information and Communications Technology
MHQ	Mental Health Quotient
MSPSS	Multidimensional Scale of Perceived Social Support
OCD	Obsessive-compulsive Disorder
PTSD	Post-traumatic Stress Disorder
SADAG	South African Depression and Anxiety Group
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus
SPSS-27	Statistical Package for the Social Sciences
STAI	State-Trait Anxiety Inventory
TB	Tuberculosis
UK	United Kingdom
US	United States
UWC	University of the Western Cape
WHO	World Health Organization

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Chapter One: Introduction

Background

The coronavirus disease 2019 (COVID-19) is a recently discovered infection that is caused by the severe acute respiratory syndrome coronavirus (SARS-CoV-2), and was discovered in Wuhan, China, during the latter part of 2019 (Luchetti et al., 2020; Serafini et al., 2020). COVID-19 is highly contagious and spreads via respiratory droplets produced when an infected person coughs, talks, or sneezes (Rodríguez-Rey et al., 2020). By the start of 2020, COVID-19 had spread exponentially around the world, resulting in a global pandemic (Mbunge, 2020). As of November 14, 2022, the World Health Organization (WHO, 2022b) reported 631,935,687 confirmed COVID-19 cases and 6,588,850 deaths. The number of confirmed cases and deaths caused by COVID-19 continues to rise daily, demonstrating the severity of the virus.

There is no universal definition for the term mental health given that it continues to evolve. However, according to the WHO (Galderisi et al., 2015, p. 231), mental health is defined as:

> … a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community…

Mental health is not solely the absence of psychological illnesses but includes emotional, psychological, and social well-being (Galderisi et al., 2015). It encompasses holistic wellness and, when affected, an individual's mental health can result in the onset of mental illness.

South Africa has a twelve-month prevalence of 16.5% for common mental disorders, such as anxiety, mood disorders, and substance abuse (Petersen et al., 2016). In addition, almost a third of the South African population have experienced a common mental illness in

their lifetime (Petersen et al., 2016). The Mental Health Quotient (MHQ) is a mental well-being assessment that focuses on mental functioning and, in 2021, South Africa scored the lowest average (i.e., 46) in comparison to other countries, such as Venezuela (i.e., 91) (Newson et al., 2021). Furthermore, the South African population scored 36% on the distressed and struggling scale, which is an increase of 8% from 2020 (Newson et al., 2021). This suggests that the South African population is experiencing psychological distress, which is likely to have been exacerbated during the COVID-19 pandemic.

Mental healthcare workers (e.g., psychologists, counsellors, social workers, and psychiatrists) work in a culture that requires constant empathy and compassion, without the expectation of the behaviour being reciprocated (Posluns & Gall, 2020). Furthermore, the mental healthcare profession requires significant effort and energy, which easily places these professionals at increased risk of negative outcomes, such as burnout, psychological distress, stress, and professional impairment (Posluns & Gall, 2020). As such, mental healthcare workers are known to experience significant amounts of stress. For example, mental healthcare workers experience stressors ranging from emotionally demanding clients, suicide attempts and ideation, clients' inability to show commitment to improvement, and managing aggressive and violent behaviours, all while attempting to manage their caseload, professional isolation, and legal and ethical dilemmas (Posluns & Gall, 2020).

Research Problem Statement

International and local studies have demonstrated the psychological effects of COVID-19. In South Africa, studies have more cogently illustrated the psychological effects of COVID-19 among healthcare workers, university students, and the general population. While research on the psychological effects of COVID-19 continues, there are limited studies focusing on the mental healthcare profession population in South Africa. Mental healthcare

professions can be demanding, and it is important to determine the extent to which the COVID-19 pandemic has affected this section of the population.

Rationale for the Study

Many researchers have stated that mental healthcare workers play a vital role in assisting the population with psychological distress caused by COVID-19 (Pierce et al., 2020; Santomauro et al., 2021). However, research has omitted the toll that mental healthcare workers themselves are facing, during the COVID-19 pandemic.

Aims and Objectives of the Study

The aim of this study was to investigate the psychological effects of the COVID-19 pandemic on mental healthcare workers in South Africa. The objectives were to:

i. Determine the psychological effects of the pandemic on mental healthcare workers with regards to their levels of depression, anxiety, and loneliness;
ii. Assess the association between fear of COVID-19 and psychological outcomes (i.e., depression, anxiety, and loneliness);
iii. Assess the association between protective factors (i.e., psychological resilience and social support) and mental health outcomes (i.e., depression, anxiety, and loneliness); and
iv. Assess the moderating and mediating role of social support and resilience on mental health outcomes.

Hypotheses

The hypotheses were:

i. Hypothesis 1: Higher levels of fear of COVID-19 are associated with higher levels of depression.
ii. Hypothesis 2: Higher levels of fear of COVID-19 are associated with higher levels of anxiety.
iii. Hypothesis 3: Higher levels of fear of COVID-19 are associated with higher levels of loneliness.
iv. Hypothesis 4: Higher levels of resilience are associated with lower levels of depression.
v. Hypothesis 5: Higher levels of resilience are associated with lower levels of anxiety.
vi. Hypothesis 6: Higher levels of resilience are associated with lower levels of loneliness.
vii. Hypothesis 7: Higher levels of social support are associated with lower levels of depression.
viii. Hypothesis 8: Higher levels of social support are associated with lower levels of anxiety.
ix. Hypothesis 9: Higher levels of social support are associated with lower levels loneliness.
x. Hypothesis 10: Fear of COVID-19 moderated/mediated the relationship between resilience and depression.
xi. Hypothesis 11: Fear of COVID-19 moderated/mediated the relationship between resilience and anxiety.
xii. Hypothesis 12: Fear of COVID-19 moderated/mediated the relationship between resilience and loneliness.

xiii. Hypothesis 13: Fear of COVID-19 moderated/mediated the relationship between social support and depression.

xiv. Hypothesis 14: Fear of COVID-19 moderated/mediated the relationship between social support and anxiety.

xv. Hypothesis 15: Fear of COVID-19 moderated/mediated the relationship between social support and loneliness.

Chapter Two: Literature Review

The COVID-19 pandemic resulted in a global panic, leaving no individual unaffected by its consequences. As a recently discovered virus, COVID-19 has caused a considerable amount of uncertainty, fear, and anxiety worldwide. This is primarily due to a general lack of information about the virus, including its exact cause, duration, as well as the availability and effectiveness of vaccines, all of which have been found to worsen people's mental health (Hacimusalar et al., 2020; Padmanabhanunni & Pretorius, 2021a).

Globally, strict regulations were put in place to limit the spread of the virus, which included wearing face masks, sanitising of hands, lockdowns, social distancing rules, non-essential services having to close (e.g., hotels, restaurants, and certain stores such as clothing stores), and strict curfews were implemented to limit movement (South African Government Gazette, 2020; WHO, 2022a). To adhere to stipulated health guidelines, people's lives changed drastically without warning. For some work and school transitioned into remote work and school, while many others lost employment due to the economic impact of the COVID-19 pandemic.

The role of mental healthcare workers became more incipient as frontline workers, and the importance of mental healthcare workers in assisting the general population to cope with the challenges precipitated by COVID-19 has been emphasised (Chenneville & Schwartz-Mette, 2020). Therefore, the following literature review will address the mental health outcomes of the COVID-19 pandemic from a global and South African perspective, while also addressing the effects of the pandemic on mental healthcare workers.

Mental Health Outcomes of the COVID-19 Pandemic

The onset of the COVID-19 pandemic caused a significant rise in the global prevalence of mental health problems (Nochaiwong et al., 2021). According to the WHO

(2022a), the global prevalence rate of depression and anxiety increased by 25% during the first year of the pandemic. Furthermore, several studies have demonstrated an increase in psychological distress among the worldwide population, with the most common mental health outcomes being fear, depression, anxiety, post-traumatic stress disorder (PTSD), stress, and sleeping problems (Nochaiwong et al., 2021; Roy et al., 2021).

Several cross-sectional studies indicate that there is a strong relationship between the COVID-19 pandemic and mental health problems. A study conducted in the United Kingdom (UK) examined the mental health of the general population before and during the pandemic and found that, one month into a national lockdown in the UK, the prevalence for mental disorders and related distress increased from 18.9% in 2018/2019 to 27.3% in April 2020 (Pierce et al., 2020). These findings demonstrate an increase of nearly 10% in distress, which could suggest that distress may have increased as lockdown continued. A study conducted by Cortés-Álvarez et al. (2020) in Mexico reported that, one week into the national lockdown (N=1105), 50.3% of the general population reported experiencing moderate to severe levels of psychological distress. Similarly, a study conducted in China concluded that 53.8% of people appraised the psychological effects of COVID-19 to be moderate or severe (Wang et al., 2020).

In addition to cross-sectional studies, systematic reviews have detailed the impact of the COVID-19 pandemic on mental health. For example, Nochaiwong et al. (2021) conducted a systematic review that included studies from thirty-two different countries including South Africa, Germany, Thailand, New Zealand, and Iran. Their study confirmed that the prevalence rate for mental health disorders amongst the general population was higher during the COVID-19 pandemic than before the onset of the virus outbreak (Nochaiwong et al., 2021). The study concluded that the global prevalence rate was 28% for

depression, 26.9% for anxiety, 36.5% for stress, 24.1% for PTSD, and 50% for psychological distress (Nochaiwong et al., 2021).

Global studies have demonstrated an "increasing prevalence of mental health disorders among various population groups" (Roy et al., 2021, p. 588), where certain groups are more vulnerable to psychological distress (Cortés-Álvarez et al., 2020). Frequently mentioned vulnerable groups include women (reported to be a highly vulnerable group), those with pre-existing mental disorders, and young adults, specifically university students (Murphy et al., 2021; Rodríguez-Rey et al., 2020; Song et al., 2021). Furthermore, some studies have identified unmarried individuals (Song et al., 2021), low-income groups (Nochaiwong et al., 2021), and the elderly (Rodríguez-Rey et al., 2020) as vulnerable groups.

Several studies have identified women as being highly vulnerable and susceptible to mental health disorders, such as depression and anxiety, during the COVID-19 pandemic (Cortés-Álvarez et al., 2020; Song et al., 2021; Wang et al., 2020). According to the WHO (2017), prior to the COVID-19 pandemic, mental illnesses were more common amongst women, suggesting that the development of mental illness among women was likely to increase throughout the pandemic. The reasons provided for an increased susceptibility to mental illness include working in the healthcare sector and being exposed to domestic violence. While it is important to note that these reasons have always been the case, it appears to have intensified since the onset of the pandemic (Cortés-Álvarez et al., 2020; Wang et al., 2020).

Approximately 70% of women globally work in the healthcare sector, which makes up most of the healthcare workforce (Rodríguez-Rey et al., 2020; Thibaut & van Wijngaarden-Cremers, 2020). This means that women are more susceptible to contracting COVID-19 and have an increased possibility of fearing for their lives and their family's lives. In addition, Thibaut and van Wijngaarden-Cremers (2020) state that, since the outbreak of the

pandemic, many countries have reported increased cases of domestic violence. More specifically, South Africa reported 87,000 gender-based violence (GBV) cases in the first week of the national lockdown (Nguse & Wassenaar, 2021). There are several factors that could have resulted in increased domestic violence cases, such as social isolation, loss of income, and an inability to flee or escape due to stay-at-home restrictions (Thibaut & van Wijngaarden-Cremers, 2020).

People with pre-existing psychiatric conditions are at a greater risk of a relapse due to the impact of the COVID-19 pandemic (Murphy et al., 2021). Pandemic related preventative measures have increased levels of loneliness and social isolation, causing those with pre-existing conditions to feel extremely isolated (Murphy et al., 2021). Furthermore, COVID-19 related conditions, such as loss of loved ones, economic pressures, and fear of contracting the virus, could aggravate current psychiatric symptoms of those with pre-existing mental illnesses (Roy et al., 2021; WHO, 2020a). In addition, disruptions in mental health services, such as accessing treatment and clinics for medication and support services, further affects those with pre-existing conditions (Murphy et al., 2021). A study conducted in South Africa found that participants with pre-existing psychological difficulties displayed a severe level of anxiety and depressive symptoms during the COVID-19 pandemic (De Man et al., 2021). Thus, De Man et al. (2021) concluded that there is a high association between pre-existing mental illness and poorer mental health during the COVID-19 pandemic.

Global studies have reported that university students have been highly affected by the psychological impact of COVID-19 (Browning et al., 2021). Browning et al. (2021) states that university students are affected by the uncertainty surrounding their academic trajectory, concerns about access to online platforms, and a limited social life. One study conducted in the United States (US), concluded that 45% of university students reported severe levels of psychological distress (Browning et al., 2021). Furthermore, a study conducted in Spain

concluded that 50.4% of university students have been moderately or severely impacted by the pandemic and the national lockdown (Odriozola-González et al., 2020). A South African study focusing on first- and second-year psychology students reported that anxiety, loneliness, and fear were prevalent among students (Laher et al., 2021). In addition, Laher et al. (2021) reported that students were feeling mentally drained and fearful about online learning. Related to this, Aristovnik et al. (2020) states that students from Africa were not satisfied with online learning due to the unequally developed Information and Communications Technology (ICT) infrastructure across the continent, meaning that higher education institutions were unable to offer online learning and many students had limited access to devices and internet connection (Aristovnik et al., 2020). It could be suggested that countries characterised by significant levels of socio-economic inequality, such as South Africa, face significant challenges related to accessing online platforms which, among students, could exacerbate mental health problems, such as anxiety, due to not being able to attain educational goals.

Fear of COVID-19

Fear is defined as an unpleasant emotional response that is triggered by the presence of a threatening stimuli (Muyor-Rodríguez et al., 2021). Fear is a natural and universal human emotion that acts as an alarm system, which allows us to perceive and react to any perceived threat (Milosevic & McCabe, 2015). In addition, fear is known to be an adaptive response to the current situation and acts as a defence mechanism (Luo et al., 2021). Maladaptive fear, on the other hand, is disproportionate to the actual threat posed and can lead to severe psychological distress and interrupts daily functioning (Luo et al., 2021; Milosevic & McCabe, 2015). Every human occasionally experiences fear but, since the onset of the COVID-19 pandemic, fear around COVID-19 has become even more prevalent.

COVID-19 is a recently discovered infectious disease that poses as an unknown threat, causing fear amongst many (Ahorsu et al., 2020; Muyor-Rodríguez et al., 2021). There are numerous threats that can evoke fear, especially since COVID-19 is directly associated with high levels of transmission and mortality (Ahorsu et al., 2020; Muyor-Rodríguez et al., 2021). COVID-19 related prevention measures have led to job insecurity, food insecurity, and has impacted the accessibility of resources, which could lead to fear (Sakib et al., 2021). In addition, the continuous development of new COVID-19 variants, and the uncertainty surrounded around vaccinations and about the future, has further evoked fear (Sakib et al., 2021). Ahorsu et al. (2020) and Sahoo et al. (2020) state that extreme levels of fear surrounding the COVID-19 pandemic may lead to irrational thoughts and psychological distress, which may lead to self-harming behaviour or even suicide. Sakib et al. (2021) also state that extreme fear, combined with economic and social consequences, can cause irrational thoughts resulting in psychological distress.

Studies have reported that fear of COVID-19 can lead to increased levels of psychological distress and decrease mental health status (Luo et al., 2021; Roy et al., 2021; Satici et al., 2021). Satici et al. (2021) confirmed that fear of COVID-19 increases anxiety, depression, and stress, and decreases life satisfaction. In addition, Roy et al. (2021) found that fear of COVID-19 can cause an onset of psychiatric symptoms to those without pre-existing mental health conditions.

Depression

The American Psychiatric Association (APA) (2013) defines depression as a mental illness that is characterised by a "depressed mood or loss of interest or pleasure" (p. 160) in various activities, which could significantly impair daily functioning. Depression is also characterised by a disturbed sleeping pattern, changes in appetite, feelings of guilt and low self-worth, decreased levels of concentration, and loss of energy (APA, 2013). According to

the WHO (2017), depression makes up a considerable portion of the global burden of disease, as it has been estimated that approximately 280 million people suffer from depression.

Depression goes beyond affecting daily functioning and quality of life, as it has been shown to also result in severe physical and psychological consequences, such as cardiovascular diseases (i.e., heart attacks, stokes, hypertension, and diabetes), obesity, Alzheimer's disease, premature mortality, and cognitive decline (Penninx et al., 2013; Subramaney et al., 2020). Depression is also associated with several mental health conditions including substance use, suicidal ideation, and suicide (Penninx et al., 2013). Conversely, one of the symptoms for Major Depressive Disorder includes suicidal ideation or plans or attempts of suicide (APA, 2013). Furthermore, Penninx et al. (2013) state that depressed individuals are more likely to partake in excessive drinking and smoking in comparison to non-depressed individuals.

A US study comparing the prevalence rate of depression before and during the COVID-19 pandemic (N=1470), reported increases as high as three times since the start of the pandemic (Ettman et al., 2020). The recorded prevalence rate was 8.5% before the pandemic and 27.8% during the pandemic (Ettman et al., 2020). The prevalence rate for moderate depressive symptoms increased from 5.7% before COVID-19 to 14.8% during COVID-19, and the prevalence rate for severe depression increased from 0.7% before COVID-19 to 5.1% during COVID-19 (Ettman et al., 2020). Similarly, a South African study evaluated the impact of COVID-19 on depression (N=952) and found that 14.5% of the Soweto population displayed depressive symptoms and were at risk of developing depression (Kim et al., 2020). In addition, there was a significant correlation between high levels of perceived COVID-19 risk and increased depressive symptoms, which was particularly prevalent among those who had a history of childhood trauma (Kim et al., 2020).

Anxiety

Anxiety is defined as an intense and excessive fear and worry about specific or everyday situations (APA, 2013). Anxiety disorders include generalised anxiety disorder (GAD), social anxiety disorder, PTSD, phobias, panic disorder, and obsessive-compulsive disorder (OCD) (APA, 2013). According to the WHO (2017), the worldwide prevalence rate for anxiety is 3.6% and it is estimated that approximately 264 million people are living with anxiety disorders.

Subramaney et al. (2020) state that common anxiety symptoms related to the COVID-19 pandemic might not present itself as an ordinary anxiety disorder and that anxiety related COVID-19 symptoms include concerns regarding contracting or spreading the virus, economic instability, social isolation, and unstable living conditions. It is also argued that individuals who remain in constant isolation and quarantine are more likely to experience significant levels of anxiety and stress (Salari et al., 2020).

A study conducted in China investigated the psychological effects of the COVID-19 pandemic during the beginning stages of the outbreak (N=1210) (Wang et al., 2020). Wang et al. (2020) found that 16.5% of the general population reported experiencing moderate to severe depressive symptoms and 28.8% of the general population reported experiencing moderate to severe anxiety symptoms since the start of COVID-19. In addition, a systematic review by Salari et al. (2020), concluded that the current prevalence rate for anxiety among the general population is 31.9%.

It has been shown that the COVID-19 pandemic has not only increased anxiety among the general population but has also affected those working within the healthcare sector. A study conducted in Turkey that evaluated nursing students' anxiety levels during the COVID-19 pandemic found that these students experienced moderate levels of anxiety (N=1653) (Yüksel & Yılmaz, 2022). Similarly, a Ghanaian study reported that anxiety was a

prominent mental health outcome for healthcare workers, with twenty-one out of thirty-eight healthcare workers (i.e., 71%) reporting high levels of anxiety (Arthur-Mensah et al., 2022). These studies suggest that mental healthcare workers also experience similar levels of anxiety during COVID-19, as this profession are essential workers.

The South African population has been severely affected by anxiety symptoms caused by the COVID-19 pandemic (Knight, 2020). Twenty percent of adults reported feeling anxious and stressed due to COVID-19 (Kim et al., 2020). Knight (2020) presented a thematic description of anxieties that emerged among the South African population, where the population described the development of new anxieties due to the COVID-19 pandemic, which included limited social interaction with friends and family, death, and current household relationships.

It is important to note that many people suffer from comorbidities (i.e., being diagnosed with more than one mental disorder). For example, a person can be diagnosed with both depression and anxiety (WHO, 2017). Many studies address the effects of COVID-19 on both anxiety and depression, demonstrating the comorbidity (Salari et al., 2020; Wang et al., 2020). Therefore, it is evident that COVID-19 could simultaneously cause the onset of depression and anxiety, as well loneliness.

Loneliness

The social psychological theory of loneliness was developed by Perlman and Peplau (1981), where loneliness is defined as a discrepancy between an individual's desired and actual level of social interaction. Loneliness is an emotional state that is explained by a sense of isolation and an absence of social contact (Beutel et al., 2017). While it is characterised as the subjective feeling of being alone, it is important to note that feeling alone does not necessarily mean being alone, as individuals can feel lonely in a crowd or in a marriage (Cacioppo et al., 2015).

Humans are social beings that thrive on social relationships and interactions. Forming social relationships and being integrated into society is imperative for emotional fulfilment and development (Beutel et al., 2017). Thus, the pandemic has disrupted social interactions through contact restrictions, stay-at-home orders, social distancing, and isolations, resulting in the exacerbation of loneliness. Alternative forms of communication, such as video calling and messaging, had to be frequently implemented to avoid spreading the virus through direct social contact (Buecker & Horstmann, 2021). According to Buecker and Horstmann (2021), these online platforms have reduced the level of intimacy experienced and has increased loneliness.

Loneliness has been found to be associated with various physical conditions, such as cardiovascular diseases, chronic diseases, cognitive decline, premature mortality, and Alzheimer's disease in the elderly (Beutel et al., 2017; Padmanabhanunni & Pretorius, 2021a). It has also been associated with several negative mental health conditions, including depression, substance use, suicidal ideation, suicide, and decreased positive emotions (Beutel et al., 2017; Padmanabhanunni & Pretorius, 2021a).

A study conducted in South Africa concluded that loneliness experienced by university students was higher amongst this population and also suggests the possibility of loneliness being a public health concern in South Africa during the COVID-19 pandemic (Padmanabhanunni & Pretorius, 2021a). In addition, Padmanabhanunni and Pretorius (2021c) stated that loneliness is a potential indicator for depression. The fear of COVID-19 can extend social isolation, leading to a lack of pleasurable social interactions, which can result in negative emotions and increase the onset of depression (Padmanabhanunni & Pretorius, 2021c).

A UK study identified the rate of loneliness experienced by the general population (N=1964), where the prevalence rate for loneliness was 27% (530/1964) (Groarke et al.,

2020). Groarke et al. (2020) reported that participants that met the Diagnostic and Statistical Manual of Mental Disorders – 5 (DSM-5) criteria for depression and anxiety scored twice as high on the loneliness scale. Additional risk factors for loneliness included living alone and being separated or divorced from a partner (Groarke et al., 2020).

Studies suggest that living alone increases the chances of experiencing loneliness. Beutel et al. (2017) conducted a study determining different degrees of loneliness and its association with mental health. It was stated that living alone is a determining factor for loneliness, as those living with a partner reported lower levels of loneliness and loneliness appeared more frequently in single females living alone (Beutel et al., 2017). Furthermore, it has been found that social support and living with others are protective factors that decrease the level of loneliness experienced (Groarke et al., 2020). In addition, being married or living with a partner can act as a protective factor against developing psychological illnesses (Rodríguez-Rey et al., 2020).

The Impact of COVID-19 on Mental Health in South Africa

The first confirmed COVID-19 case in South Africa was reported on March 2020 and by 26 March 2020 the government implemented a strict national lockdown with pandemic-related prevention measures (Padmanabhanunni & Pretorius, 2021a; South African Government Gazette, 2020). Pandemic-related preventative measures entailed strict stay-at-home orders and restrictions on movement (South African Government Gazette, 2020). In essence, the population was only authorised to leave home to perform and obtain essential services (i.e., mental health services) and goods, seek medical attention, or collect a social grant and pension (South African Government Gazette, 2020). Further preventative measures included mandatory wearing of face masks in any social setting, constant sanitising and washing of hands, and keeping physical distance from others (Padmanabhanunni & Pretorius,

2021a; South African Government Gazette, 2020). In addition, social gatherings were prohibited, local and international travel was banned, and non-essential services including restaurants, schools, universities, and stores were closed (Padmanabhanunni & Pretorius, 2021a; South Africa Government Gazette, 2020).

The South African population had to adjust to the pandemic-related prevention measures, while having to deal with the challenges associated with the pandemic and confronting environmental and situational challenges that are likely to affect mental health. As of November 2022, South Africa reported 4,033,182 positive COVID-19 cases and 102,371 COVID-19 related deaths (WHO, 2022b). Thus, these statistics demonstrate the severity and seriousness of the virus.

Emerging research on the mental health impact of COVID-19 in South Africa has suggested that levels of psychological distress in the country are higher than those encountered elsewhere. Evidence demonstrated that South Africa was among the top five countries with the highest COVID-19 positivity rate (De Man et al., 2021). Padmanabhanunni and Pretorius (2021a) reported heightened levels of fear, loneliness, depression, anxiety, and hopelessness among young adults in the country. In addition, Nguse and Wassenaar (2021) discovered that during the first lockdown, 29% of the general population were experiencing loneliness and 45% were fearful of COVID-19.

The COVID-19 lockdown has shown to have significant effects on mental health and unemployment in South Africa. During the first four months of the implementation of lockdown, it was estimated that approximately three million workers in South Africa lost their jobs (Nguse & Wassenaar, 2021). As mentioned previously, Sakib et al. (2021) state that fear, combined with economic consequences, can lead to psychological distress. This is specifically relevant within the South African context as unemployment rates have increased since the start of the pandemic, which has possibly caused fear amongst many. The South

African unemployment rate has risen to 30.1% and this has been found to be associated with an increase in loneliness (Groarke, 2020; Nguse & Wassenaar, 2021). Oyenubi and Kollamparambil (2020) found that people who lost their jobs during the lockdown scored significantly higher for depression than those that were able to retain employment.

A study conducted in South Africa (specifically in the Western Cape) examined the relationship between COVID-19 and mental health during stay-at-home restrictions (De Man et al., 2021). De Man et al. (2021) found that 46% of the Western Cape population met the diagnostic threshold for anxiety and 47.2% of the population met the threshold for depression. Despite the high percentage of those that met the threshold, De Man et al. (2021) reported that only a few people accessed mental health services.

The South African Depression and Anxiety Group (SADAG) provides further evidence identifying the effects of COVID-19 on mental health. In 2020, SADAG administered an online survey exploring COVID-19 and mental health and it was found that 65% of respondents felt stressed or very stressed during the initial lockdown (SADAG, 2020). SADAG also received an increase in calls due to people feeling anxious, depressed, worried, and lonely (SADAG, 2020). This survey suggests that the mental health of South Africans has been severely affected by the COVID-19 pandemic. While it is important to address all those that have been affected by COVID-19, it is equally important to determine what resources are available for those within South Africa.

Evidence suggests that mental health in South Africa is a significant public health concern that is exacerbated by a lack of mental health resources and access to psychological services. In 2019, reports showed that only 5% of South Africa's national health budget was allocated to mental health (Nguse & Wassenaar, 2021; WHO, 2020b). Of the public hospitals that offer mental health services, 30% do not have an assigned clinical psychologist (Nguse & Wassenaar, 2021). This implies that South Africa has a serious shortage of psychologists

and registered counsellors (Hitge & Van Schalkwyk, 2018). In 2013, the country had a population of approximately 53 million and had about 10 961 registered psychologists (Bantjes et al., 2016). This translates into the availability of one psychologist per 4 835 people. In 2020, South Africa had 360 mental healthcare workers (i.e., psychiatrists, psychologists, social workers, mental health nurses, and other specialised mental healthcare workers such as occupational therapists) per 100 000 of the population (WHO, 2020b).

In 2018, the mental health of South Africans was examined by the South African College of Applied Psychology, and it was found that "one in six South Africans suffer from anxiety, depression or substance abuse" (Pillay, 2019, p. 463). More recently, a survey conducted by the Human Sciences Research Council (HSRC) found that a third (33%) of the South African population are experiencing depressive symptoms or are depressed (Nguse & Wassenaar, 2021; Oyenubi & Kollamparambil, 2020). Pillay (2019) also confirms that "only 27% of South Africans with severe mental disorders receive treatment" (p. 463). These findings suggest that South Africans are suffering from mental disorders and the possibility of receiving sufficient treatment is limited. It is evident that the South African population is in need of mental healthcare workers to provide psychological services and basic psycho-education on the topic of mental health to increase awareness.

Differential Vulnerability to Psychological Distress

Differential vulnerability means that, although we have all been exposed to the same stressor (COVID-19), not everyone has developed or will develop mental health illnesses (Anderson et., 2022). Furthermore, certain risk factors make people more vulnerable to psychological distress, whereas certain protective factors assist people in being less vulnerable to psychological distress (Padmanabhanunni & Wiid, 2021). Padmanabhanunni and Pretorius (2021a) mention that certain people will be more equipped with preventative

measures that will protect them from infection. Thus, it is suggested that individuals with preventative measures in place are less likely to worry about the effects of COVID-19 in comparison to those that are less equipped (Padmanabhanunni & Pretorius, 2021a). Studies have shown that a lack of knowledge about the COVID-19 pandemic (i.e., details of symptoms, route of transmission, and preventative measures) can aggravate mental health by increasing depression, anxiety, and stress (Yıldırım & Güler, 2020). These issues highlight the role of protective factors and differential vulnerability.

A few studies have examined the association between COVID-19 and protective factors, including but not limited to resilience, sense of coherence, self-efficacy, and social support (Grey et al., 2020; Hou et al., 2021; Padmanabhanunni & Pretorius, 2021a; Serafini et al., 2020; Song et al., 2021). It has been found that protective factors can delay or prevent the development of mental illness and helps with the challenges that come with the pandemic (Serafini et al., 2020). In the current study the focus was on resilience and social support.

Psychological resilience is the ability to mentally and emotionally cope while encountering adversity (Serafini et al., 2020). Resilient individuals are less likely to display severe psychological difficulties and are more likely to recover quickly from any adversity faced (Hou et al., 2021). Connor and Davidson (2003) state that individuals with mental illness have lower levels of resilience in comparison to the general population. A study conducted on the pandemic found that individuals with a high level of mental resilience and coping skills are likely to have lower levels of depression and anxiety (Song et al., 2021). An additional study concluded that depression is associated with low levels of resilience (Verdolini et al., 2021). Furthermore, a study by Li et al. (2021a) concluded that resilience has significant inverse associations with mental health.

Social support has numerous sub-constructs such as perceived and received support. Received support is the actual quantity of supportive behaviours received (Grey et al., 2020;

Li et al., 2021a). Whereas, perceived social support is a subjective evaluation of how individuals perceive their social network's availability to provide psychological and overall support during times of crises (Grey et al., 2020). Perceived support includes various sources, such as family members, romantic and plutonic relationships, community ties, colleagues, and pets (Li et al., 2021a). Findings have demonstrated that perceived support has an increased association with mental health (Li et al., 2021a). Recent studies have been conducted on the role of perceived social support during the COVID-19 pandemic, where findings have demonstrated that high levels of perceived social support correlate with lower levels of depression and PTSD (Grey et al., 2020). In addition, higher levels of perceived social support have shown to have a significant inverse association with depression, anxiety, and loneliness (Grey et al., 2020).

One year after the start of the pandemic, Hou et al. (2021), reported that perceived social support acts as a mediator between resilience and anxiety. It was stated that resilient individuals tend to have stronger social networks, allowing them to access support when faced with adversity (Hou et al., 2021). This implies that resilient individuals should have higher levels of perceived social support in comparison to non-resilient individuals, despite having the same amount of received social support (Hou et al., 2021). It has been suggested that high levels of social support can enhance resilience, which plays a role in providing protection against developing mental health disorders (Grey et al., 2020). This demonstrates that it is likely that the protective factors are correlated, as an increase in the one is likely to cause an increase in the other.

Mental Healthcare Workers

Literature suggests that mental healthcare workers have a responsibility to help their clients, patients, and the larger community in understanding the effects of COVID-19

(Stankovska et al., 2020). Yıldırım and Güler (2020) and Song et al. (2021) suggest that mental healthcare workers should develop and implement various interventions aimed at increasing individuals' resilience and the ability to cope with stressors and other arising public health emergencies. In addition, the provision of online counselling and intervention services and hotlines to the public could assist those who are experiencing stress and psychiatric symptoms (Song et al., 2021). However, numerous studies have demonstrated the challenges that arise with online counselling.

Mental healthcare workers have been required to adapt to the challenges of the pandemic, such as having to expand their counselling platforms using online and telephonic sessions (Joshi & Sharma, 2020). However, when using online and telephonic sessions, it has been found that mental healthcare workers face challenges around building rapport, an inability to use specific psychological treatments, and technical difficulties (Ching et al., 2021).

Technical difficulties have been shown to be a major challenge for both practitioners and clients, simply due to problems with the stability and speed of internet connection (Feijt, 2020). Furthermore, certain clients do not have access to an internet connection and do not own the necessary devices to access online sessions, such as a laptop with a camera or smartphone (Feijt, 2020). This challenge is extremely prevalent in South Africa, as not every person that attends counselling has access to the necessary devices and the required internet connection. In addition, practitioners and clients in South Africa are also faced with additional technical challenges such as load shedding, which could interfere with booked sessions. This being said, Naidoo and Cartwright (2020) argue that online counselling can remove barriers associated with face-to-face and physical interaction, where only certain groups are benefited. For example, individuals with social anxiety and agoraphobia, those

living in remote areas, and individuals with disabilities, are likely to benefit from online counselling (Naidoo & Cartwright, 2020).

Litam et al. (2021) state that, due to the increase in clients' stress levels, mental healthcare workers should be addressing their clients' pandemic-related concerns, while alleviating their own stress levels to protect themselves from psychological distress. However, this has been found to be challenging since mental healthcare workers are faced with an increase in their patient base, thereby increasing the amount of pressure they are faced with (Kar & Singh, 2020). A potential risk is that mental healthcare workers are possibly less likely to prioritise their own mental health and stress levels, which can adversely affect their mental health. The sooner mental healthcare workers prioritise their mental health, the greater the long-term effects will be, given that mental healthcare workers will be addressing the effects of COVID-19 for years to come. Roy et al. (2020) argue that there is a correlation between outbreaks of infectious diseases or pandemics and a setback of mental health. For example, one year after the Ebola outbreak, depression, anxiety, and PTSD were more prevalent than during the initial outbreak (Roy et al., 2020).

Along with dealing with the additional challenges, it is important to note that mental healthcare workers are not immune to psychiatric illnesses, stress, and fear (Kar & Singh, 2020). Mental healthcare workers often fail to seek adequate help for themselves, possibly because there is a faulty belief that, as experts of mental health, they should be able to cope and deal with their mental health challenges on their own (Kar & Singh, 2020). However, there are mental healthcare workers that have a history of psychiatric illness and a lack of support during the COVID-19 pandemic makes them significantly vulnerable (Kar & Singh, 2020).

A study conducted in the UK collected information about clinical psychologists' experiences when providing mental health support during the pandemic (Ching et al., 2021).

Ching et al. (2021) found that there had been an increase in workload, with new COVID-19 related referrals and current clients that are presenting newly uncovered COVID-19 related difficulties. Similarly, Ashcroft et al. (2022) conducted a study in Canada exploring the impact of the pandemic on social workers. It was found that the pandemic has had numerous negative implications on social workers personal well-being, such as severely impacting their emotional well-being (Ashcroft et al., 2022). Participants reported an increase in workload, with minimal additional compensation and limited to no access to support or resources (Ashcroft et al., 2022). This has resulted in participants facing high levels of stress and mental health challenges, with minimal to no work-life balance (Ashcroft et al., 2022).

The construct of vicarious trauma refers to "the unique, negative, and accumulative changes that can occur to clinicians who engage in an empathetic relationship with clients" (Branson, 2019, p. 2). Litam et al. (2021) focus on vicarious trauma, which is known to be an occupational hazard for mental healthcare workers providing services during a pandemic. Litam et al. (2021) argue that many clients may be facing certain challenges related to COVID-19 fear and experiences, such as death and becoming extremely ill. It is likely that mental healthcare workers are fearful of experiencing challenges similar to those of their clients. Mental healthcare workers are working with certain types of patients (i.e., those who have experienced trauma) on a regular basis, which can lead to changes in the mental healthcare worker's own cognitive schemas around safety and trust, sense of self, and relationships with others (Litam et al., 2021). In addition, it is possible that their own unresolved traumas may be triggered due to their career (Litam et al., 2021). Listening to the traumatic experiences of clients has an impact on mental healthcare workers' emotional well-being and their own mental health (Lodha, 2021). Therefore, vicarious trauma has negative effects on functioning, including emotional (i.e., increase in anxiety and depression), behavioural, and cognitive functioning (Lodha, 2021).

A US study conducted among 339 psychotherapists found that they were at risk of developing vicarious trauma during the pandemic (Aafjes-van Doorn et al., 2020). The results of the study demonstrated that 15% of psychotherapists experienced high levels of vicarious trauma and moderate levels of trauma had been experienced by more than half of the participants that were working during the pandemic (i.e., 62.7%) (Aafjes-van Doorn et al., 2020). This finding suggest that mental healthcare workers are vulnerable to vicarious trauma, which can result in vulnerability to their emotional well-being and mental health.

Chapter Three: Methodology

Research Design

The study used a cross-sectional survey design. A cross-sectional survey design is able to make inferences about a sample at one point in time (Connelly, 2016). This study design aims to acquire reliable data that make it "possible to generate, robust conclusions, and create new hypotheses that can be investigated with new research" (Zangirolami-Raimundo et al., 2018, p. 356). In addition, a cross-sectional design determines the extent to which two or more variables are related, making it well suited for the aims of the current study (Seeram, 2019).

Participants and Sampling

The participants in the study were mental healthcare workers (N=259), specifically registered counsellors, clinical psychologists, counselling psychologists, and social workers. The inclusion criteria included being a mental healthcare worker within one of these registration categories. In addition, participants must have been practicing within their field of work during the COVID-19 pandemic and residing in South Africa.

Table 1:

Socio-demographic Description of Sample

Demographic	Descriptives		N	%
Gender	Female		222	85.7
	Male		37	14.3
Age	Mean	46.59		
	SD	12.08		
Registration Category	Clinical Psychologist		109	42.1
	Counselling Psychologist		33	12.7

	Counsellor		65	25.1
	Social Worker		52	20.1
Total Years of Experience	Mean	14.95		
	SD	10.55		
Education Level	Bachelor's Degree		28	10.8
	Honours Degree		60	23.2
	Master's Degree		155	59.8
	Doctoral Degree		16	6.2
Relational Status	Single		38	14.7
	In a relationship		31	12.0
	Engaged		5	1.9
	Married		157	60.6
	Divorced		27	10.4
	Widowed		1	00.4

Table 1 provides a description of the socio-demographic details of the participants. Most participants were female (85.7%) and registered Clinical Psychologists (42.1%). The mean age of the participants was 46 years (*SD* = 12.08). The mean total years of experience in their practicing field was 14 years (*SD* = 10.55). Most participants had a Master's degree (59.8%), and most participants were married (60.6%).

Instruments

Participants completed seven self-report instruments. These include:

- The socio-demographic questionnaire (Appendix A);
- Fear of COVID-19 Scale (FCV-19S: Ahorsu et al., 2020: Appendix B);
- Connor-Davidson Resilience Scale (CD-RISC-25: Connor & Davidson, 2003: Appendix C);
- Multidimensional Scale of Perceived Social Support (MSPSS: Zimet et al., 1988: Appendix D);
- UCLA Loneliness Scale (Russell et al., 1980: Appendix E);

- Center for Epidemiological Studies-Depression Scale (CES-D: Radloff, 1977: Appendix F); and
- State-Trait Anxiety Inventory (STAI: Spielberger et al., 1983: Appendix G).

Each of the instruments are in the public domain and have been applied to the general population, including mental healthcare workers. The instruments are described in further detail in the section below.

Socio-demographic Questionnaire

The socio-demographic questionnaire was used to gather information about each participant. This included: age, gender, registration category, years of experience in the field, highest level of education, and relational status.

Fear of COVID-19 Scale (FCV-19S)

The FCV-19S consists of seven items, each rated on a five-point scale. Items are rated from "strongly disagree" to "strongly agree", with scores ranging from 7 to 35. In addition, the scores are categorised into low (7–21) and high scores (22–35), where higher scores reflect greater fear of COVID-19 (Rahman et al., 2020). The FCV-19S has demonstrated an appropriate internal consistency reliability with the developers reporting a Cronbach's alpha of .82 (Ahorsu et al., 2020).

A study conducted in South Africa provided extended research on the psychometric properties of the FCV-19S (Pretorius et al., 2021). The study demonstrated sound psychometric properties with significant item-total correlations (.68 to .77) and a Cronbach's alpha of .91 (Pretorius et al., 2021).

Connor-Davidson Resilience Scale (CD-RISC-25)

The CD-RISC-25 consists of twenty-five self-report items that measure the level at which participants recover from stressful events, tragedy, or trauma. Each item is rated using a five-point Likert scale, with scores ranging from 0 = "not true at all" to 4 = "true nearly all

the time". Total possible scores range from 0 (no resilience) to 100 (high resilience). The CD-RISC-25 has demonstrated good psychometric properties with a Cronbach's alpha of .89 (Connor & Davidson, 2003).

Jorgensen and Seedat (2008) examined the factor structure of the CD-RISC-25 on adolescents in South Africa. The study demonstrated sound psychometric properties with a Cronbach's alpha of .93 (Jorgensen & Seedat, 2008)

Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS is a twelve-item scale that measures perceived social support from three domains: family, friends, and significant others. Each domain consists of subscales which includes four items. Items are rated on a seven-point scale, ranging from 1 = "very strongly disagree" to 7 = "very strongly agree". The MSPSS has demonstrated sound psychometric properties with a Cronbach's alpha ranging from .81 to .98 in non-clinical samples, and .92 to .94 in clinical samples (Wongpakaran et al., 2011).

Bruwer et al. (2008) conducted a study on the psychometric properties of the MSPSS on South African youth. The study demonstrated sound psychometric properties with a good internal consistency (Bruwer et al., 2008).

UCLA Loneliness Scale

The UCLA Loneliness Scale consists of twenty self-report items that measure an individual's feelings of loneliness and social isolation. Items are rated on a four-point Likert scale, ranging from "I often feel this way" to "I never feel this way". Total scores range from 20–80, and score interpretation is as follows: <35 = low levels of loneliness; 35–49 = moderate levels of loneliness; 50–64 = moderately high levels of loneliness; and >64 = high levels of loneliness (Deckx et al., 2014). The UCLA Loneliness Scale has been found to be a valid and reliable measure, with an internal consistency of between .94 and .96 (Doğan et al., 2011).

A study conducted in South Africa examined the association between COVID-19 and loneliness amongst university students (Padmanabhanunni & Pretorius, 2021a). The UCLA Loneliness Scale demonstrated sound psychometric properties with a Cronbach's alpha of .92 (Padmanabhanunni & Pretorius, 2021a).

Center for Epidemiological Studies-Depression Scale (CES-D)

The CES-D Scale consists of twenty self-report items that assesses how frequently an individual has experienced symptoms of depression over the past week. The four-point Likert scale ranges from 0 = "rarely or none of the time [less than one day]" to 3 = "most or almost all the time [5-7 days]". The total possible scores range from 0 to 60, with high scores indicating greater depressive symptoms. A score <16 indicates that there are no signs of depression and a score ≥16 indicates that a person is at risk of clinical depression. The CES-D Scale has shown to have a high internal consistency, with a Cronbach's alpha of .85 in the general population and .90 in the patient sample (Radloff, 1977).

A study conducted in South Africa aimed to identify the potential protective role of fortitude between COVID-19 related worries and psychological distress (Padmanabhanunni & Pretorius, 2020). Padmanabhanunni and Pretorius (2020) made use of the CES-D Scale to indicate the level of depression experienced by young adults. The CES-D Scale demonstrated good psychometric properties with a Cronbach's alpha of .92 (Padmanabhanunni & Pretorius, 2020).

State-Trait Anxiety Inventory (STAI)

The STAI is a self-report measure that measures general anxiety, it consists of two subscales, namely State and Trait Anxiety Scales. The S-Anxiety (STAI Form Y-1) consists of twenty items (items 1 to 20) that evaluates respondents current state of anxiety, focusing on how respondents are currently feeling. The T-Anxiety (STAI Form Y-2) also consists of twenty items (items 21 to 40) and measures respondents' general anxiety. Items are rated on a

four-point scale. Responses for S-Anxiety ranges from 1 = "not at all" to 4 = "very much so", and T-Anxiety ranges from 1 = "almost never" to 4 = "almost always". Total scores for each subtest ranges from 20 to 80 where the higher the score, the greater the anxiety. STAI scores are interpreted as follows: 20–37 = "no or low anxiety", 38–44 = "moderate anxiety", and 45–80 = "high anxiety" (Kayikcioglu et al., 2017). The STAI has demonstrated to be a valid and reliable measure, with an internal consistency of between .86 and .95 (Spielberger et al., 1983).

Padmanabhanunni and Pretorius (2021b) conducted a study on the relationship between mental health outcomes (i.e., loneliness and anxiety) and COVID-19 among undergraduate students in South Africa. The study demonstrated sound psychometric properties on the STAI with a Cronbach's alpha of .90 (Padmanabhanunni & Pretorius, 2021b).

Data Collection Procedure

The seven self-report instruments were converted into an electronic survey using Google Forms. The email addresses of mental healthcare workers were sourced from various websites where registered practitioners advertised their services. These sites are in the public domain (e.g., https://mentalhealthsa.org.za, www.findhelp.co.za, and www.therapyroute.com). After sourcing prospective participants email addresses from these websites, I distributed an invitation (Appendix H) to participate in the study. The invitation provided information about the study including, its aims, objectives, as well as a link to the survey. Those that decided to click the survey link were directed to a landing page that provided information about the study (Appendix I) and a request to provide informed consent (Appendix J) before they could access the full survey. Data collection took place over ten

months, from 15 July 2021 to 17 May 2022. Reminders were sent to the participants every two to four weeks.

Data Analysis

The data was captured and analysed using the Statistical Package for the Social Sciences (SPSS-27). Descriptive statistics, means, and reliabilities were generated. Socio-demographic information and information pertaining to the fear of COVID-19, depression, anxiety, and loneliness were analysed by means of descriptive statistics. A correlational analysis was utilised to investigate associations between psychological outcomes (i.e., depression, anxiety, and loneliness) and fear of COVID-19, as well as protective variables (i.e., resilience and social support). Regression analysis was used to assess the association between protective factors (i.e., resilience and perceived support) and psychological outcomes (i.e., depression, anxiety, and loneliness). Mediation and moderation analysis were performed using Hayes (2013) PROCESS MACRO for SPSS.

Reliability and Validity

The instruments utilised in the study have demonstrated to be reliable and valid measures, as previously discussed in the instruments section. Reliability was promoted using instruments with sound psychometric properties. In addition, the validity of the study was ensured using instruments that accurately measure fear of COVID-19, depression, anxiety, loneliness, resilience, and social support. The procedures were executed in a rigorous manner, while adhering to the ethical conditions, ensuring that the study obtains reliability and validity. A detailed methodology has been provided which promotes the study's replicability.

Ethical Considerations

This study adhered to the ethical conditions set out by the University of the Western Cape (UWC). Ethical clearance was obtained from the Biomedical Research Ethics Committee (BMREC: reference: BM21/5/5) (Appendix K). Participants were informed about the nature of the study, the use of data, that participation is completely voluntary, and that they were allowed to withdraw at any given moment without explanation or consequence. Participants confidentiality and anonymity were assured since no personal details were included in the survey. The information sheet provided participants with the contact details of the following organisations should they have experienced any distress due to participation in the study: South African Depression and Anxiety Group (SADAG), Family and Marriage Society of South Africa (FAMSA) and Lifeline. I provided mine and my supervisors' contact details to assist or to address any concerns. All data remained anonymous, as all electronic information and data were stored on a protected electronic device. In addition, all the documents were stored in a secure folder on a password-protected electronic device, which is only accessible to myself. Data will be stored for a minimum period of five years.

Chapter Four: Results

The study aimed to investigate the psychological effects of COVID-19 on mental healthcare workers with regards to their levels of depression, anxiety, and loneliness. In addition, the aims of the study were to investigate the associations between: (i) fear of COVID-19 and specific psychological outcomes; and (ii) specific protective factors and psychological outcomes. Furthermore, the study aimed to investigate the moderating and mediating role of social support and resilience on psychological outcomes.

Descriptive Statistics

The means, standard deviations, and reliabilities (coefficient alpha) are reported in Table 2, including the intercorrelations between fear of COVID-19, mental health outcomes, and protective factors. An acceptable threshold for establishing reliability is an $\alpha > .70$ (Danner, 2016; Ursachi et al., 2015). A reliability of $\geq .80$ is considered very good (Danner, 2016; Ursachi et al., 2015).

Table 2:

Descriptive Statistics, Intercorrelations, and Reliabilities of Scales

	1	2	3	4	5	6	7
1. Fear of COVID-19	1						
2. Resilience	–.02	—					
3. Social Support	–.03	–.32**	—				
4. Loneliness	.21**	–.27**	–.57**	—			
5. Depression	.35**	–.30**	–.32**	.58**	—		
6. State Anxiety	.37**	–.40**	–.27**	.49**	.77**	—	
7. Trait Anxiety	.34**	–.53**	–.32**	.55**	.76**	.81**	—

Mean	14.3	73.5	68.7	36.0	14.5	37.9	37.8
SD	5.2	11.9	11.9	11.3	9.7	10.3	9.2
Alpha	.87	.90	.92	.94	.91	.93	.92

** $p < 01$

Reliability

Table 2 indicates that the internal consistency of each instrument was measured by the Cronbach's alpha coefficient. The reliability value for each instrument indicates acceptable levels of internal consistency in this sample ($\alpha > .86$). The reliability values compare favourably with those reported in the literature (MSPSS: Bruwer et al., 2008; CD-RISC-25: Jorgensen & Seedat, 2008; CES-D: Padmanabhanunni & Pretorius, 2020; UCLA Loneliness Scale: Padmanabhanunni & Pretorius, 2021a; STAI: Padmanabhanunni & Pretorius, 2021b; FCV-19S: Pretorius et al., 2021).

Intercorrelations

The intercorrelations between mental health outcomes (i.e., loneliness, depression, state, and trait anxiety) and protective factors (i.e., resilience and social support) are reported in Table 2. Resilience was negatively related to loneliness ($r = –.27$, $p < .01$), depression ($r = –.30$, $p < .01$), state anxiety ($r = –.40$, $p < .01$), and trait anxiety ($r = –.53$, $p < .01$). This means that high scores on resilience were associated with low scores on loneliness, depression, state anxiety, and trait anxiety.

Social support was negatively related to loneliness ($r = –.57$, $p < .01$), depression ($r = –.32$, $p < .01$), state anxiety ($r = –.27$, $p < .01$), and trait anxiety ($r = –.32$, $p < .01$). This means that high scores on social support were associated with low scores on loneliness, depression, state anxiety, and trait anxiety.

The intercorrelations between fear of COVID-19 and psychological outcomes (i.e., loneliness, depression, state anxiety, and trait anxiety) are reported in Table 2. Fear of

COVID-19 was positively related to loneliness (r = .21, p < .01), depression (r = .35, p < .01), state anxiety (r = .37, p < .01), and trait anxiety (r = .34, p < .01). A significant positive relationship was found; indicating that higher levels of fear of COVID-19 was associated with higher levels of adverse psychological outcomes.

Prevalence of loneliness, depression and anxiety

The mean score reported for loneliness (M = 36.0, SD = 11.3) is substantially lower than the mean scores reported in previous contexts such as Turkey (Eskimez et al., 2019: M = 41.7, SD = 11.5; Kılınç et al., 2020: M = 49.2, SD = 7.9), as well as, in the South African context during the COVID-19 pandemic (Padmanabhanunni & Pretorius, 2021b: M = 49.1, SD = 11.6). Deckx et al. (2014) indicates the following cut-offs for the UCLA Loneliness Scale, scores >64 indicate high levels of loneliness, scores between 50–64 indicate moderately high levels of loneliness, scores between 35–49 indicate moderate levels of loneliness, and scores <35 indicate low levels of loneliness. Using this cut-off, 49% of the current population experienced low levels of loneliness, 40.2% experienced moderate levels of loneliness, 9.3% experienced moderately high levels of loneliness, and 1.5% experienced high levels of loneliness.

The mean depression score of 14.5 (SD = 9.7) is substantially lower than those reported in the South African context during the COVID-19 pandemic (Padmanabhanunni & Pretorius, 2020: M = 27.5, SD = 13.4). The literature indicates the following cut-offs for the CES-D; scores >23 indicate significantly severe levels of depression, scores between 16–23 indicate moderate levels of depression, and scores <16 indicate no to mild levels of depression (Radloff, 1977). Using this cut-off, 61% of the current sample experienced mild levels of depression, 23.2% experienced moderate levels of depression, and 15.8% experienced severe levels of depression.

The mean score reported for state anxiety (*M* = 37.9, *SD* = 10.3) is higher than those reported in previous contexts such as Australia (Crawford et al., 2011: *M* = 32.3, *SD* = 11), whereas, the mean score reported in this sample is lower than those reported during the COVID-19 pandemic in contexts such as Italy (Giusti et al., 2020: *M* = 47.3, *SD* = 11.9), China (Lin et al., 2020: *M* = 48.7, *SD* = 10.8), and Indonesia (Setiawati et al., 2021: *M* = 39.6, *SD* = 11.5). The mean score reported for trait anxiety (*M* = 37.8, *SD* = 9.2) is lower than those reported in previous contexts such as China (Yang et al., 2017: *M* = 43.3, *SD* = 9.2), as well as during the COVID-19 pandemic (Lin et al., 2020: *M* = 45.7, *SD* = 8.5; Padmanabhanunni & Pretorius, 2021b: *M* = 48.1, *SD* = 10.5; Setiawati et al., 2021: *M* = 39.4, *SD* = 7.9). Kayikcioglu et al. (2017) indicates the following cut-offs for the STAI (i.e., state and trait); scores >44 indicate high levels of anxiety, scores between 38–44 indicate moderate levels of anxiety, and scores <38 indicate low levels of anxiety. Based on these cut-offs, 46.7% of our sample experienced low levels of state anxiety, while 30.9% experienced moderate levels of state anxiety, and 22.4% experienced high levels of state anxiety. Furthermore, 50.6% of the sample experienced low levels of trait anxiety, 29.7% experienced moderate levels of trait anxiety, and 19.7% experienced high levels of trait anxiety.

Table 3:

The Direct, Mediating, and Moderating Role of Resilience

Variable	**Beta**	***SE***	**95% CI**	***p***
Direct effects				
Fear → Loneliness	.46	.13	[.20, .71]	<.001
Resilience → Loneliness	–.25	.06	[–.36, –.14]	<.001
Fear → Depression	.63	.10	[.43, .84]	<.001
Resilience → Depression	–.23	.05	[–.32, –.14]	<.001

Fear → State Anxiety	.72	.11	[.52, .93]	<.001
Resilience → State Anxiety	–.33	.05	[–.42, –.24]	<.001
Fear → Trait Anxiety	.59	.09	[.41, .76]	<.001
Resilience → Trait Anxiety	–.40	.04	[–.48, –.33]	<.001
Indirect effects				
Fear→ Resilience → Loneliness	.01	.04	[–.06, .08]	*
Fear→ Resilience → Depression	.01	.03	[–.05, .08]	*
Fear → Resilience → State Anxiety	.01	.05	[–.08, .10]	*
Fear → Resilience → Trait Anxiety	.01	.06	[–.09, .13]	*
Moderating effects				
Fear X Resilience → Loneliness	.01	.01	[–.02, .03]	.61
Fear X Resilience → Depression	.01	.01	[–.01, .02]	.53
Fear X Resilience → State Anxiety	.01	.01	[–.01, .03]	.18
Fear X Resilience → Trait Anxiety	.00	.01	[–.01, .02]	.56

* Evaluated with bootstrap confidence intervals

Table 3 indicates a significant association between fear and loneliness (B = .46, p = <.001). Higher levels of fear are associated with higher levels of loneliness. A significant association between fear and depression (B = .63, p = <.001), fear and state anxiety (B = .72, p = <.001), and fear and trait anxiety (B = .59, p = <.001) was found. A significant negative association between resilience and loneliness was found (B = –.25, p = <.001). A significant negative association between resilience and depression (B = –.23, p = <.001), resilience and state anxiety (B = –.33, p = <.001), and resilience and trait anxiety (B = –.40, p = <.001) was found. None of the indirect effects and moderating effects were significant.

Table 4:

The Direct, Mediating, and Moderating Role of Social Support

Variable	Beta	*SE*	95% CI	*p*
Direct effects				
Fear → Loneliness	.43	.11	[.22, .64]	<.001
Support → Loneliness	–.54	.05	[–.63, –.44]	<.001
Fear → Depression	.63	.10	[.42, .83]	<.001
Support → Depression	–.25	.05	[–.34, –.16]	<.001
Fear → State Anxiety	.72	.11	[.50, .94]	<.001
Support → State Anxiety	–.23	.05	[–.32, –.13]	<.001
Fear → Trait Anxiety	.58	.10	[.39, .78]	<.001
Support → Trait Anxiety	–.24	.04	[–.32, –.15]	<.001
Indirect effects				
Fear→ Support → Loneliness	.04	.07	[–.10, .17]	*
Fear→ Support → Depression	.02	.03	[–.05, .08]	*
Fear → Support → State Anxiety	.01	.03	[–.04, .07]	*
Fear → Support → Trait Anxiety	.02	.03	[–.04, .08]	*
Moderating effects				
Fear X Support → Loneliness	-.01	.01	[–.03, .02]	.62
Fear X Support → Depression	-.02	.01	[–.04, .00]	.12
Fear X Support → State Anxiety	-.01	.01	[–.03, .01]	.41
Fear X Support → Trait Anxiety	-.01	.01	[–.03, .01]	.43

* Evaluated with bootstrap confidence intervals

Table 4 indicates a significant association between fear and loneliness (*B* = .43, *p* = <.001). Higher levels of fear are associated with higher levels of loneliness. A significant

association between fear and depression (B = .63, p = <.001), fear and state anxiety (B = .72, p = <.001), and fear and trait anxiety (B = .58, p = <.001) was found. A significant negative association between support and loneliness was found (B = –.54, p = <.001). A significant negative association between support and depression (B = –.25, p = <.001), support and state anxiety (B = –.23, p = <.001), and support and trait anxiety (B = –.24, p = <.001) was found. None of the indirect effects and moderating effects were significant.

Chapter Five: Discussion

This chapter discusses the results of the data analysis regarding relation to the aims and objectives of the study. The study investigated the psychological effects of COVID-19 on mental healthcare workers with regards to their levels of depression, anxiety, and loneliness. In addition, the study investigated the association between: (i) fear of COVID-19 and specific psychological outcomes (i.e., depression, anxiety, and loneliness), and (ii) protective factors (i.e., resilience and social support), and mental health outcomes (i.e., depression, anxiety, and loneliness) among a sample of South African mental healthcare workers. The study also assessed the moderating and mediating role of resilience and social support on mental health outcomes. There were several significant findings, and these are detailed separately below.

Psychological Effects of COVID-19 on Mental Healthcare Workers

The mean scores for depression, anxiety, and loneliness were lower than those encountered in previous literature, before and during the COVID-19 pandemic (e.g., Setiawati et al., 2021). This suggests that mental healthcare workers were experiencing lower levels of psychological distress compared to other populations such as young adults (Padmanabhanunni & Pretorius, 2021a; Padmanabhanunni & Pretorius, 2021c), healthcare workers (Giusti et al., 2020), and the general population (Lin et al., 2020).

Mental healthcare workers have gained knowledge on the topic of depression, anxiety, and loneliness which is likely to play a role in the amount of psychological distress experienced. Mental healthcare workers have acquired the knowledge on coping techniques which allow them to implement it in their everyday lives, especially during the COVID-19 pandemic (Naidu & Ramlall, 2016). Coping mechanisms such meditation, deep breathing,

progressive muscle relaxation, resilience and support, are able to decrease levels of depression, anxiety, and loneliness.

Fear of COVID-19 and Mental Health Outcomes

The study found a significant positive relationship between fear of COVID-19 and psychological outcomes among mental healthcare workers. This means that heightened levels of fear of COVID-19 were associated with greater psychological distress in the form of heightened symptoms of anxiety, depression, and loneliness.

The results add further support to prior research on the psychological effects of fear of COVID-19 among healthcare workers (Abid et al., 2021; Kayis et al., 2021; Khanal et al., 2021; Satici et al., 2021). For example, a recent study (Abid et al., 2021) conducted in Pakistan reported that fear of COVID-19 played a significant role in determining emotional distress, such as anxiety, depression, and stress, among nurses. Furthermore, the risk of contracting COVID-19 heightened the levels of fear experienced among this group, contributing to greater psychological distress. Another study (Khanal et al., 2021) conducted in Nepal reported that fear of COVID-19 was associated with anxiety and depression among healthcare workers. Khanal et al. (2021) found that nurses experienced higher levels of fear of COVID-19 in comparison to other categories of healthcare workers. Furthermore, healthcare workers experienced stigma from the general population due to working with COVID-19 patients (Khanal et al., 2021). Thus, the possibility of spreading the virus to the public resulted in stigma, which heightened the presence of COVID-19 fear among healthcare workers (Khanal et al., 2021). Sampaio et al. (2021) found that mental healthcare workers experienced fear and anxiety surrounding isolation caused by the COVID-19 pandemic, which served to aggravate their distress. A Turkish study (Satici et al., 2021) concluded that fear of COVID-19, specifically worries about potential contagions, were

associated with an increase in depression and anxiety among the general population. Additionally, another Turkish study by Kayis et al. (2021) determined that an increase in COVID-19 fear was associated with an increase in loneliness and poor mental health among the general population.

COVID-19 is significantly associated with mortality, which can heighten fears of the virus (Ahorsu et al., 2020; Muyor-Rodríguez et al., 2021). Bakioğlu et al. (2021) concluded that chronic health problems play a role in increasing levels of COVID-19 fear due to the increased possibility of being infected. Furthermore, it was found that fear related to COVID-19 increases when individuals present with underlying illnesses (Koçak et al., 2021). Therefore, those with underlying health problems are at greater risk of adverse physical outcomes and mortality if they contract the virus. COVID-19 fear also increases depression and anxiety when individuals have family or friends who previously contracted the virus or died from it (Koçak et al., 2021).

While the present study did not take the association between COVID-19 fear and support systems contracting the virus into account, it is probable that mental healthcare workers had individuals from their support system that contracted or died from COVID-19, which likely led to heightened levels of COVID-19 fear. In South Africa, there is a high prevalence of chronic health conditions, such as hypertension, Tuberculosis (TB), diabetes, cancer, asthma, obesity, and HIV and AIDS (WHO, 2018). Thus, those with chronic illnesses are at an increased risk of COVID-19 fear and mortality.

In South Africa, mental healthcare workers were essential workers during the COVID-19 pandemic due to a dire need for psychological support by individuals and communities. Many mental healthcare workers had to continue seeing clients in person, as many had to work in a hospital or clinical setting. In addition, the high level of socio-economic inequality in South Africa makes telepsychology impossible for many clients, as

many do not have access to mobile devices and internet connection, resulting in the need of face-to-face contact (Goldschmidt et al., 2021). Furthermore, mental healthcare workers, such as social workers, were responsible for physically assisting and supporting communities that have been affected by the COVID-19 pandemic (Okafor, 2021). It is likely that continuous face-to-face interaction with clients have elevated mental healthcare workers fear of contracting the virus and increasing anxiety.

The mental healthcare profession in South Africa is dominated by women with research showing that 78% of women make up the psychology profession (Health Professions Council of South Africa [HPCSA], 2017; Skinner & Louw, 2009). Since most mental healthcare workers are women, lockdown may have led to increased responsibility in the domestic sphere. Women with children had the added responsibility of assisting their children with home schooling due to the closure of schools (Augustus, 2021).

Li et al. (2020) reported that women healthcare workers with two or more children were more susceptible to psychological distress during COVID-19 compared to women who had no children. In 2021, 39% of children in South African urban areas lived with their mother in comparison to the 4.6% of children that only lived with their father (Statistics South Africa, 2021). Furthermore, being a single mother adds additional stress resulting in a decrease in mental health. In addition, women primarily undertake domestic chores, such as cooking and cleaning, and these tasks are more intense due to COVID-19 being highly contagious (Augustus, 2021). Traditional gender roles are prevalent in South Africa, which leads to the burden of domestic responsibilities falling on women.

Mental healthcare workers were essential service workers during the COVID-19 pandemic, with many working at hospitals and clinics while having increased domestic responsibilities at home, such as home schooling. Therefore, all these responsibilities were likely to impact the psychological well-being of women mental healthcare workers.

Additionally, for a portion of the participants, it is likely that they worked from home and used telepsychology to connect with patients (e.g., psychologists in private practices). For these participants, the work-life boundary would have become more blurred, likely impacting the mental well-being of mental healthcare workers (Yildirim & Eslen-Ziya, 2021).

Resilience and Mental Health Outcomes

A significant finding of the study was that resilience served as a protective factor. Higher levels of resilience were associated with greater psychological well-being among mental healthcare workers. Existing studies (Barzilay et al., 2020; Mosheva et al., 2020; Setiawati et al., 2021) undertaken during COVID-19 have underscored the role of resilience as a protective resource.

A study conducted (Mosheva et al., 2020) in Israel concluded that resilience acts as a protective factor against anxiety among physicians. An Indonesian study (Setiawati et al., 2021) found a significant relationship between resilience and anxiety (both state and trait anxiety) experienced by healthcare workers. Furthermore, the study concluded that psychological assistance was required for healthcare workers to increase resilience and avoid the onset of mental health problems (Setiawati et al., 2021). This suggests that mental healthcare workers require the same psychological assistance, due to being essential workers during the COVID-19 pandemic. A study conducted (Barzilay et al., 2020) across numerous countries (e.g., US, Israel, Canada, Germany etc.) concluded that heightened levels of resilience were associated with lower levels of depression and anxiety among healthcare and non-healthcare professionals (e.g., teachers, engineers, researchers etc.). This demonstrates that resilience had an inverse association with negative psychological outcomes across various professional groups, including mental healthcare workers.

Existing South African studies have identified self-care as an important strategy used by mental healthcare workers to cope with stress (Sui & Padmanabhanunni, 2016). It is probable that this builds their resilience in coping with the impact of the pandemic. Self-care techniques, such as having a supervisor and attending personal therapy, has shown to improve resilience (Naidu & Ramlall, 2016).

Social Support and Mental Health Outcomes

The present study found that social support was another salient protective resource. Higher levels of social support were associated with better mental health outcomes (i.e., anxiety, depression, and loneliness) among mental healthcare workers.

The findings are consistent with previous studies which reported a negative association between social support and mental health outcomes, such as depression, anxiety, and loneliness (Chen et al., 2021; Ju et al., 2022). Chen et al. (2021) conducted a study on university students in China, demonstrating that lower levels of perceived social support are a significant predictor of depressive symptoms. Similarly, a Korean study (Ju et al., 2022) conducted on the general population found a significant correlation between social support and depression, this was particularly the case among participants from low-income groups. In addition, Ju et al. (2022) found that having access to social support during times of adversity were important and that lack of social support can negatively affect mental health.

Xiao et al. (2020) conducted a study in China on medical staff treating COVID-19 patients, where it was found that social support reduces anxiety and improves self-efficacy. Self-efficacy improves confidence to do a good job and, when this is combined with a strong support system, mental healthcare workers will have a decrease in loneliness (Xiao et al., 2020).

According to the literature reviewed, in cases where social support was low, the most common mental health outcome was loneliness (Chen et al., 2021; Grey et al., 2020). This is consistent with the findings of the current study. Furthermore, the results suggest that mental healthcare workers were experiencing an increase in loneliness possibly due to the lack of social support from relatives, friends, colleagues, and supervisors. In addition, mental healthcare workers' experience of loneliness may have been exacerbated when taking sole responsibility for decisions made about clients (Rokach & Boulazreg, 2020). For example, decisions are often made when choosing a client's treatment plan and especially when mental healthcare workers are faced with ethical dilemmas (Knaap et al., 2015). Furthermore, it is suggested that mental healthcare workers may have avoided close contact with their support systems in the hopes of reducing the risk of infecting them, which might have increased social isolation resulting in increased levels of loneliness and anxiety (Mosheva et al., 2020).

Receiving social support from family members, friends, and colleagues has a positive impact on mental health. When these social support systems were able to provide emotional support and share empathy, it yielded positive mental health outcomes (Ortiz-Calvo et al., 2022; Xiao et al., 2020). Furthermore, increased levels in social support have shown to be associated with increased sleep quality and reduced stress levels (Grey et al., 2020; Xiao et al., 2020). Thus, by improving social support, loneliness is likely to decrease, thereby suggesting that social interactions have a significant impact on reducing emotions and improving mood (Xiao et al., 2020).

On the contrary, lower levels of social support were associated with other psychological outcomes, such as stress and PTSD (Guo et al., 2021; Ortiz-Calvo et al., 2022). In addition, the lower the social support, the lower the quality of life (Li et al., 2021b). Thus, social support is an imperative coping mechanism that can decrease poor mental health outcomes and improve positive feelings (Alnazly et al., 2021).

It is probable that the mental healthcare workers in the current study were able to draw on their supportive networks during the pandemic. Most of the participants in this study were in a relationship or were married, demonstrating that many participants had a form of social support. In addition, mental healthcare workers often work in environments where they can seek support from supervisors and colleagues (Naidu & Ramlall, 2016). Having supportive environments at home and work is likely to contribute to the increase in social support. Furthermore, social support can be improved through individual psychotherapy, as it has been demonstrated that individual therapy can be beneficial for most mental healthcare workers (Naidu & Ramlall, 2016; Rokach & Boulazreg, 2020).

Moderating and Mediating Role of Resilience and Social Support

The study found that the direct effects of resilience and social support were inversely associated with mental health outcomes. Thus, the results indicate that resilience and social support are potential protective factors for mental health outcomes associated with the COVID-19 pandemic among mental healthcare workers. The findings are consistent with previous studies, where increased resilience and social support were associated with positive mental health outcomes (Noh & Park, 2022). In addition, the study found no moderating or mediating effects for resilience and social support relative to mental health outcomes.

Various literature has found that resilience mediates the relationship between fear of COVID-19 and mental health outcomes, specifically depression and anxiety (Belen, 2022; Yıldırım & Güler, 2021). This means that higher resilience leads to people presuming that they are better equipped to cope with the pandemic, and this reduced their level of COVID-19 fear, which leads to better psychological outcomes. Similarly, for social support, higher levels of social support leads to people perceiving themselves as having sufficient support to cope with the pandemic and this reduced their level of COVID-19 fear, which improved mental

health outcomes. Conversely, this present study found that resilience and social support does not act as a mediator between fear of COVID-19 and mental health outcomes, since no significant associations were found. A lack of significant associations implies that fear of COVID-19 affects psychological outcomes but not through the influence of resilience and social support among mental healthcare workers.

According to the literature reviewed, resilience and social support have mediating effects on psychological outcomes (Hou et al., 2020; Noh & Park, 2022). This means that resilience mediated the association between social support and mental health outcomes, and the same applies to the mediating role of social support. People who are resilient are more likely to be surrounded by strong social networks, which act as a source of support during times of adversity (Hou et al., 2021). In addition, resilient individuals tend to have positive perceptions about current situations, implying that perceived social support would be higher among resilient individuals (Hou et al., 2021). The studies conducted by Hou et al. (2021) and Noh and Park (2020) included populations of nurses, young adults, and university students. However, at the time of this research, no other research studies have focused on the mental healthcare profession. This mediating role between protective factors and psychological outcomes was not discussed in this study; however, further research may be recommended on this sample population.

Chapter 6: Conclusion

Based on the findings, fear of COVID-19 had a significant positive relationship with depression, anxiety, and loneliness. Mental healthcare workers had to continue to work in clinical and hospital settings in their capacity as essential workers, which heightened levels of COVID-19 fear thereby increasing levels of psychological distress.

The levels of depression, anxiety, and loneliness were lower than those reported in previous literature. It was found that mental healthcare workers have a wide range of knowledge on various techniques that they implemented on themselves during the COVID-19 pandemic (Naidu & Ramlall, 2016), which the general population were not unaware of. For example, having knowledge on coping mechanisms such as deep breathing, progressive muscle relaxation, and resilience will lower levels of depression, anxiety, and loneliness.

Resilience and social support had a significant inverse association with depression, anxiety, and loneliness. It was found that the implementation of self-care strategies among mental healthcare workers increased levels of resilience and lowered levels of mental health outcomes. Furthermore, having a supportive network decreased levels of psychological distress among mental healthcare workers. Conversely, resilience and social support were found to have a weak correlation with COVID-19 fear. This was suggestive of a negative and non-significant relationship between the variables. Thus, the results confirmed that higher scores on the protective factors measured in this research were an indication of lower scores on mental health outcomes (i.e., depression, anxiety, and loneliness).

No moderating role of resilience or social support were found between fear of COVID-19 and mental health outcomes (i.e., depression, anxiety, and loneliness). However, irrespective of the level of COVID-19 fear, resilience and social support acted as a protective factor against the onset of depression, anxiety, and loneliness. Furthermore, the mediating role of resilience and social support were not significant. This implies that fear of COVID-19

affects psychological outcomes but not through the influence of resilience and social support among mental healthcare workers. The results confirmed that protective factors play a significant role in protecting mental healthcare workers against negative mental health outcomes. In conclusion, the results confirm that the COVID-19 pandemic has certain psychological effects on mental healthcare workers in South Africa.

Limitations

A few limitations have been identified in the study. Firstly, the current study utilised a cross-sectional design, which restricted the ability to make causal inferences. Secondly, limited research studies have been conducted in the research area, including research based on mental healthcare workers and within developing countries, such as South Africa. This limited the number of comparisons made between this study's results and the results of previous studies. Thirdly, the sample size was small, limiting the representativeness of the sample. Fourthly, self-reported questionnaires were used, causing a potential risk of response bias. Lastly, males were underrepresented in this study causing an imbalance between males and females. However, it needs to be borne in mind that women dominate the mental healthcare profession in South Africa and elsewhere, and this is reflected in the sample (HPCSA, 2017). Although this was mentioned in the literature, this could have led to potential bias in the results.

Recommendations

Longitudinal research needs to be conducted on the psychological effects of COVID-19 on mental healthcare workers in South Africa. Longitudinal research will further close the gap within research based on this population group in South Africa, and it will determine if similar results to this study can be obtained.

There is a need for interventions to be developed to enhance resilience and social support among mental healthcare workers. Studies have shown that certain interventions such as the buddy system and peer support improves mental health (Van Mol et al., 2021). In addition, providing mental healthcare workers with self-help books and online courses on improving resilience can decrease mental health outcomes (Van Mol et al., 2021). Through the development and implementation of interventions surrounding resilience and social support, mental healthcare workers will be able to deal with crises, which would likely reduce the onset of future psychological distress (Setiawati et al., 2021).

It is recommended that mental healthcare workers access certain techniques to improve resilience. Firstly, it is encouraged that mental healthcare workers access supervision, given that consulting with supervisors can increase resilience when faced with challenging client cases (Naidu & Ramlall, 2016). Secondly, mental healthcare workers should attend personal therapy to cope with the impact of the profession and working with challenging client cases (Naidu & Ramlall, 2016). Both supervision and personal therapy provides additional support, which is likely to improve levels of resilience.

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Appendix A: Socio-demographic Questionnaire

Socio-demographic Questionnaire

Please provide the following information:

Gender:

Male	Female	Other

Age: participants are required to type an answer in years.

Registration Category: Clinical Psychologist, Counselling Psychologist, Counsellor or Social Worker

Years of experience in the field: participants are required to type an answer in years.

Highest level of education: Bachelor's Degree or Advanced Diploma, Honours Degree or Postgraduate Diploma, Master's Degree, Doctoral or Other.

Relational status:

Single	In a relationship	Engaged	Married	Divorced	Other

Appendix B: Fear of COVID-19 Scale (FCV-19S)

Fear of COVID-19 Scale (FCV-19S)

Instructions: Please respond to each item by indicating which one of the five (5) responses reflects how you feel, think or act towards COVID-19.

Fear of COVID-19 Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I am most afraid of COVID-19.					
2. It makes me uncomfortable to think about COVID-19.					
3. My hands become clammy when I think about COVID-19.					
4. I am afraid of losing my life because of COVID-19.					
5. When I watch news and stories about COVID-19 on social media, I become nervous or anxious.					
6. I cannot sleep because I'm worrying about getting COVID-19.					
7. My heart races or palpitates when I think about getting COVID-19.					

Appendix C: Connor-Davidson Resilience Scale (CD-RISC-25)

Connor-Davidson Resilience Scale (CD-RISC-25)

Instructions: Read each statement carefully and indicate how you feel about each statement.

0 – Not true at all.

1 – Rarely true.

2 – Sometimes true.

3 – Often true.

4 – True nearly all the time.

	0	1	2	3	4
1. I am able to adapt when changes occur.					
2. I have one close and secure relationship.					
3. Sometimes fate or God helps me.					
4. I can deal with whatever comes my way.					
5. Past successes give me confidence.					
6. I try to see the humorous side of things when I am faced with problems.					
7. Having to cope with stress can make me stronger.					
8. I tend to bounce back after illness, injury or other hardships.					
9. I believe most things happen for a reason.					
10. I make my best effort, no matter what.					
11. I believe I can achieve my goals, even if there are obstacles.					
12. Even when hopeless, I do not give up.					
13. In times of stress, I know where to find help.					
14. Under pressure, I stay focused and think clearly.					

	0	1	2	3	4
15. I prefer to take the lead in problem-solving.					
16. I am not easily discouraged by failure.					
17. I think of myself as a strong person when dealing with life's challenges and difficulties.					
18. I make unpopular or difficult decisions.					
19. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.					
20. I have to act on a hunch.					
21. I have a strong sense of purpose in life.					
22. I feel like I am in control.					
23. I like challenges.					
24. I work to attain goals.					
25. I take pride in my achievements.					

Appendix D: Multidimensional Scale of Perceived Social Support (MSPSS)

Multidimensional Scale of Perceived Social Support (MSPSS)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully and indicate how you feel about each statement.

1 - **Very Strongly Disagree**

2 - **Strongly Disagree**

3 - **Mildly Disagree**

4 - **Neutral**

5 - **Mildly Agree**

6 - **Strongly Agree**

7 - **Very Strongly Agree**

	1	2	3	4	5	6	7
1. There is a special person who is around when I am in need.							
2. There is a special person with whom I can share my joys and sorrows.							
3. My family really tries to help me.							
4. I get the emotional help and support I need from my family.							
5. I have a special person who is a real source of comfort to me.							
6. My friends really try to help me.							
7. I can count on my friends when things go wrong.							
8. I can talk about my problems with my family.							
9. I have friends with whom I can share my joys and sorrows.							
10. There is a special person in my life who cares about my feelings.							
11. My family is willing to help me make decisions.							
12. I can talk about my problems with my friends.							

Appendix E: UCLA Loneliness Scale

UCLA Loneliness Scale

Instructions: Indicate how often each of the statements below is descriptive of you.

C indicates "I often feel this way"

S indicates "I sometimes feel this way"

R indicates "I rarely feel this way"

N indicates "I never feel this way"

	C	S	R	N
1. I am unhappy doing so many things alone.				
2. I have nobody to talk to.				
3. I cannot tolerate being so alone.				
4. I lack companionship.				
5. I feel as if nobody really understands me.				
6. I find myself waiting for people to call or write.				
7. There is no one I can turn to.				
8. I am no longer close to anyone.				
9. My interests and ideas are not shared by those around me.				
10. I feel left out.				
11. I feel completely alone.				
12. I am unable to reach out and communicate with those around me.				
13. My social relationships are superficial.				
14. I feel starved for company.				
15. No one really knows me well.				
16. I feel isolated from others.				
17. I am unhappy being so withdrawn.				
18. It is difficult for me to make friends.				
19. I feel shut out and excluded by others.				
20. People are around me but not with me.				

Appendix F: Center for Epidemiological Studies-Depression Scale (CES-D)

Center for Epidemiological Studies-Depression Scale (CES-D)

Instructions: Below is a list of ways you might have felt or behaved. Please indicate how often you have felt this way during the past week.

Rarely or none of the time (Less than 1 day) = 0

Some or little of the time (1-2 days) = 1

Occasionally or a moderate amount of the time (3-4 days) = 2

Most or all of the time (5-7 days) = 3

	0	1	2	3
1. I was bothered by things that usually don't bother me.				
2. I did not feel like eating; my appetite was poor.				
3. I felt that I could not stop myself from feeling unhappy even [with] help from my family or friends.				
4. I felt that I was just as good as other people.				
5. I had trouble keeping my mind on what I was doing.				
6. I felt depressed.				
7. I felt that everything I did was an effort.				
8. I felt hopeful about the future.				
9. I thought my life had been a failure.				
10. I felt fearful.				
11. My sleep was restless.				
12. I was happy.				
13. I talked less than usual.				
14. I felt lonely.				
15. People were unfriendly.				
16. I enjoyed life.				
17. I had crying spells.				
18. I felt sad.				
19. I felt that people dislike me.				
20. I could not get “going”.				

Appendix G: State-Trait Anxiety Inventory (STAI)

State-Trait Anxiety Inventory (STAI)

Instructions: A number of statements which people have used to describe themselves are given below. Read each statement and choose which statement indicates how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1 - Not at all

2 - Somewhat

3 - Moderately so

4 - Very much so

State-Trait Anxiety Inventory Form Y-1

	1	2	3	4
1. I feel calm.				
2. I feel secure.				
3. I am tense.				
4. I feel strained.				
5. I feel at ease.				
6. I feel upset.				
7. I am presently worrying over possible misfortunes.				
8. I feel satisfied.				
9. I feel frightened.				
10. I feel comfortable.				
11. I feel self-confident.				
12. I feel nervous.				
13. I am jittery.				
14. I feel indecisive.				
15. I am relaxed.				
16. I feel content.				
17. I am worried.				
18. I feel confused.				
19. I feel steady.				

20. I feel pleasant.				

State-Trait Anxiety Inventory Form Y-2

1 - Almost never

2 - Sometimes

3 - Often

4 - Almost always

	1	2	3	4
21. I feel pleasant.				
22. I feel nervous and restless.				
23. I feel satisfied with myself.				
24. I wish I could be as happy as others seem to be.				
25. I feel like a failure.				
26. I feel rested.				
27. I am "calm, cool, and collected".				
28. I feel that difficulties are piling up so that I cannot overcome them.				
29. I worry too much over something that really doesn't matter.				
30. I am happy.				
31. I have disturbing thoughts.				
32. I lack self-confidence.				
33. I feel secure.				
34. I make decisions easily.				
35. I feel inadequate.				
36. I am content.				
37. Some unimportant thought runs through my mind and bothers me.				
38. I take disappointments so keenly that I can't put them out of my mind.				
39. I am a steady person.				
40. I get in a state of tension or turmoil as I think over my recent concerns and interests.				

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Appendix H: Invitation

Invitation

Good Day,

I hope this email finds you well.

I am a MA Psychology (Thesis) student at the University of the Western Cape (UWC). I am currently in the process of gathering data for my study, the study aims to investigate the psychological effects of the COVID-19 pandemic on mental healthcare workers in South Africa. My study focuses on mental healthcare workers, such as registered Clinical and Counselling Psychologists, Counsellors and Social Workers residing in South Africa. It is required that you have practising within your field of work during the COVID-19 pandemic. It would be much appreciated if you could partake in the study by completing the attached survey, all ethical standards will be followed.

Please see the link below to access the survey:

https://docs.google.com/forms/d/e/1FAIpQLSfgkl4pGgoEe7djAQvK3tcYCv1vt65vOTJhp6v9AYwpXJfrkA/viewform?usp=sf_link

Thank you for your time, it is much appreciated!

Kind regards,

Kayla Calvert

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Appendix I: Information Sheet

Information Sheet

Project Title: The psychological effects of the COVID-19 pandemic on mental healthcare workers in South Africa.

What is this study about?
This is a research project being conducted by Kayla Calvert at the University of the Western Cape (UWC). We are inviting you to participate in this research project because you are a mental health worker that has worked during the COVID-19 pandemic. The purpose of this research project is to investigate the psychological effects of COVID-19 on mental healthcare workers in South Africa.

What will I be asked to do if I agree to participate?
You will be asked to complete an online survey of approximately 45 minutes. The online survey consists of one socio-demographic questionnaire and six self-report instruments. The instruments will measure fear of COVID-19, resilience, social support, depression, anxiety, and loneliness.

Would my participation in this study be kept confidential?
To ensure your anonymity, the survey is anonymous and will not contain information that may personally identify you. To ensure your confidentiality, all electronic information and data will be password protected, which only the primary researcher will have access too. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?
All human interactions and talking about self or others carry some amount of risks. We will nevertheless minimise 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. Participants will be provided with the contact details of the South African Depression and Anxiety Group (SADAG), Family and Marriage Society of South Africa (FAMSA), and Lifeline should they experience any distress while participating in the study. In an event that an individual experiences distress as a consequence of participation in the study, 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 the psychological effects of COVID-19 on mental healthcare workers. We hope that, in the future, other people might benefit from this study through improved understanding of how COVID-19 can affect the mental health of mental healthcare workers. This study also hopes to act as a resource in promoting the development of preventative and coping methods for mental healthcare workers.

Do I have to be in this research and may I stop participating at any time?
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 if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?
This research is being conducted by **Miss Kayla Calvert**, Psychology Department at the University of the Western Cape. If you have any questions about the research study itself, please contact **Miss Kayla Calvert** at: **4117359@myuwc.ac.za/calvertkayla@gmail.com**. This research study is being supervised by **Prof. Anita Padmanabhanunni** and **Mr. Brendon Faroa.**
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:

Head of Department:

Prof. Anita Padmanabhanunni
Psychology Department
University of the Western Cape
Robert Sobukwe Rd
Bellville
7535
apadmana@uwc.ac.za

Dean of the Faculty of Community and Health Sciences:

Prof. Anthea Rhoda
Community and Health Sciences
University of the Western Cape
Robert Sobukwe Rd
Bellville
7535
arhoda@uwc.ac.za

This research has been approved by BMREC i.e. BMREC, Research Development.
Tel: 021 959 4111
Email: research-ethics@uwc.ac.za

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee (Ethics Reference Number – BM21/5/5)

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Appendix J: Informed Consent Form

Informed Consent Form

Title of Research Project: The psychological effects of the COVID-19 pandemic on mental healthcare workers in South Africa.

The study has been described to me in a 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. If you have any questions about the research study itself, please contact Miss Kayla Calvert at: 4117359@myuwc.ac.za

Participant's name…….

Participant's signature…….

Date……

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Appendix K: Ethical Clearance

09 July 2021

Ms KL Calvert

Psychology

Faculty of Community Health Sciences

Ethics Reference Number: BM21/5/5

Project Title: The psychological effects of the COVID-19 Pandemic on mental health workers in the Western Cape.

Approval Period: 05 July 2021 – 05 July 2024

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.

Any 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.

Permission to conduct the study must be submitted to BMREC for record-keeping.

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

Appendix L: Confirmation of Editorial Review

Confirmation of Editorial Review

22 November 2022

Natalie Donaldson
6 Melville Road, Plumstead, Cape Town,
7800

Email: natalied@sacap.edu.za
Tel.: 071 593 3690

To whom it may concern,

This is to confirm that Kayla Calvert's Master of Arts in Psychology thesis, titled "*The psychological effects of the COVID-19 pandemic on mental healthcare workers in South Africa*", underwent a full editorial review that was concluded on 8 November 2022. This included, proofreading, editing, and checking referencing and formatting according to APA 7 guidelines.

Should you have any questions or concerns, please feel free to contact me at natalied@sacap.edu.za.

Kind regards,

Natalie Donaldson
(PGDHE; Master of Social Science (Psychology))