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Faculty of Community and Health Sciences
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The psychological impact of the COVID-19 pandemic on South African school teachers.

Thesis submitted in partial fulfillment of the requirements of the MPsych degree

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Declaration

This work has not been previously submitted in whole, or in part, for the award of any other degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced in accordance with the APA 7 guidelines.

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Abstract

Education falls under one of the vital services that was severely disrupted by the psychological aftermath of the COVID-19 pandemic. Currently, international research indicates that the pandemic has had a significant impact on mental health. The aim of this study was to explore the psychological impact of COVID-19 on a sample of South African school teachers, by investigating the levels of fear of COVID-19, anxiety, depression, and life satisfaction within this cohort. In addition, this study aimed to investigate the role of ego-resilience and perceived social support as protective factors in mental health outcomes. The sample consisted of South African teachers (*n*=122) currently registered with the South African Council for Educators (SACE) from the school sector, that were full-time practicing teachers during the COVID-19 pandemic. The study utilised a cross sectional research design, implemented via an online survey, which comprised of the Fear of COVID-19 Scale, the Centre for Epidemiologic Studies Depression Scale, the Generalized Anxiety Disorder Seven Questionnaire, the Satisfaction with Life Scale, the Ego Resiliency Scale, and the Multidimensional Scale of Perceived Social Support. Data was analysed using SPSS-Version 26™. In addition, descriptive statistics such as measures of frequencies and measure of means were used to analyze the levels of each construct. One sample t-tests were also utilized to compare sample means. Inferential statistics was done using Pearsons r to perform correlational analysis of the association between psychological outcomes and protective factors. Hayes process model was utilized to assess mediation and moderation effects between variables. Key findings indicate that half the teachers in this study had high levels of fear of COVID-19, generalized anxiety, and depression. Furthermore, findings confirmed that fear of COVID-19 plays a major role in negative psychological outcomes. Depression was found to be a mediator, showing that increased levels of COVID-19 fear, heightens depression, which in turn, lowers life satisfaction. In conclusion, the pandemic had a significant, negative psychological impact on South African teachers.

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Chapter 1: Introduction

1.1. Background

On 5 March 2020, the COVID-19 pandemic reached South Africa (Mkhize, 2020). In response, on 15 March 2020, South African President Cyril Ramaphosa declared a state of disaster and the country was placed under a 'hard lockdown'. Restrictions included a strict curfew, enforcement of face mask use in all public spaces, social distancing, preventative hygiene practices, reducing movement of non-essential workers, and prohibiting the sale of alcohol, cigarettes, and non-essential products (Dlamini-Zuma, 2020). These drastic measures were taken due to the high mortality associated with COVID-19. Even with these 'hard lockdown' restrictions, 112,280 excess deaths were reported during this period (Bradshaw et al., 2021), with at least 47 899 confirmed as COVID-19 related deaths (Mkhize, 2021). During this time, police and military were utilised to enforce COVID-19 related prevention measures to curb the spread of the virus. Amongst these immediately enforced measures was the immediate closure of schools and universities (Spaull & van der Berg, 2020).

In terms of the mortality rates in schools at the time, children were reported to be relatively safe (Dong et al., 2020; Sinha et al., 2020). However, concerns around the safety of teachers necessitated the closure of schools. Despite the closures, the Department of Basic Education (DBE) reported that 409 teachers passed away during the initial pandemic (i.e., the first COVID-19 wave and part of the second wave), with 16 495 teachers having contracted the virus as of January 2021 (Gerber, 2021). A month later, the DBE updated the number of teachers who had passed away and reported that 1169 teachers had succumbed to COVID-19 since the start of the pandemic (Matangira et al., 2021).

In response to the crisis, as part of their COVID-19 Risk-Adjusted Strategy, the DBE implemented online learning and announced a phased approach to returning learners and teachers back to classrooms when it was safe to do so. During the interim, online learning,

home schooling, and distance learning would be utilised, with formal examinations delayed until later in the year (Motshekga, 2020). The sudden changes, constant updating of government Gazettes, rising mortality, uncertainty relating to their profession, and the global feeling of uncertainty brought on by the pandemic placed teachers in a stressful and uncertain position. Ultimately, the situation forced teachers to adapt to online teaching pedagogies. Taking them from an environment where they were highly skilled and proficient into an unknown medium that they needed to adapt to quickly and, in most cases, without the appropriate resources. On average, South African teachers are 43 years old and newer online methods are not a familiar teaching medium to many (Mpofu, 2020).

Despite these lockdown restrictions being designed to curb the spread of the virus, restrictions such as school closures and other lockdown regulations also had unforeseen consequences for teachers and learners. One of these consequences was the possible loss of income amongst the adult population (Stats SA, 2020), which could have included the households of both teachers and parents. Stats SA (2020) also indicated that, with the loss of income came increasing levels of hunger, made even worse by school closures, as many learners benefited from feeding schemes implemented at the various schools that were now closed (van der Berg, 2020).

Furthermore, an international study highlighted the possibility of lockdown regulations worsening levels of depression, anxiety, substance abuse, child abuse, fear, loneliness, and domestic violence within individual households (Brooks et al., 2020; Galea et al., 2020). This is also indicated in a local study that found that, during lockdown, a sample of young South African adults indicated increased levels of anxiety and loneliness, while also experiencing decreased levels of life satisfaction (Padmanabhanunni & Pretorius, 2021).

Closed schools not only leave learners vulnerable, but also leave teachers with the difficult task of helping their learners complete the curriculum despite all the above-mentioned

psychosocial challenges (Spaull & van der Berg, 2020; UNICEF South Africa, 2021). Thus, between the virus itself and the lockdown mechanisms put in place to curb it, teachers have experienced increased responsibilities and are under immense psychological pressure to navigate both professional and personal challenges.

1.2. Problem statement

Teachers were under pressure to not only adapt quickly to the 'new normal' but also to execute their duties well for the sake of their learners. The media also highlights the fear and anxiety around COVID-19 that teachers experienced (Njilo, 2021; Pikol, 2021). Teachers not only dealt with the aforementioned challenges but also had to navigate the stressful situation of adapting to blended and phased approaches that formed part of returning to face-to-face teaching in 2021 after a long period of school closures in 2020 (Motshekga 2020; Njilo, 2021; Pikol, 2021).

Minimal research had been conducted on the psychological stressors that South African teachers experienced, making both assisting them and conducting further research challenging. The aim of this study was to investigate the psychological impact of the COVID-19 pandemic on South African school teachers and to assess the extent to which protective factors played a role in psychological outcomes. This study aimed to contribute to the existing body of knowledge and improve our understanding of the nuances of how teachers were affected. Hopefully, in-turn, this could assist in the development or enhancement of interventions in this regard.

1.3. Research rationale

Internationally, there is a rapidly growing body of research on the psychological effects of the COVID-19 pandemic (Vindegaard & Benros, 2020). However, South African studies are limited. Locally and internationally, the available literature indicates that the pandemic has far-reaching short-term and, possibly, long-term psychological implications. This includes but

is not limited to anxiety, depression, insomnia (Alkhamees et al., 2020; Tee et al., 2020; Vindegaard & Benros, 2020), and post-traumatic stress disorder (Blekas et al., 2020). Much of the international research reports that teachers have experienced high levels of anxiety, depression, and stress related symptoms due to the sudden changes in lifestyle, increase in workload, and the shift to an online teaching format (Ozamiz-Etxebarria et al., 2020; Truzoli et al., 2021).

In February 2021, despite the imminent prediction of a second wave of infections, South African schools reopened via a phased approach (Lindeque, 2020; Times Live, 2021). On 10 June 2021, the country entered the third wave of COVID-19 infections (Jimoh, 2021) and, in December 2021, it entered the fourth wave of the COVID-19 pandemic (Winde, 2021). While still concerning, the fourth wave was reported to be less severe than the previous waves, with lower rates of hospitalisation and fewer critical cases (Mahase, 2022). However, during the third wave, the media highlighted an increase in stress, fear, and anxiety experienced by teachers returning to face-to-face teaching (Njilo, 2021; Pikol, 2021).

The phased approach was initially implemented using rotational teaching at the end of 2020, where learners attended school in person every second day or week. Some schools had learners attend school either during the morning or the afternoon, rotating learners to keep within COVID-19 protocols. The expectation was that learners continue to work during their ‘off’ periods (Business Tech, 2021). This system, according to the National Teachers’ Union, placed great pressure on teachers due to a general lack of staff numbers to make this system work effectively. At times, this meant that some teachers were forced to teach subjects that they were not familiar with (Bolowana, 2020). This system was still in place during the fourth wave of the pandemic (Business Tech, 2022).

Overall, there are very few studies that have focused on the psychological impact that the COVID-19 pandemic has had on teachers in South Africa, with each wave bringing

different challenges in the ever-changing education landscape. The aim of this study was to address this gap in the literature.

1.4. Research aim

The aim of this study was to investigate the psychological impact of the COVID-19 pandemic on South African teachers.

1.5. Research objectives

The objectives of this research were as follows:

1. To determine the psychological effects of the pandemic on school teachers in relation to fear of COVID-19, anxiety, depression, life satisfaction, ego-resilience, and perceived social support.
2. To investigate the association between protective factors (i.e., ego-resilience and perceived social support) and negative psychological outcomes (i.e., anxiety, depression, and low life satisfaction).

Based on the literature (Aperribai et al., 2020; Nabe-Nielsen et al., 2021; Silva et al., 2021), it was hypothesised that South African teachers would experience high levels of negative psychological outcomes during the COVID-19 pandemic. As such, the following hypotheses were tested:

Hypothesis 1 (H_1). *South African teachers experienced high levels of fear of COVID-19 during the pandemic.*

Hypothesis 2 (H_2). *South African teachers experienced high levels of anxiety during the pandemic.*

Hypothesis 3 (H_3). *South African teachers experienced high levels of depression during the pandemic.*

Hypothesis 4 (H_4). *South African teachers experienced low levels of life satisfaction during the pandemic.*

In addition, it was hypothesised that the negative psychological outcomes (fear of COVID-19, depression, and anxiety) would have negative relationships with life satisfaction and the purported protective factors. Life satisfaction may also have a positive relationship with the purported protective factors. Finally, the negative psychological factors may be related as they often appear together in the literature. The following hypotheses were tested accordingly:

Hypothesis 5 (H_5). *Fear of COVID-19 is negatively associated with life satisfaction*.

Hypothesis 6 (H_6). *Depression is negatively associated with life satisfaction.*

Hypothesis 7 (H_7). *Anxiety is negatively associated with life satisfaction*.

Hypothesis 8 (H_8). *Fear of COVID-19 is negatively associated with ego-resilience*.

Hypothesis 9 (H_9). *Depression is negatively associated with ego-resilience*.

Hypothesis 10(H_{10}). *Anxiety is negatively associated with ego-resilience*.

Hypothesis 11 (H_{11}). *Fear of COVID-19 is negatively associated with perceived social support.*

Hypothesis 12 (H_{12}). *Depression is negatively associated with perceived social support*.

Hypothesis 13 (H_{13}). *Anxiety is negatively associated with perceived social support*.

Hypothesis 14 (H_{14}). *Life satisfaction is positively associated with ego-resilience*.

Hypothesis 15 (H_{15}). *Life satisfaction is positively associated with perceived social support.*

Hypothesis 16 (H_{16}). *Fear of COVID-19 is positively associated with depression*.

Hypothesis 17 (H_{17}). *Fear of COVID-19 is positively associated with anxiety*.

Hypothesis 18 (H_{18}). *Anxiety is positively associated with depression*.

The literature highlights that mental health conditions may increase one's susceptibility to the negative psychological outcomes caused by COVID-19 (Cullen et al., 2020; Özdin & Bayrak Özdin, 2020; Satici et al., 2021; Vindegaard & Benros, 2020). Given this, the mediating relationships of anxiety and depression were examined in relation to the association

between fear of COVID-19 and life satisfaction. This was to consider whether the presence of depression or anxiety played a role in the interaction between fear of COVID-19 and life satisfaction. The following hypotheses were examined:

Hypothesis 19 (H_{19}). *Anxiety mediates the relationship between fear of COVID-19 and life satisfaction.*

Hypothesis 20 (H_{20}). *Depression mediates the relationship between fear of COVID-19 and life satisfaction.*

Finally, the two protective factors identified in the literature (Grey et al., 2020; Özmen et al., 2021; Özmete & Pak, 2020; PeConga et al., 2020; Preti et al., 2020), needed to be examined. Hence, the moderating roles of ego-resilience and perceived social support were examined in relation to the interaction between negative psychological factors and life satisfaction. The following hypotheses were examined:

Hypothesis 21 (H_{21}). *Ego-resilience moderates the relationship between fear of COVID-19 and life satisfaction.*

Hypothesis 22 (H_{22}). *Ego-resilience moderates the relationship between depression and life satisfaction.*

Hypothesis 23 (H_{23}). *Ego-resilience moderates the relationship between anxiety and life satisfaction.*

Hypothesis 24 (H_{24}). *Perceived social support moderates the relationship between fear of COVID-19 and life satisfaction.*

Hypothesis 25 (H_{25}). *Perceived social support moderates the relationship between depression and life satisfaction.*

Hypothesis 26 (H_{26}). *Perceived social support moderates the relationship between anxiety and life satisfaction.*

1.6. Delineation of chapters

This dissertation consists of six chapters. The first chapter has provided a summary of

the literature and contains the research background, problem statement, rationale, aim, and objectives, for the study. The second chapter contextualises the study by describing relevant literature pertaining to the topic. Chapter three provides a description of the methods used to guide the study. Chapter four outlines the results obtained in this study and the fifth chapter provides a discussion of the data in relation to relevant literature. Finally, chapter six provides a conclusion of the dissertation along with recommendations for future research.

Chapter 2: Literature review

Globally, teachers served as frontline workers and continued to perform their duties during the COVID-19 pandemic. Available literature however, indicates that performing their duties under these conditions has culminated in a myriad of negative outcomes on their mental health (Aperribai et al., 2020; Nabe-Nielsen et al., 2021; Silva et al., 2021). The following literature review explores this statement by engaging with the available research to appropriately contextualise this study.

2.1. The impact of COVID-19 and the 'new' educational landscape

The closure of schools brought major challenges for teachers as the pandemic interrupted education and a major shift needed to occur in the way teachers performed their duties. Schools were initially closed by the DBE, with teaching shifting to distance or online learning mediums (SA Disaster Management Act, 2020). During 2021, a risk adjusted strategy was implemented, with a phased approach of returning learners to school (Motshekga, 2020). This phased approach meant that learners returned to school on a rotational basis, keeping the number of learners physically in schools to a minimum, to mitigate the risk of COVID-19 infections. Learners were allowed to return through using the appropriate protective measures (Gungubele, 2022) and rotational schooling, which still continues in 2022 (Business Tech, 2022). The end result, in relation to two years of online teaching, as well as the rotational teaching, was a significant loss of contact time with learners (Schleicher, 2020; World Bank & UNICEF, 2021).

It was found that, during the pandemic, South African learners were approximately a whole school year behind due to this loss of contact time. The unpredictable nature of the practicalities of schooling during the pandemic, rotational attendance, as well as 'off' days, meant that 54% of learning time was lost (UNICEF South Africa, 2021). This placed teachers under immense pressure, since teachers can only adapt what they are teaching to accommodate the loss of time up to a point before there is simply too much work to cover in the time

available. Research indicates a growing disconnect between what the curriculum expects and what can reasonably be delivered in the time allotted, which negatively impacts learners (Spaull & van der Berg, 2020). It also impacts teachers as it has become partly up to them to assist in adjusting the curriculum while also finding new ways to implement it. This negatively impacts the level of challenges teachers face and, in turn, their general wellbeing (UNICEF South Africa, 2021).

New responsibilities for teachers included other unforeseen additions to their workload, such as the expectation to work after hours to implement catch-up plans (Ramrathan, 2020). Due to the nature of online work, teachers were also required to be available and present throughout the day at their workstations (Jones & Kessler, 2020). Furthermore, due to online teaching, teachers now had to work harder to develop online content, with existing class content needing to be converted into a digital format and teachers needing to review how they assess learners (Agarwal & Malik, 2021).

This was required even though many teachers had limited experience in using digital teaching technology and online platforms (Khlaif et al., 2020; Mpofu, 2020). In relation to this, the effective implementation of online learning varied due to teachers having different competency levels with information communication technology. As a result, learning outcomes varied, and many teachers had to quickly upskill in modalities they had never worked with before. This caused uncertainty and put further stress on teachers (Khlaif et al., 2020; Mpofu, 2020), especially those with less access to resources to implement these changes effectively.

In South Africa, the DBE created an extensive online help guide to assist teachers in making this shift. This in conjunction with various partners included resources such as zero-rated websites (i.e., websites that can be accessed for no data cost from certain networks), broadcasting of educational TV and radio shows, podcasts, and access to online learning platforms (DBE, 2020) such as the science, technology, engineering, and mathematics digital

school (Africa Teen Geeks, 2020). Despite all the support and assistance, the situation was still not optimal as some teachers lacked physical resources and/or online teaching skills (Mukuna & Aloka, 2020; Mpofu, 2020).

The pressure to recover lost time, lack of clarity on how to do this, and difficulties with the shift to online teaching is an issue felt both locally as well as on the international front (Ramrathan, 2020). The literature indicates that teachers in other developing nations struggled to adjust face-to-face curriculums into online pedagogies (Khlaif & Salha, 2020; Khlaif et al., 2020). They found that similar to South Africa, their workload increased substantially, and that not everyone was equally prepared for digital education. Furthermore, a general lack of resources for poor and under resourced learners caused frustration and created unequal opportunities (Khlaif & Salha, 2020; Khlaif et al., 2020). The lack of time to prepare for the sudden shift was cited along with the lack of infrastructure as some of the major challenges experienced by teachers internationally. Teachers in most countries were also predominantly trained in using offline mediums and struggled to adapt their skill set to working entirely online (Jain et al., 2021; Khlaif et al., 2020). This caused uncertainty and further stress for teachers (Khlaif et al., 2020; Mpofu, 2020), especially those with less access to resources to implement these new changes.

In South Africa, steps were taken to solve these challenges relating to infrastructure and training. The previously mentioned online teaching media by the DBE was an effort to bridge the gap and to lower the impact of suddenly shifting into online teaching. In fact, this was one of South Africa's largest total public expenditures on education that year in comparison to the overall total government expenditure for the same year (Schleicher, 2020). Despite this, historically poor and rural schools still struggled to provide teachers the necessary resources to implement online learning strategies during the COVID-19 pandemic (Du Plessis, 2020; Mukuna & Aloka, 2020).

South African public schools are funded by the government to different degrees and

private schools are funded entirely by parents. The level of funding assigned to a public school by the government is determined by considering the level of wealth of the parents in the areas the schools serve. These schools are then assigned a number from one to five. Quintile one to three schools receive the highest level of government funding, serving the poorest areas, while quintile four and five schools receive the least amount of government funding due to these schools being in more affluent areas (White & van Dyk, 2019). However, historically private schools and quintile four and five schools, where parents pay higher school fees, are better resourced than quintile one, two and three schools that rely predominantly on government funding. In other words, they are potentially better equipped to transition to online learning (Isaacs, 2020). This highlights the possibility that teachers in schools, serving the poorest areas, may have higher levels of stress due to numerous resource constraints.

Finally, in terms of practical changes to their work environment, teachers found themselves more worried during the pandemic about learner absenteeism (Jones & Kessler, 2020). Teachers needed to track their learners and their progress, while also assisting the parents to support their children with schoolwork. This was a challenging task made even more difficult because many parents in under-resourced settings may not have the knowledge, skills and resources to assist their child to navigate remote learning (World Bank & UNICEF, 2021). Thus, the full responsibility fell on the teachers to assist the learners where parents could not help.

This situation culminated in having to cope with not only the above professional challenges but also, like many other frontline workers, dual roles at home. Teachers would need to tend to their own children and/or dependents, manage their own mental health impacted by the pandemic, manage their own households, all while adapting to constant shifts in educational policy and practices (Aperribai et al., 2020, Santamaría et al., 2021).

2.2. The psychological consequences of COVID-19

The pandemic has caused pervasive feelings of fear and anxiety (Serafini et al., 2020). Studies have shown that during the pandemic people have been experiencing high levels of fear of COVID-19, anxiety and depression which has caused distress in the general population (Fitzpatrick et al., 2020;Kar et al.,2021; Serafini et al., 2020). This distress is exacerbated by broader social challenges, such as the rise in domestic violence, worsening mental health, emotional isolation, uncertainty about job security, distress over management of resources, and the possible loss of income (Kontoangelos et al.,2020;Galea et al., 2020; Pfefferbaum & North, 2020; Raphael, 2006; van der Berg, 2020). A rapid review of the available literature conducted by Brooks and colleagues (2020) indicates that people experience many negative feelings during quarantine, such as stress, anger, irritability, fear, depression, insomnia, confusion, frustration, and boredom.

Not all people experience significant psychological distress equally in relation to major stressors. In the general population, some people are more vulnerable than others to the psychological impact of a lockdown and the consequences of the pandemic. This includes those who have contracted COVID-19, those who are at an increased risk of COVID-19 due to comorbid medical conditions, people with pre-existing mental health conditions, people with substance use problems, as well as the elderly and immune compromised individuals (Kontoangelos et al.,2020; Pfefferbaum & North, 2020). These vulnerability factors were experienced to a greater or lesser degree by the general population and put them at varying levels of risk for negative psychological outcomes (Alkhamees et al., 2020; Choi et al., 2020; Kontoangelos et al.,2020; Hyland et al., 2020; Pfefferbaum & North, 2020).

Teachers form part of the general population and experience similar challenges and vulnerabilities in addition to their own unique difficulties as teachers. In other words, like most frontline workers, teachers need to manage both the unique challenges of their profession such as burnout, change management, and proximity to the illness (Khlaif et al., 2020; Nabe-

Nielsen et al., 2021; Ozamiz-Etxebarria et al., 2020; Silva et al., 2021), as well as these possible vulnerability factors and psychosocial challenges experienced by the general population.

A study specifically conducted with teachers showed that they had elevated levels of stress, anxiety, and depression, with female teachers being more affected than males (Santamaría et al., 2021). Furthermore, COVID-19 related psychological distress in teachers has been shown to predict COVID-19 related burnout which, in turn, can cause depression (Karakose et al., 2022).

In terms of challenges at home, Santamaría et al., (2021) reported that teachers with children showed more depressive symptoms than those who did not have children. Single parent households are more vulnerable, likely due to the increase in responsibilities at home in conjunction with their professional responsibilities. Furthermore, those that suffered from a chronic illness, or who lived with someone that suffered from a chronic illness, also exhibited greater signs of depression, anxiety, and stress (Santamaría et al., 2021). This, therefore, highlights the possible impact that a teacher's home life, alongside the challenges experienced professionally, may have on their psychological wellbeing.

In summation, the implementation of rapid and severe measures such as lockdown, quarantine, and stringent preventative social and hygiene protocols, has had psychological, social, and economic consequences on the lives of individuals. These consequences can have a cumulative knock-on effect (Galea et al., 2020), causing negative psychological outcomes, such as an increase in fear, anxiety, depression, and a decrease in life satisfaction (Cao et al., 2020; Choi et al., 2020; Ettman et al., 2020; Hyland et al., 2020; Özmen et al., 2021; Serafini et al., 2020).

2.2.1. Fear of COVID-19

Fear is the most common negative psychological outcome associated with the COVID-19 pandemic (Serafini et al., 2020). Fear is a natural defensive response that allows humans to navigate external threats. However, prolonged, or acute exposure to fear – as experienced within the COVID-19 pandemic – can have adverse mental health consequences. This includes physical and psychological health challenges such as loss of appetite, sleep disturbance, nausea, increased alcohol or drug consumption (Dymecka, Machnik-Czerwik, et al., 2021), increases in anxiety (Garakani et al., 2006) as well as depression (Padmanabhanunni et al., 2022).

Karakose et al. (2021) investigated COVID-19 phobia, which is an extreme fear related condition centred on the virus and everything connected to its effects. They reported that the negative effects of experiencing high levels of COVID-19 phobia had a greater impact on female teachers who demonstrated a higher degree of fear of COVID-19. Female teachers also showed a higher degree of negative psychological outcomes associated with COVID-19 phobias, such as disproportional cognitive, affective, or behavioural responses in relation to COVID-19 related stimulus, such as extreme fear, anxiety, and panic (Karakose et al., 2021). Specific to teachers, a local study (Padmanabhanunni et al., 2022) highlights that greater perceived vulnerability to disease also increases fear of COVID-19. The literature further supports the fact that in relation to teacher's long-term exposure to excessive amounts of fear of COVID-19 leads to negative psychological outcomes (Li et al., 2020; Karakose et al., 2021).

2.2.2. Increased levels of depression and anxiety during the pandemic

In relation to the COVID-19 pandemic, anxiety and depression have been identified as common mental health outcomes (Choi et al., 2020; Hyland et al., 2020; Mazza et al., 2020; Serafini et al., 2020; Ozamiz-Etxebarria et al., 2021; Silva et al., 2021). Historically,

depression has been shown to be positively related to anxiety (Headey et al., 1993), and various studies conducted during the COVID-19 pandemic have found high levels of anxiety and depression within their samples (Choi et al., 2020; Hyland et al., 2020; Mazza et al., 2020; Ozamiz-Etxebarria et al., 2021; Özdin & Bayrak Özdin, 2020; Santamaría et al., 2021; Silva et al., 2021). Recent literature indicates that high levels of fear of COVID-19 is related to both high levels of depression and anxiety. Perceived vulnerability to COVID-19 infection can heighten the experience of fear of the virus, which in-turn heightens depression and anxiety (Padmanabhanunni et al., 2022). Research has also indicated that, despite anxiety and depression being psychological outcomes that present very differently and sometimes contrarily, they may be correlated due to psychological distress as a common factor (Xie et al., 2012).

In terms of prevalence, even before the COVID-19 pandemic, a South African study (Tomlinson et al., 2009) reported a 4.9% lifetime prevalence rate for depression, with women appearing to be almost twice as likely to experience a depressive episode. Another local study, with a sample of female South African school teachers, found a 15% prevalence of depression before the pandemic (Domingo et al., 2015). In relation to anxiety, it has also been shown to be more common amongst women than men (Karakose et al., 2021; Li et al., 2020). Prevalence for anxiety disorders in the South African general population before the pandemic was shown to be 15.8% (Stein et al., 2008). Another study (Van Heyningen et al., 2017) conducted before the pandemic on low-income pregnant women in urban South Africa reported findings indicating 23% of their sample met the criteria for some form of an anxiety disorder.

During the COVID-19 pandemic the prevalence for both anxiety and depression increased greatly. The prevalence for anxiety disorders globally increased by 25.6% and the prevalence for depressive disorders increased by 27.6% during the pandemic (Santomauro et al., 2021). The literature indicates that teachers specifically experienced high levels of

depression and anxiety during the pandemic (Ozamiz-Etxebarria et al., 2021;Santamaría et al., 2021; Silva et al., 2021).

Even prior to the pandemic, teachers have been identified as a vulnerable population group. High levels of burnout, anxiety and depression have been identified among teachers (Domingo et al., 2015;Harmsen et al., 2018; Karakose et al., 2022; Ryan et al., 2017; Steyn & Kamper, 2006). These pre-existing vulnerabilities may exacerbate the impact of the pandemic on mental health and partially explain the presence of higher levels of depression and anxiety amongst this group.

The literature also presents another reason for the origins of high anxiety levels during the pandemic. A link between the fear of COVID-19, the measures taken to curb COVID-19, and anxiety has also been reported (Brooks et al., 2020; Serafini et al., 2020; Vindegaard & Benros, 2020). Restrictions and lockdown measures led to fear and uncertainty about life in general, fear of getting infected, and fear of infecting one's family. This fear then led not only to pervasive anxiety but also to depression, social isolation, and post-traumatic stress (Brooks et al., 2020; Serafini et al., 2020). A local study (Padmanabhanunni & Pretorius, 2021) has suggested that increased levels of loneliness due to social distancing measures may account for heightened levels of depression. Loneliness appears to lead to hopelessness which, in turn, can aggravate depression (Padmanabhanunni & Pretorius, 2021). Serafini and colleagues (2020) concur with these findings and link pervasive loneliness to depression and suicidality. Research also indicates a link between ruminating on COVID-19 and an increase in anxiety (Lee, 2020).

During the pandemic, teachers experienced anxiety specifically related to the new challenges that were brought up by the pandemic, such as the migration online, dual roles as parents and teachers, lack of social contact, and lack of resources (Pressley et al., 2021; Silva et al., 2021). In South Africa some schools lacked appropriate personal protection equipment and some schools utilize pit latrine toilets or lack running water, which would have made

proper hygenic practices during the pandemic very difficult (Jones, 2021; Mukuna & Aloka, 2020). Research indicates that prolonged exposure to anxiety provoking situations and high stress environments, such as the ones described above, can lead to the development of anxiety symptoms and disorders (Garakani et al., 2006; Michael et al., 2007) thereby impacting on one's overall satisfaction with life (Stein & Heimberg,2004).

2.2.3. Life satisfaction

Sousa and Lyubomirsky (2001) describe life satisfaction as an acceptance or contentment of one's current life situation that occurs due to a fulfilment of wants and needs. It is a cognitive process that entails a global assessment of one's life, using self-defined criteria (Diener et al., 1985). Measures of life satisfaction consider overall satisfaction over a period of time instead of transient situational factors (Sousa & Lyubomirsky, 2001).

Higher levels of life satisfaction have been associated with positive physical and mental health outcomes (Gigantesco et al.,2019). Low levels of life satisfaction have been related to higher mortality, higher prevalence of suicide and increased risk of mood disorders (Gigantesco et al.,2019).

Life satisfaction has been identified as a predictor of mental health with studies showing that low life satisfaction is strongly related to depression (Baş, 2011;Lewinsohn et al., 1991; Headey et al., 1993). In terms of the association between fear of COVID-19 and life satisfaction, there have been mixed results with some studies demonstrating no association while others report that elevated levels of fear of COVID-19 decreases life satisfaction (Karataş & Tagay, 2021; Satici et al., 2021; Isik et al., 2021; Karagöz et al., 2021).

A recent study (Hu et al. ,2022) highlights the mediating role of social adaption during the pandemic between perceived stress and life satisfaction. The study defines social adaption as a person's ability to adapt their behaviour and thinking to the new circumstances created by the pandemic in order to avoid negative psychological or social outcomes. It was found that

social adaption partially mediates the relationship between perceived stress and life satisfaction. In other words, perceived stress leads to social adaptions and adjustments to new norms, which in turn leads to better life satisfaction as a person adapts to their circumstances (Hu et al., 2022).

Further research has indicated that life satisfaction can act as a protective factor and not just a measurable indicator for negative psychological outcomes. According to Seo and colleagues (2018) higher life satisfaction appears to be a protective factor in terms of depression. It was also reported that, pertaining to negative emotions and trauma, higher life satisfaction in children mitigates traumatic reactions (Veronese et al., 2019).

2.3. The role of protective and mitigating factors in psychological outcomes

Negative mental health outcomes during the pandemic cannot be considered on their own as this does not provide the full picture since, with any significant crisis, there are protective factors that help to mitigate the impact of the crisis on the individual. These factors can include both individual and external factors and include, for example, self-esteem, resilience, adaptability, hope, social support, income stability, education level, and access to resources (Cao et al., 2020; Demetriou et al., 2021; Serafini et al., 2020). In terms of the COVID-19 pandemic the literature indicates that the negative outcomes of quarantine, for example, can be mitigated by access to adequate resources, financial stability, as well as access to proper medical care (Brooks et al., 2020). Studies focusing on frontline workers highlighted satisfaction at work, strong leadership, open communication, positive coping strategies, and psychological interventions and support as factors that mitigate distress. Positive coping strategies and psychological interventions included positive attitudes, talk therapy, physical exercise, yoga, spiritual practices, mediation, mindfulness, and virtual support groups (Matiz et al., 2020; Obeidat et al., 2022; Shechter et al., 2020; Wu et al., 2020). The current study focused on two protective factors namely, perceived social support and ego-resilience.

2.3.1. Ego-resilience

Ego-resilience was first defined by Block (2002) in relation to his theory of personality. He postulated that each person possessed both the traits ego-resilience and ego-control. Block determined that these two constructs worked together in order to allow a person to adapt appropriately to psychosocial demands (Dunkel et al.,2021; Farkas & Orosz,2015). Farkas and Orosz, (2015) reported that, in relation to Blocks definition, ego-resilience fulfils both its own and ego-controls functions. Considering the available literature (Dunkel et al.,2021; Farkas & Orosz,2015) ego-resilience can be defined as a personality trait allowing a person to respond with the appropriate amount of self-control in response to psychosocial demands, allowing flexible use of problem-solving strategies and active constructive engagement with life.

Ego-resilience focuses on a person's resilience as an enduring personality trait. This differs from the construct of resilience which is defined as a broader process that allows for "positive adaptation, or the ability to maintain or regain mental health, despite experiencing adversity" (Herrman et al,.2011; p.259). They indicate that resilience is a dynamic process that is more than a summation of protective factors but rather a trait affected either positively or negatively by a number of aspects. Resilience is affected by the level of controlled exposure to a hazard, other personal traits, environmental factors, internal coping processes, life changes during adulthood, and damage caused to neural structures via stress or adversity (Herrman et al,.2011).

Despite these different approaches, ego-resilience and resilience overlap. Both measure a person's ability to be stable and flexible in the face of adversity. Ego-resilience however focuses more on flexibility than resilience (Farkas & Orosz,2015). It has been reported that this allows for an adaptive response in a number of situations including ones that cause anxiety (Farkas & Orosz,2015).

The literature indicates that low levels of resilience is associated with greater levels of

worry over the effects of COVID-19 (Killgore et al., 2020). Consequently, higher levels of resilience have been linked to better psychological outcomes and various studies have identified resilience as an effective protective factor against the negative psychological impact of COVID-19 (Özmen et al., 2021; PeConga et al., 2020; Preti et al., 2020). The literature suggests this may be similar in terms of ego-resilience as findings indicate that during adversity or crisis events, those with high levels of ego-resilience are better able to sustain positive levels of general mental health (Hu et al. ,2015).

Sugawara et al., (2021) reported that ego-resilience on its own may not be the most effective protective factor. They examined ego-resilience, sense of control, grit, and self-compassion as overall resilience factors. Ego-resilience, when tested against high COVID-19 fear, was shown to result in increased adverse psychological outcomes. According to the study, this suggests that ego-resilience on its own may not be an effective protective factor but could be considered along with others factors in order to be more effective (Sugawara et al., 2021).

However, other studies have reported findings that indicate raising ego-resilience may be effective. Ego-resilience leads to higher life satisfaction (Cohn et al., 2009) and higher life satisfaction is related to lower levels of negative psychological outcomes, such as depression (Baş, 2011; Headey et al., 1993).

Higher ego-resilience appears to lead to growth in overall happiness, which then leads to growth in life satisfaction. Daily positive emotions lead to higher levels of ego-resilience, with people with higher ego-resilience experiencing higher positive emotions despite experiencing similar levels of negative stressors as their peers. Increasing life satisfaction alone will not increase happiness, instead increases in ego-resilience helps build emotional resources that ultimately generate higher levels of happiness and life satisfaction (Cohn et al., 2009).

Findings relating to resilience also indicate that higher levels of one's ability to adapt to adverse situations and life challenges can lead to lower levels of depression (Zhao et al.,

2021). A study conducted among Chinese medical students found that resilience had a significant negative relationship with depression and that coping styles were a mediating factor between resilience and depression (Zhao et al., 2021). The students that adopted positive coping styles by actively seeking out solutions, effective problem management, adjusting quickly to stressors, and allaying pressure, had higher levels of resilience and lower levels of depression. This was in comparison with students who utilised negative coping styles, such as avoidance, social withdrawal, and self-pitying, which are all factors related to depression and have been shown to exacerbate anxiety (Zhao et al., 2021). Ego-resilience similarly encourages flexible problem solving in individuals in order to effectively navigate challenges (Farkas & Orosz,2015).

2.3.2. Perceived social support

Social support is defined as the process by which a person receives either comfort or aid from others in order to deal with stressors in their lives (Van den Bos,2013). This assistance can be provided by anyone within the persons social network and can involve practical help, information, or emotional support (Van den Bos,2013). In the literature a distinction is made between received social support and perceived social support. Received social support refers to the amount of social support or supportive actions a person has received. This study will focus on perceived social support which relates to how each person assesses the availability, appropriateness and quality of the social support in their life (Eagle et al., 2019; Lindorff, 2000).

The literature highlights the ability of people's perceptions of their social network to impact their mental health. High perceived social support is related to higher levels of positive self-perception and self-esteem. Having high perceived social support provides feelings of positive self-worth, a sense of belonging, instils feelings of safety and security and provides reassurance of a person's perceptions of how others value them (Ioannou et al., 2019). The

literature for example has shown perceived social support to be strongly related with lower levels of depression, while received social support was not. These findings indicate that the way people view their support system may be more important than how much support is actually available to them (Eagle et al., 2019).

Perceived social support is highlighted in the literature as an important protective factor pertaining to negative psychological outcomes. The literature supports that a person's level of perceived social support has a direct negative impact on the level of distress they experience due to the pandemic (Yu et al., 2020). Perceived social support significantly decreases anxiety levels, especially in relation to physical and psychological state anxiety. It was further shown to be a protective factor against depression and assists with positive adaption for those that have experienced trauma (Özmete & Pak, 2020). Grey and colleagues (2020) also reported that high perceived social support is a strong protective factor against depression, with the study finding a 63% lower risk of depression in participants. It has also been shown that increased levels of perceived social support and life satisfaction results in lower levels of burnout (Doğan et al., 2015). Furthermore, perceived social support has been linked to higher levels of life satisfaction (Poudel et al., 2020) and both perceived social support and life satisfaction have been shown to mitigate the influence of negative psychological outcomes such as anxiety, depression, and trauma symptoms (Grey et al., 2020; Özmete & Pak, 2020; Veronese et al., 2019).

A strong social support structure is related to a greater ability to adapt to significant changes and better mental and physical health outcomes (Saltzman et al., 2020), thus social support has been a particular focus of research in relation to the COVID-19 pandemic due to the effects of social distancing. Understanding the nuances of perceived social support and its ability to lower the intensity of negative psychological outcomes is particularly important during mass trauma events, such as the pandemic (Ferber et al., 2022). A study conducted on refugees for example (Ekmen et al., 2021) indicated that perceived social support from family

reduces stress and can increase life satisfaction. The same study, however, found that COVID-19 anxiety acts in a moderating capacity between perceived social support and perceived stress. Thus, high levels of COVID-19 anxiety rendered the benefits of the perceived support ineffective (Ekmen et al., 2021).

Perceived social support appears to be a vital mitigating factor in terms of managing the psychological fallout caused by the pandemic. Social distancing was an important measure during the pandemic to avoid infection, however it may have affected the levels of possible social support due to lower face to face contact. However, the literature has indicated that high levels of social support via even non-face-to-face means is a powerful mitigating factor in relieving psychological distress. In fact, some research has indicated that, during the COVID-19 pandemic, the ability to self-isolate in conjunction with the presence of high levels of social support served as an effective protective factor against negative mental health outcomes (Szkody et al., 2020).

2.4. Conclusion

Chapter 2 has provided an outline of the currently available and relevant literature for the topic of this research project. The literature review described the impact of both COVID-19 and the lockdown, the changes that had occurred in the field of education due to the pandemic, and the various psychological constructs that this research identified as areas to explore. These psychological outcomes were discussed in two groups: 1) consequences, such as fear, anxiety, depression, low life satisfaction; and 2) protective factors, such as resilience and social support. The proceeding chapter discusses the research methodology employed in this study.

Chapter 3: Method

The aim of this study was to investigate the psychological impact of COVID-19 on a sample of South African school teachers and the role of two protective factors (i.e., perceived social support and ego-resilience) on their mental health outcomes. This chapter will outline the various component of the methodology employed to achieve the study aim.

3.1. Research design

This was a quantitative study using a cross-sectional survey design. A survey design provides numerical and quantitative data on a real-world phenomenon, such as trends and experiences, that allows a researcher to measure certain variables, investigate the relationship between the variables, and make inferences between their sample and the general population of their study (Creswell & Creswell, 2017). The survey design is well suited to answering descriptive questions, such as what demographic variables are present, what the level of fear of COVID-19 is, as well as the levels of depression, anxiety, and life satisfaction present in the sample. Further, this design allows for an investigation into the nature of and relationship between variables (Creswell & Creswell, 2017).

This survey followed a cross-sectional study design meaning that, instead of collecting data more than once over a long period of time, this study gathered data at a single point in time to make inferences about a certain population at that point in time (Hall & Lavrakas, 2008).

There are some advantages and disadvantages to a cross sectional survey research design. Online surveys allow researchers to easily access a target population without any geographic restrictions, which is more convenient for both the researcher and the participants. Due to the pandemic and COVID-19 restrictions, this was advantageous. Online surveys allowed the researcher to access very large samples, such as South African teachers spread across the country. Furthermore, cross sectional survey research is cost effective (DeCarlo,

2018). However, online surveys can yield a low response rate and convincing the target population to respond can be challenging (Nulty, 2008).

3.2. Participants and sampling

The sample for this research was DBE registered South African teachers (*n*=122) working in the school sector (i.e., primary schools, high schools, and mixed schools). Participants were also full-time practicing teachers during the COVID-19 pandemic, between 2020-2022.

The study used non-probability sampling, which does not rely on controlled methods to produce a true random sample. Snowball sampling was used, which involved finding participants that met the study's criteria and relying on them to invite others who also met the criteria to participate (De Vos et al., 2011). This study utilised an adapted form of snowball sampling by approaching the administrators of various Facebook groups directly linked to South African teachers. The researcher requested permission from the Facebook groups' administrators to post the advert of the study on their group. The researcher requested, through the Facebook advert, that teachers share the online research survey link with their own networks who fit the sample criteria.

The literature indicates a big draw back in this sampling method occurs when there is weak or no social interaction between participants (Parker et al., 2019). In part this was overcome online as the researcher was able to reshare the post and reactivate the snowball effect. However, ultimately, this was not enough since participation would occur in small bursts before subsiding. This, together with a generally lower turnout rate for online surveys as opposed to in-person ones (Nulty, 2008), may ultimately have led to a smaller sample size than what was planned for.

The sample size was calculated using the Cochran method (Kotrlik & Higgins, 2001), using a 5% margin of error and 95% confidence level. The latest available statistics show that the population of teachers within the school sector equals 447 123 (DBE South Africa, 2022).

Calculations indicate a sample size of *n*=384 would be needed. However, due to low study participation (*n*=122), this was not realised. The sample realisation was *n*=124, however two participants indicated that they were either not SACE registered teachers during the pandemic or that they did not teach during the COVID-19 pandemic from 2020 to 2022. As a result, bootstrapping was applied, where SPSS was used to make 1000 different versions of the original sample data. These data samples could then be compared to determine if a sample was an actual representation of the population norms with a 95% confidence interval (Chernick & LaBudde, 2014).

The central limit theorem, used with the bootstrapping method, allowed the researcher to make meaningful comments on the data with a sample of *n*=122, within the limitations of the study. The central limit theorem requires a minimum of 30 to 50 participants to apply, stating that the distribution of means within the sample approximates normal distribution of means within the population as the sample grows in size, regardless of how the population is distributed (Ross, 2017). The bootstrapping method also allows for inferential analysis to take place despite the sampling technique chosen. This is due to bootstrapping providing a way of determining representation between the sample and the population with a 95% confidence interval regardless of sample randomisation (McCormick & Salcedo, 2017).

3.3. Instruments

The following section contains all relevant details pertaining to the demographic survey utilised in this study as well as the self-report instruments (see Appendix A). For the instruments, their reliability and validity are described, the reason for their inclusion are discussed, and all the relevant statistics pertaining to each instrument are explained.

3.3.1. Demographic survey

The demographic part of the survey (Section 1, Appendix A) comprised of age, gender, and years in the field of education. It further asked about contact with COVID-19, in what

manner, and the opportunity was given to choose more than one point of contact with the virus per participant. Options varied from indicating that the participant personally contracted the virus to indicating if someone in their household, close circle, or extended family, contracted the virus. An option was also given for those who never had any contact with the virus.

To better understand the stressful nuances of teaching during the pandemic, participants were asked about the type of schools they taught in, what quintile school they had taught in, what resources were available for them to teach during the pandemic, and how experienced they were in the use of the online teaching technology. Finally, there were also questions pertaining to if they were registered teachers and if they had actively been teaching during the pandemic; these were included to ensure participants met sample parameters.

3.3.2. Fear of COVID-19 scale (FCV-19S)

The FCV-19S (Ahorsu et al. 2020; Appendix A) was developed during the COVID-19 pandemic to assist with clinical work and research pertaining to the pandemic. It is a seven-item Likert scale with five points, starting at *Strongly agree* and ending with *Strongly disagree*. The FCV-19S includes items such as *"I am most afraid of Corona"* and *"I cannot sleep because I'm worrying about getting Corona"*.

This instrument has acceptable test-retest reliability at .72 and good internal reliability with a Cronbach's alpha of .82. Further concurrent validity was also established for the FCV-19S by comparing it with the Hospital Anxiety and Depression Scale and the Perceived Vulnerability to Disease Scale, which found significant positive correlations with depression ($r = 0.425$, $p < 0.001$), anxiety ($r = 0.511$, $p < 0.001$), perceived infectability ($r = 0.483$, $p < 0.001$), and germ aversion ($r = 0.459$, $p < 0.001$) (Ahorsu et al., 2020).

Mohsen and colleagues (2022), utilising ROC methods, recently established cut-off scores for the FCV-19S, creating two categories with ≥17.5 categorised as extreme fear of COVID-19 and everything below considered normal to no fear of COVID-19. Their findings

indicate prediction validity in relation to their extreme fear category for depression and anxiety, ranging between 50%-58%. Another study (Nikopoulou et al., 2020) proposed a cut-off score of 16.5, also creating two similar categories of extreme and normal fear of COVID-19. They found significant predictive power in relation to anxiety, health anxiety, and post-traumatic stress symptomatology. This study suggests that the FCV-19S is a good screening measure for identifying excessive fear and, therefore, vulnerability to psychological consequences (Nikopoulou et al., 2020). For the purposes of this study, the ≥17.5 cut-off score was utilised. The Fear of COVID-19 scale has been used previously in South Africa (Padmanabhanunni et al., 2022) and sound internal consistency reliabilities have been reported.

3.3.3. The Generalized Anxiety Disorder 7 questionnaire (GAD-7)

The GAD-7 (Spitzer et al., 2006; Appendix A) was created, not only to screen for possible generalised anxiety disorder cases within the general population, but also to measure the severity of the symptoms experienced. The GAD-7 includes items such as *"Feeling nervous, anxious, or on edge"* and *"Worrying too much about different things"*. It is a seven-item self-report questionnaire, using a four-point Likert scale, with answers ranging from *Not at all* to *Nearly every* day. The GAD-7 has good reliability with a .92 Cronbach's alpha. Cut-off scores suggest 5 for mild anxiety, 10 for moderate anxiety, and 15 for severe levels of anxiety (Spitzer et al., 2006; Williams, 2014).

3.3.4. The Centre for Epidemiologic Studies Depression Scale (CES-D)

The CES-D (Radloff, 1977; Appendix A) was designed to measure the epidemiology of depressive symptomatology within the general population. Measurements are based on the presence of the nine types of depressive symptoms as identified within the DSM, as well as rating them in relation to how long they have been present within the person's life. The CES-D is a twenty-item self-report Likert scale instrument consisting of four points. This ranges from

Rarely to *All of the time*. The CES-D includes items such as *"I felt that I could not shake off the blues even with help from my family or friends"* and *"I thought my life had been a failure"*.

This instrument has shown to have acceptable internal reliability with a Cronbach's alpha of .85 (Radloff, 1977). In terms of cut-off scores, the original study provided one of >16 (Radloff, 1977). However, others have attempted to optimise these cut-off scores but have ended up with several cut-off scores differing greatly between gender and ethnicity (Henry et al., 2018). Vilagut and colleagues (2016) completed a metanalysis of 28 CES-D studies and produced a cut-off score of ≥20, with a sensitivity of 0.83 and a specificity of 0.78 as their proposed optimal screening measure for the presence of significant depressive symptoms. This study utilised ≥20 as its cut-off score.

3.3.5. The Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS (Zimet et al., 1988; Appendix A) measures the level of perceived social support an individual has in relation to their significant other, friends, and family. This is a twelve-item Likert scale instrument, with each item having its own unique seven-point Likert scale answers. Answer options range from *Very strongly agree* to *Very strongly disagree* or from *Rarely* to *All of the time*. The MSPSS includes items such as *"There is a special person with whom I can share my joys and sorrows"* and *"I can talk about my problems with my family"*.

Reliability has been proven with an overall Cronbach's alpha of .93. The MSPSS lacks cut-off scores, except for a bigger score equalling higher perceived support by the individual (Zimet et al., 1988). Like the ER89 scale discussed below, a median split will be utilised. The median for this scale is 64, thus low perceived social support falls within 13-63 and high perceived social support falls within 64-84 (Iacobucci et al., 2015).

3.3.6. The Satisfaction with Life Scale (SWLS)

The SWLS (Diener et al., 1985; Appendix A) measures a person's general satisfaction with their life. This instrument has five Likert scale items measured on a seven-point scale, which ranges from *Strongly agree* to *Strongly disagree*. The SWLS includes items such as *"In most ways my life is close to my ideal"* and *"If I could live my life over, I would change almost nothing"*.

The SWLS has good reliability with a Cronbach's alpha of 0.87. In terms of cut-off scores that were used in this study, there are 7 categories that were suggested by the original authors, ranging from a person being extremely satisfied to extremely dissatisfied with their life. Categories include 31-35 being extremely satisfied, 26-30 being Satisfied, 21-25 being Slightly satisfied, 20 being Neutral, 15-19 being Slightly dissatisfied, 10-14 being Dissatisfied and, finally, 5-9 being Extremely dissatisfied (Pavot & Diener, 2009).

3.3.7. Ego Resiliency Scale (ER89)

The ER89 (Block & Kremen,1996; Appendix A) measures the ability an individual has to adjust their level of ego-control appropriately to their current situation. In other words, the ability to return to normal ego function as soon as possible after a stressful environmental factor is not directly or acutely present for the individual (Prince-Embury, 2013). The ER89 is a ten-item Likert scale instrument using seven points. Answers range from *Strongly applies* to *Does not apply at* all. The ER89 includes items such as *"I quickly get over and recover from being startled"* and *"I usually think carefully about something before acting"*.

The ER89 has good reliability with Cronbach's Alpha being higher than .80 (Vecchio et al., 2019). The instrument lacks any clear cut-off scores, with higher scores indicating higher ego-resilience. For the purposes of this research, and for ease of reporting on findings, it was decided to utilise a median split, categorising all data below the median as low resilience and above as high resilience. In terms of this specific study, the median is 42, thus low resilience

falls within 23-41 and high resilience falls within 42-56 (Iacobucci et al., 2015).3.4.

3.4. Data collection procedures

The survey was generated on Google Forms and the researcher approached groups aimed at teachers on the social media platform Facebook. The Facebook groups approached were all aimed at teachers in South Africa. Some of these groups were for South African teachers in general, with some pertaining to registration bodies utilised by South African teachers and others primarily focused on providing teaching resources to South African teachers. The social media post (see Appendix B) directed all interested parties that fit the sample description to a Google Form link. Participants were also encouraged in the Facebook post to share the link with anyone they knew that fit the sample parameters and who would be interested in participating in the study. The link would take the respondent to a landing page containing an information sheet (see Appendix C), which outlined the nature and purpose of the study, as well as information pertaining to confidentiality, anonymity, and voluntary participation. The survey was promoted actively from October 2021 to the start of April 2022 before being deactivated. All raw data was collected from the Google Form page in the form of an excel document.

3.5. Data analysis

All data was processed and analysed using SPSS-Version 26™. The raw data was first obtained from the Google Form in an excel format. This raw data was then cleaned by manually inspecting the data sets, ensuring they were all full and intact and deleting unusable data sets. The data sets that were not usable were removed; this included *n*=2 sets that did not fit the study parameters. The cleaned data set was saved as a master copy and two more copies were created; one copy where all Likert scale data was converted into scale and another copy where all full scores were calculated for all participants. The data was then imported into SPSS-Version 26™ and analysed in the following way.

A combination of descriptive and inferential statistics was used to analyse the data obtained. Descriptive statistics was used to report the frequencies, percentages, mean, median, mode, and range of all demographic data where appropriate. Utilising the cut-off scores, all scales measuring fear of COVID-19, depression, anxiety, life satisfaction, ego-resilience, and perceived social support was presented using descriptive methods (De Vos et al., 2011). This included their mean, median, as well as their standard deviation. The results of each scale were reported in a figure containing the frequency and percentage of each measured construct as determined by the cut-off scores described under section 3.3. Instruments above.

As evident in Table 1 below, all scales had acceptable internal consistency and reliability. According to the literature, an acceptable level for a Cronbach's Alpha is higher than 0.7 (Nunnally, 1978).

Table 1

Cronbach Alpha's

Instrument	N of Items	Cronbach's Alpha
FOC Scale	*n*=7	.93
CES-D	*n*=20	.90
GAD-7	*n*=7	.95
SWLS Scale	*n*=5	.93
ER89 Scale	*n*=14	.83
MSPSS	*n*=12	.96

Inferential statistics and correlational analysis were utilised to investigate the relationship between fear of COVID-19 and the identified psychological outcomes, as well as the relationship between negative psychological outcomes due to COVID-19 and protective factors identified from the literature (De Vos et al., 2011). Comparisons are possible as all six instruments were designed to produce composite scores (Ahorsu et al., 2020; Pavot & Diener, 2009; Radloff, 1977; Vecchio et al., 2019; Williams, 2014; Zimet et al., 1988). Single sample t-testing was used to compare the means from the current sample's instruments with

appropriate means found in the literature from both during and before the pandemic (Howell, 2016).

Pearson's correlation coefficient was chosen to establish if a correlation exists between the variables. Due to the data being gathered by non-parametric means and the nature of the data, SPSS-Version 26™ was used to allow for bootstrapping in conjunction with Pearson's r. The bootstrapping created 1000 slightly different copies of the data set and used these to determine if the findings in the sample represents the population accurately. It produced two coordinates on a normal distribution for each correlation (see Table 5) and, if they do not intersect at zero, the sample represents a 95% confidence interval of the population norms and, therefore, inferences can be made utilising Pearson's r.

To perform a regression analysis and test for mediation and moderation effects, SPSS-Version 26™ was used together with the Stephen Hayes process macro version 4.1. The Hayes process model was utilised by implementing process model 1 and 4 respectively to assess mediation and moderation effects between variables (Hayes, 2017).

3.6. Ethics

All necessary documents were submitted to the Humanities and Social Sciences Research Ethics Committee of the University of the Western Cape (UWC) to obtain ethics clearance for this study (see Appendix D). Permission was also sought from the administrators of the Facebook groups where the survey was posted. The study was anonymous and voluntary, and participants were free to not participate or stop participating at any point without fear of negative consequence. All participants were informed of the aim, nature, and purpose of the study.

In addition, all participants were able to indicate whether they consent to participate and whether the information provided had been understood, prior to granting participants access to the survey items (see Appendix C). All data was securely stored on a password protected system. Data was also not linked to identifying details such as a name. Instead, each

participant was identified with a unique code, ensuring that the data was secure and private. All raw data and metadata will be kept securely for 5 years after publication, after which it will be deleted. Referral options were provided to participants should the study have had an undue impact on them. If distress did occur, participants were provided with the contact details of the South African Anxiety and Depression Group and LifeLine upon agreeing to take part in the study.

3.7. Conclusion

This chapter discussed the research methodology pertaining to this study, including the research design. The research context was explored along with the sample, and the sampling method was discussed in depth as well as the instruments that were utilised during this study. This chapter also gave in depth explanations on how data was collected and analysed. Ethics, as applied within this study, was also discussed. The next chapter describes the data that was obtained during this study and presents it in a coherent format.

Chapter 4: Results

The results of the current study are presented in this chapter. The study aimed to investigate the psychological impact of COVID-19 on South African teachers, including levels of fear of COVID-19, anxiety, and depression, as well as life satisfaction. The study also investigated the role of perceived social support and ego-resilience in psychological outcomes.

4.1. Descriptive statistics

4.1.1. Demographic profile

The sample consisted of school teachers (*n*=122) recruited online from all South African provinces, with most participants (87%) in the study comprising of women. Participants had a mean age of 38.97 (*SD*=11.12) and a mean of 12.98 (*SD*=9.54) in terms of years of teaching experience. Most of the sample (58%) were employed in a South African primary school setting. Forty-five teachers (37%) worked within a South African high school and six teachers (5%) worked in other settings, such as combined or intermediate schools.

Over a quarter of the sample reported having contracted COVID-19 themselves (31%) or reported that someone within their household has had the virus (27%). Most participants (63%) reported knowing of someone close, such as a friend or a work colleague outside of their family, contracting COVID-19, followed closely by those knowing an extended family member that had contracted it (54%). Only four (3%) participants reported not having had any contact or not even knowing of someone close to them that has had COVID-19.

Half the sample (50%) reported instances of only one of the above types of contact with COVID-19. Those that have had two types of contact made up 25% of the sample and those that had three or four types of contact made up 11% of the sample.

Table 2 below indicates the quintile category of teachers in the sample, which are arranged from primarily government funded quintile one schools(i.e., most reliant on government funding, serving the poorest communities) to quintile five schools (i.e., least

reliant on government funding, usually serving the most affluent communities). Slightly under half of the sample worked in more privately funded schools under the quintile four (15%), quintile five (23%) and private school (7%) categories. More than half of the sample worked in schools that received the most government funding, which are the quintile one (25%), quintile two (14%) and quintile three (16%) schools. The largest concentration of participants is from quintile one or quintile five schools.

Table 2

School Quintile Categories

Categories	Frequency	Percentage
Not part of the quintile system, entirely privately funded.	9	7.4%
Quintile 1	30	24.6%
Quintile 2	17	13.9%
Quintile 3	20	16.4%
Quintile 4	18	14.8%
Quintile 5	28	23.0%
Total	122	100%

Of the sample, 25% indicated that they did not make use of any online learning or media platforms to teach their learners during the pandemic. This is corroborated in Table 3 below, where 23% reported that they had not utilised this technology previously. Most of the sample (75%) indicated that they had utilised online learning and media platforms.

Table 3 reports that 43% of teachers were utilising online teaching mediums for the first time during the COVID-19 pandemic. 19% of teachers utilised this technology once or twice before the pandemic, while 13% used it regularly and 3% reported extensive use of online teaching technology before the COVID pandemic. When asked if during the pandemic the teachers made use use of online learning and media platforms to teach students such as WhatsApp, Zoom, Websites etc., 25% indicated that they did not.

Table 3

Experience Using Online Teaching Platforms and Technology

Categories	Frequency	Percentage
I have never made use of these platforms and technology for teaching.	28	23.0%
No, it was not my first time, I have used this technology extensively before the COVID-19 pandemic as well.	3	2.5%
No, it was not my first time, I have used this technology once or twice before the COVID-19 pandemic as well.	23	18.9%
No, it was not my first time, I have used this technology regularly before the COVID-19 pandemic as well.	16	13.1%
Yes, the pandemic was my first time using this technology to teach.	52	42.6%
Total	122	100%

Table 4 highlights how teachers perceived access to resources for performing their teaching duties. This included the technology needed, such as laptops and internet, as well as other necessary resources, such as personal protective equipment for those that had returned to their classrooms. Only 11% of teachers in the sample felt that they were appropriately resourced to perform their duties. Most teachers in the sample (39%) reported that they were appropriately equipped but still needed to rely on at least some of their own resources.

The other half of the sample felt they lacked the appropriate resources, and they are split into two groups: those that had lacked the resources from official channels but had access to and could utilise their own resources to be able to teach (29%); and those that completely lacked access to resources to perform their duties (22%). This means that 51% of the sample either lacked the resources or were forced to find their own means to teach the leaners under their care.

Table 4

Access to Resources to Perform Teaching Duties

Categories	Frequency	Percentage
No, I completely lacked the appropriate resources.	27	22.1%
No, I had to make use of my own resources to teach effectively.	35	28.7%
Yes, I was mostly appropriately resourced but had to make use of some of my own resources.	47	38.5%
Yes, I was completely appropriately resourced.	13	10.7%
Total	122	100%

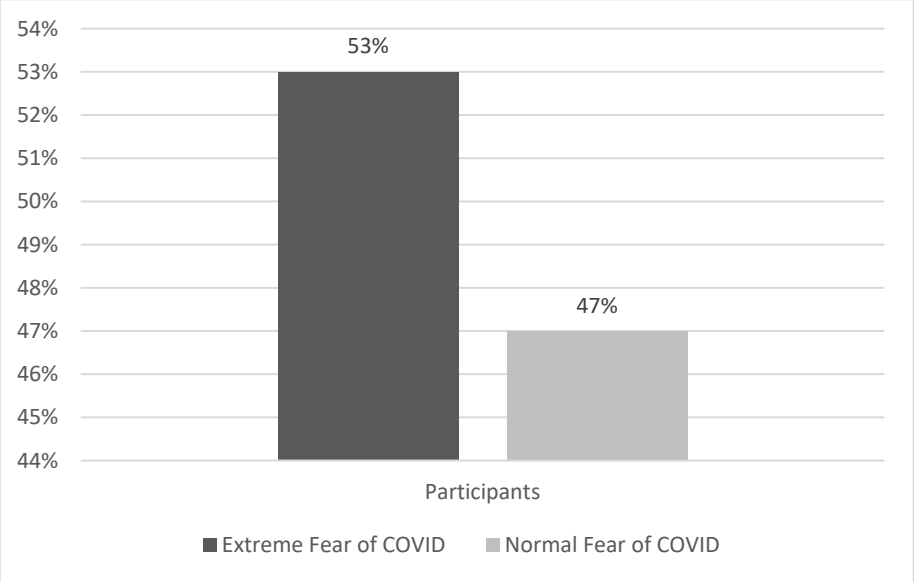
4.1.2. Fear of COVID-19 profile

The Fear of COVID-19 Scale outputs are presented in terms of the measures of central tendency and variability. The mean score for the sample was 18.96 (*SD*= 7.83). The level of fear of COVID-19 in the current study (*M*=18.96, *SD*=7.83) is significantly lower than a South African study (Padmanabhanunni et al., 2022; *M*=20.9, *SD*=7.1) conducted during the pandemic with teachers, t (121) = -2.73, *p* = .007. However, the findings in the current study are significantly higher than a Chinese study (Kukreti et al., 2021; *M*=15.40, *SD*=4.20) also conducted with teachers during the COVID-19 pandemic, *t* (121) = 5.017, *p* <.001. Most studies, however, reported means between 18 to 20 during the COVID-19 pandemic (Doshi et al., 2021; Labrague & de Los Santos, 2021; Luo et al., 2021).

Figure 1 below illustrates the outcomes, which have been divided into extreme fear of COVID-19 and normal fear of COVID-19. This was done in accordance with the cut-off scores as discussed under section 3.3.2 Fear of COVID-19 Scale. The results show that slightly more than half of the sample (53%) had a significant level of fear of COVID-19, meaning they had scored higher than 17.5 in terms of their full scores on this scale.

Figure 1

FCV-19S Outcomes



4.1.3. Depression profile

The CES-D Scale measures level of depressive somatology present in the sample and the results according to central tendency and variability are as follows. A mean score of 20.89 (*SD*=11.22) was reported in terms their CES-D results. Considering CES-D outcomes before the pandemic started, the mean reported in the study (*M*=20.89, *SD*=11.22) was significantly higher than the mean of a Brazilian study (Simor et al., 2019; *M*=15.45, *SD*=9.56) with teachers utilising the CES-D, t (121) = 5.34, p <.001. The mean for the current study was also significantly higher than a pre-COVID study (Hamad et al., 2008; *M*=18.8, *SD*=11.7) conducted with the South African general population, but by a small margin t (121) = 2.051, p = .042. Considering local findings during the pandemic, the mean for the current study was not significantly different than another study (Padmanabhanunni et al., 2022; *M*=21.96, *SD*=12.2) conducted with South African teachers during the pandemic t (121) = -1.057, p = .292.

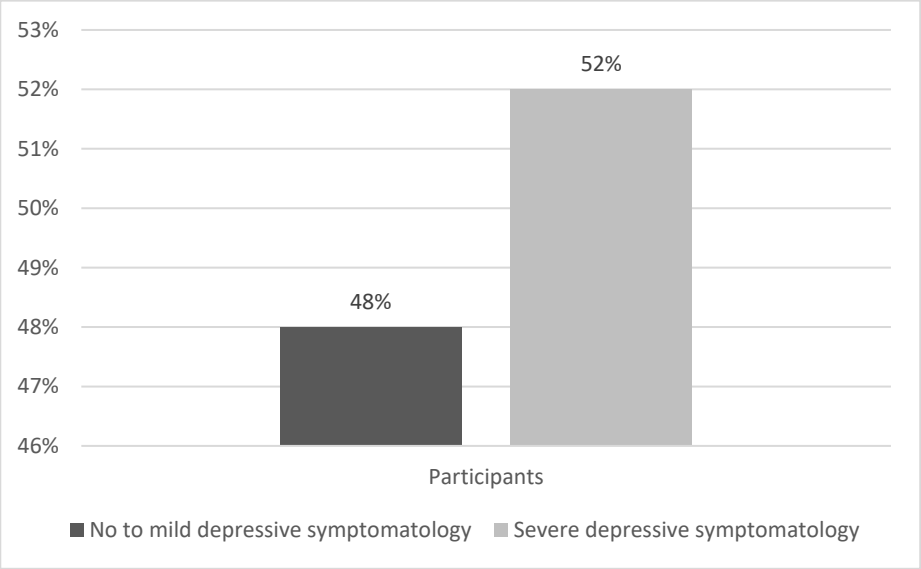
Internationally, however, the mean within the current study was significantly higher than those found during COVID-19 in two different international general populations. It was shown to be significantly higher than the American general population (Fitzpatrick et al., 2020;

M=16.7, *SD*=15.6), *t* (121) = 4.117, *p* <.001. Further its was also significantly higher than the Bahraini general population (Jassim et al., 2021; *M*=16.76, *SD*=5.65), *t* (121) = 4.058, *p* <.001.

Figure 2, in accordance with the cut-off scores provided under the section 3.3.4 The Centre for Epidemiologic Studies Depression Scale, indicates the level of depressive symptomatology present within the sample. According to the results, 52% of the sample experienced some form of significant depressive symptoms, with 48% falling under the threshold for significant depressive symptomatology.

Figure 2

CES-D Outcomes



4.1.4. Anxiety profile

Utilising central tendency and variability, the GAD-7 scores are as follows. The sample had a mean score of 8.92 (*SD*= 6.68). In comparison to the findings from a study conducted with a South African working population before the pandemic (Henn & Morgan, 2019), the current study mean (*M*=8.92, *SD*=6.68) for anxiety was significantly higher than those reported for African working adults (*M*=5.91, *SD*=5.34) *t* (121) = 4.972, *p* <.001. It was also significantly higher than those reported for Caucasian working adults in the same study (*M*=6.28, *SD*=5.31) *t* (121) = 4.972, *p* < .001. Furthermore, considering an international study

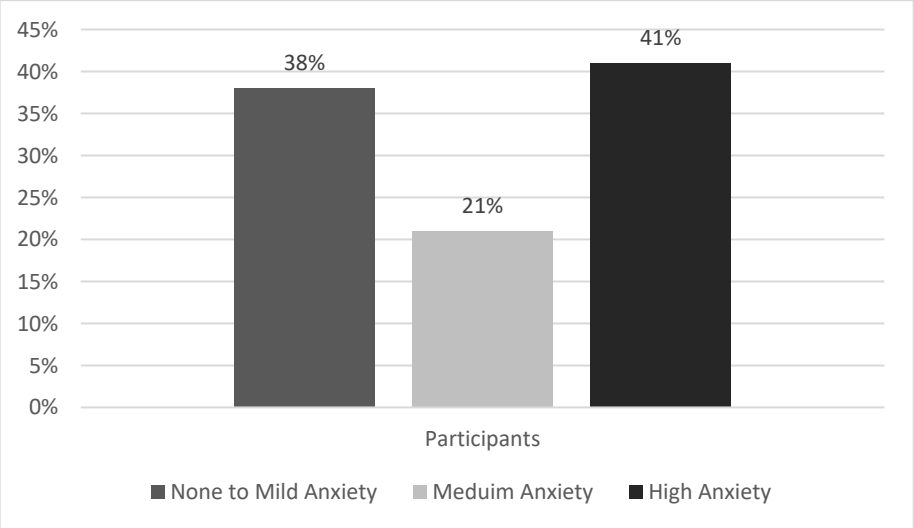
(Hinz et al., 2017; *M*=3.57, *SD*=3.38) completed before the pandemic, the current study's mean was significantly higher than findings in a general population study performed in Germany, t (121) = 8.840, $p < .001$.

Findings during the pandemic for anxiety were also considered. The current study mean was not significantly different than findings from a study (De Man et al., 2022; *M*=9.5, *SD*=6.0) completed on the South African general population during COVID-19, t (121) = -.962, $p = .338$. Considering international findings during the pandemic, the current study mean was significantly higher than those reported for males (*M*=3, *SD*=4.3), t (121) = 9.782, $p < .001$. The current mean was also found to be significantly higher than those reported for female (*M*=3.7, *SD*=5.1) adults from the same USA based study (Sequeira et al., 2021), t (121) = 8.625, $p < .001$.

The cut-off scores obtained, as set out in section 3.3.3. The General Anxiety Seven Questionnaire, was utilised to compile Figure 3 below. This indicates the general level of anxiety experienced by the sample. Most participants experienced high levels of anxiety (41%) and, in conjunction with those that experienced medium levels of anxiety (21%), a very significant part of the sample experienced noteworthy anxiety levels (62%).

Figure 3

GAD-7 Outcomes



4.1.5. Life satisfaction profile

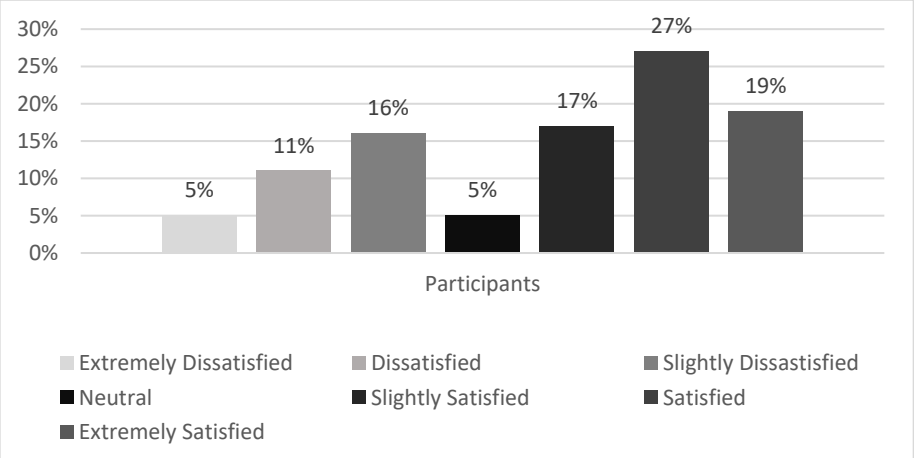
The central tendency and variability of the SWLS indicates a sample mean of 23.29 (*SD*=7.38) pertaining to this study's outcome. A pre-pandemic study with teachers in Istanbul was considered (Tas & İskender, 2018; *M*=21.65, *SD*=6.76) and results show that the current mean (*M*=23.29, *SD*=7.38) is significantly higher, t (121) = 2.306, p = .023.

A local study conducted during the pandemic on young adults (Pretorius & Padmanabhanunni, 2021; *M*=20, *SD*=7.7) indicates that the mean for the current study was significantly higher, t (121) = 4.631, $p < .001$. The current study mean, however, was not significantly different when compared to findings from an international study (Zakeri et al., 2021; *M*=23.60, *SD*=6.14) conducted with frontline nurses from Iran during the COVID pandemic, t (121) = -.441, p = .660.

The SWLS, as described in section 3.3.6. The Satisfaction with Life Scales, highlights the cut off scores utilised in Figure 4 below indicating the level of life satisfaction of teachers in this study. Considering Figure 4, about 63% of the sample indicated some level of satisfaction with their lives while 32% indicated some level of dissatisfaction. 5% of the participants felt neutral with no particular inclination towards either feeling satisfied or dissatisfied with their lives.

Figure 4

SWLS Outcomes



4.1.6. Ego-resiliency profile

Measuring ego-resilience utilising the ER89 produced the following results. The central tendency and variability of the data collected indicates the sample has a mean of 41.34 (*SD*=7.16), and a median of 42. Comparing the current mean (*M*=41.34, *SD*=7.16) to a study conducted with students in Ghana (Cole et al., 2015; *M*=42.94, *SD*=6.19) before the pandemic, it is significantly lower, t (121) = -2.460, p = .015. This finding is similar when comparing the current study mean to a study with American adults (Brelsford & Ciarrocchi, 2013; *M*=45.03, *SD*=5.44), indicating that the current mean is significantly lower than the American findings, t (121) = -5.683, $p < .001$. During the COVID-19 pandemic studies were conducted in the local context on young South African adults (Pretorius & Padmanabhanunni, 2021; *M*=41.4, *SD*=6.8) and the current study mean was not significantly different from these findings, t (121) = -.086, p = .932.

Section 3.3.7. Ego Resiliency Scale describes cut-off scores using the median split method to meaningfully analyse the data pertaining to resilience. These cut-off scores were implemented, indicating the level of resiliency reported within the sample. The predominant number of participants indicated high (54%) levels of resilience with 46% reporting low resilience.

4.1.7. Perceived social support profile

The MSPSS results had mean of 60.4(*SD*=18.3), and a median of 63.6. These measurements indicate the central tendency and variability of the data collected. The current study mean (*M*=60.4, *SD*=18.3) was considered in relation to the results of a study (Van Heyningen et al., 2016; *M*=66.6, *SD*=12.50) conducted before the pandemic on a cohort of South African women and findings indicate that the current mean was significantly lower t (121) = -3.728, $p < .001$. Further comparisons were made to the mean reported for a group of South African youth (Bruwer et al.,2008; *M*=62.9, *SD*=18.04) pre-pandemic and there was no

significant difference t (121) = -1.524, p = .130.

Considering means reported during the COVID-19 pandemic, the current study mean was still significantly lower compared to a group of Turkish teachers (Yenen & Çarkit,2021; M=66.53, SD=16.17), t (121) = -3.728, p < .001. It was also significantly lower when compared to the mean of a cohort of frontline healthcare workers from Turkey (Erin & Bayoğlu Tekin,2021; M=66.55), t = -3.698, p < .001.

The MSPSS data was analysed using the cut-off scores as described in Section 3.3.5. The Multidimensional Scale of Perceived Social Support. The MSPSS measures how supported a person perceives themselves to be in their lives and the data indicates the sample was evenly split (n=61, 50%) between those that perceive that they have a high level of support and those that feel that they do not.

4.2. Inferential statistics

4.2.1. Fear of COVID-19 and psychological outcome variables

Table 5 contains all analysed data pertaining to the correlation between variables, the strength of that correlation, as well as the confidence interval obtained via the bootstrapping method. This section will focus specifically on the psychological outcome variables and their relationship with each other.

Table 5

Intercorrelations, Reliabilities, and Descriptive Statistics for Variables

	1	2	3	4	5	6
1. Fear of COVID-19	—	[.335,.603]	[.307,.617]	[-.394, -.074]	[-.346, -.004]	[-.323,.080]
2. Depressive Symptoms	.481**	—	[.598,.789]	[-.481, -.138]	[-.384, -.074]	[.-.265,.104]
3. Anxiety	.466**	.707**	—	[-.417, -.106]	[.-.352, -.049]	[-.188,.148]
4. Life Satisfaction	-.239**	-.322**	-.276**	—	[.047,.410]	[.511,.764]
5. Ego-resilience	-.184*	-.224*	-.203*	.231*	—	[.-.035,.315]
6.Perceived Social Support	-.130	-.089	-.033	.642**	.134	—
Mean	18.96	20.89	8.92	23.29	41.34	60.41
SD	7.83	11.22	6.68	7.38	7.16	18.34
Alpha	.927	.903	.946	.934	.827	.961

Note. The correlation coefficients are below the diagonal, and the 95% confidence intervals are above the diagonal.

*$p < .05$.

**$p < .01$.

Fear of COVID-19 has a significant correlation with the construct anxiety ($r = .466$, $df = 120$, $p = .00$, 95% *CI* [.307,.617]) at a .01 alpha level. The strength of the correlation is moderate according to the suggested correlation strength parameters given by Dancey and Reidy (2017). The relationship between fear of COVID-19 and anxiety was found to be positive, suggesting that individuals with higher levels of fear of COVID-19 are likely to have higher levels of anxiety present. The bootstrap method indicates that the confidence interval of this correlation does not intersect zero and, therefore, is a 95% accurate representation of population norms.

Fear of COVID-19 also correlates with the depressive symptoms construct ($r = .481$, $df = 120$, $p = .00$, 95% *CI* [.335,.603]) at a .01 alpha level, with a moderate strength correlation.

This relationship is also positive, which further suggests that higher levels of fear of COVID-19 for teachers would also mean higher levels of depressive symptoms. This correlation was also shown to have a 95% accurate confidence interval.

Considering the moderate relationship between fear of COVID-19 and both anxiety and depressive symptoms, it is not surprising that Table 5 also indicates a strong correlation (r = .707, df = 120, p = .00, 95% *CI* [.598,.789]) between anxiety and depressive symptoms at a 0.1 alpha level. This relationship is positive with a 95% confidence interval, which further highlights that a higher level of anxiety also often indicates a higher level of depressive symptoms and vice versa.

Fear of COVID-19 has a negative correlation (r = -239, df = 120, p = .008, 95% *CI* [-.394, -.074]) with life satisfaction at a 0.1 alpha level and a confidence interval of 95%. Despite its alpha level significance, the strength of this correlation is weak. The weak negative correlation indicates an inverse relationship, which indicates that higher levels of COVID-19 fear is correlated with lower levels of life satisfaction.

Life satisfaction also has a weak to moderate correlation (r = -322, df = 120, p = .00, 95% *CI* [-.481, -.138]) with depressive symptoms. This is with an alpha level of 0.1 and a 95% confidence interval. This relationship is also negative, which means that, the lower the levels of life satisfaction are, the higher the levels of depressive symptoms.

Finally, life satisfaction shares a similar relationship with anxiety. Life satisfaction has a negative correlation (r = -276, df = 120, p = .002, 95% *CI* [-.417, -.106]) with anxiety, with a 95% confidence interval and an 0.1 alpha level. This correlation is weak but still indicates that low levels of life satisfaction correlate with high levels of anxiety.

4.2.2. Psychological protective factors and psychological outcome variables

This section will highlight the data pertaining to the psychological outcomes, such as fear, depressive symptoms, anxiety, life satisfaction, and protective factors such as perceived

emotional support and resilience.

Resilience correlates negatively (r = -.184, df = 120, p = .042, 95% *CI* [-.346, -.004]) (r=-.184) with fear of COVID-19. This means that a higher level of resilience indicates a lower level of COVID-19 fear. This relationship, however, is very weak. This correlation has a confidence level of 95% and a .05 significant alpha level.

Resilience also correlates with depressive symptoms at a .05 alpha level. This is an inverse relationship, indicating that higher resilience will result in lower levels of depressive symptoms. This relationship (r = -224, df = 120, p = .023, 95% *CI* [-.384, -.074]) is also weak, but attained a confidence interval of 95%.

Fear of COVID-19 and depressive symptoms are not the only negative correlations with resilience. Anxiety also correlates (r = -203, df = 120, p = .025, 95% *CI* [-.452, -.049]) with resilience in a negative relationship at an .05 alpha level. Similar to the relationship between fear of COVID-19 and depressive symptoms, anxiety has a weak correlation with resilience. This correlation has a 95% confidence interval.

Unlike any of the other constructs, perceived social support does not correlate with fear of COVID-19 (r = -130, df = 120, p = .154, 95% *CI* [-.323, .080]), depression (r = -089, df = 120, p = .328, 95% *CI* [-.265, .104]), or anxiety (r = -0.33, df = 120, p = .715, 95% *CI* [-.188, .148]). These correlations with perceived social support are not significant under either a 0.5 or 0.1 alpha level. The confidence intervals of these three correlations also intersect zero when bootstrapping was applied, indicating that they lack a 95% confidence interval and are not accurate representations in relation to population norms.

Perceived social support does, however, correlate (r = 642, df = 120, p = .000, 95% *CI* [.511, .764]) with life satisfaction. This is a moderate to strong positive relationship. What this means is that high levels of perceived social support are present when there are high levels of life satisfaction present. This relationship has an alpha level of 0.1 and a confidence interval of 95%.

Perceived social support also does not correlate (r = 134, df = 120, p = .140, 95% *CI* [-.035, .315]) with resilience, and lacks a significant correlation and a confidence interval of 95%. Life satisfaction and resilience do, however, correlate (r = 231, df = 120, p = .010, 95% *CI* [.047, .410]) with a .05 alpha level. This is a weak relationship with 95% confidence interval. The relationship is positive, indicating high resilience is present with high levels of life satisfaction.

4.2.3. Fear of COVID-19, negative psychological outcomes, and life satisfaction

Using the Hayes Process Model 4, this study investigated the mediating effects that the negative psychological outcomes, depression and anxiety, has in the relationship between fear of COVID-19 and life satisfaction.

In terms of the mediating role depression plays in the relationship between fear of COVID-19 and life satisfaction, findings in Table 6 illustrate a significant indirect effect as the confidence interval does not intersect zero [-.24, -.03]. The direct relationship between fear of COVID-19 and life satisfaction is, however, not significant as the p-value is larger than 0.01 (p=.2707). The mediating effect is, therefore, fully explained by the indirect effect and, thus, full mediation is taking place.

In terms of the mediating role anxiety plays in the relationship between fear of COVID-19 and life satisfaction, findings show that there is no mediating relationship in terms of indirect effects as the confidence interval intersects zero, as seen in Table 6 [-.22,.01]. There is also no direct relationship indicated between the dependent and independent variable as the p-value is larger than 0.01 (p=.15). Thus, there is no mediating effect indicated.

Table 6

Mediation Analysis Summary

Effect	Beta	SE	β	95% CI	*p*-value
Fear of COVID-19 → Depression →Life Satisfaction	-.1297	.00985	-.1297	[-.24, -.03]	.27
Fear of COVID-19 → Anxiety →Life Satisfaction	-.0979	-,0557	-.0979	[-.22,.01]	.15

4.2.4. Psychological protective factors and psychological outcome variables

Using Hayes Process Model 1, this study investigated the moderating role perceived social support plays in the relationship between fear of COVID-19 and life satisfaction. The moderating role of perceived social support in the relationship between fear of COVID-19 and life satisfaction was not found to be significant (*β* =. 0023, *SE*= .0034, *p* =. 5130, 95% *CI* [-.0046,.0091]).

The moderating role perceived social support plays in the relationship between depression and life satisfaction was also investigated using Hayes Process Model 1. No moderating effects of significance was found (*β* =. 0011, *SE*= .0026, *p* =. 6650, 95*% CI* [-.0039,.0062]).

An investigation was done into the moderating role perceived social support plays in the relationship between anxiety and life satisfaction, also using the Hayes Process Model 1. No significance was indicated (*β* =. 0049, *SE*= .0047, *p* =. 2955, 95*% CI* [-.0043,.0141]).

The moderating role ego-resilience plays in the relationship between fear of COVID-19 and life satisfaction was also investigated using Hayes Process Model 1. No moderating effects of significance was found (*β* =. 0226, *SE*= .0123, *p* =. 0686, 95*% CI* [-.0018,.0470]).

Ego-resilience as moderator was investigated in the relationship between depression and life satisfaction using Hayes Process Model 1. No moderating effects of significance was found (*β* =. 0040, *SE*= .0090, *p* =. 6606, 95*% CI* [-.0139,.0218]).

The moderating role of ego-resilience was investigated in the relationship between anxiety and life satisfaction using Hayes Process Model 1. No moderating effects of significance was found (β =. 0152, *SE*= .0152, *p* =. 3216, 95% *CI* [-.0150,.0453]).

Chapter 5: Discussion

This chapter considers the results from chapter 4 and will discuss its significance in relation to the aims and objectives set out in chapter 1. Globally, the COVID-19 pandemic brought sudden and abrupt changes via the consequences of the virus as well as the means utilised to mitigate its effects. Frontline workers continued to provide vital services amidst a global lockdown, with each frontline profession experiencing unique challenges. South African teachers were no different.

The literature indicates that teachers needed to contend with challenges on three fronts. Firstly, being part of communities that were globally affected by the pandemic and, like everyone else, they would also be impacted by the sudden rise in domestic violence, the sharp increase in mental health challenges, social isolation, job insecurity, and distress relating to resource management (Galea et al., 2020; Kontoangelos et al.,2020; Mukuna & Aloka, 2020; Pfefferbaum & North, 2020; Raphael, 2006; van der Berg, 2020).

Secondly, as frontline workers, teachers had specific challenges related to their profession as well. This includes navigating the DBE's new risk adjusted strategy, regular government updates regarding the implementation of profession risk management strategies, a sudden change to online teaching, inadequate access to appropriate resources, increase in workloads, and pressure to make up for lost time with learners (Motshekga, 2020; Mpofu, 2020; Mukuna & Aloka, 2020; UNICEF South Africa, 2021; World Bank & UNICEF, 2021).

Finally, the literature also highlights that teachers had to navigate mental health challenges arising from the pandemic and its prevention measures. Studies indicate that teachers, during the pandemic, experienced high levels of fear of COVID-19, anxiety, depression, and general distress (Li et al., 2020; Ozamiz-Etxebarria et al., 2020; Pressley et al., 2021; Santamaría et al., 2021; Silva et al., 2021). The literature further indicates that those with pre-existing mental health challenges are even more vulnerable to experiencing a worsening in their mental health (Cullen et al., 2020; Kontoangelos et al.,2020; Özdin &

Bayrak Özdin, 2020; Vindegaard & Benros, 2020). Therefore, the literature highlighted that teachers were vulnerable to several negative psychological outcomes and had to manage a large array of different challenges.

This study also aimed to find ways that teachers could be assisted during these difficult times. In order to fulfil this aim, the study investigated the role of two protective factors in psychological outcomes namely, ego resilience and perceived social support.

5.1. The psychological impact of COVID-19 on school teachers

The current study found high levels of fear of COVID-19 among the school teachers in the sample. Most of the teachers in the study were exposed to the COVID-19 virus in one way or another, with only four (3%) participants reporting no contact or experience with someone who had contracted the virus. This could explain why extreme fear of COVID-19 was prevalent in more than half the sample (53%). This finding further confirms the results of existing research (Doshi et al., 2021; Labrague & de Los Santos, 2021; Luo et al., 2021; Padmanabhanunni et al., 2022; Yenen & Çarkit, 2021).

Compared to international findings the sample mean was higher than a Chinese study (Kukreti et al., 2021) conducted with teachers during the pandemic, but lower than a local study with teachers (Padmanabhanunni et al., 2022). However, the means of both the South African study and the current study falls significantly above the cut-off score, while the mean of the Chinese study falls below it. This suggests that South African teachers experienced higher levels of COVID-19-related fear during the pandemic.

Considering only 11% of teachers indicated that they have access to appropriate resources and more than half of the sample teaches at schools that are often viewed as under resourced, it is probable that the high level of fear of COVID-19 may be due to challenges with procuring appropriate resources to keep themselves safe. This may include personal protective equipment and sanitation items (Mukuna & Aloka, 2020). In this sample 23% of teachers indicated that they never used online technology to teach, 25% indicated they did not

use any online mediums such as WhatsApp or Zoom during the pandemic and many teachers returned to rotational teaching midway through the pandemic. These teachers that found themselves in face-to-face classrooms may have lacked the means to protect themselves appropriately in overcrowded classrooms, with some schools possibly only having access to pit latrines and no running water (Jones, 2021).

Along with high levels of fear of COVID-19 the majority of teachers in the study also reported heightened levels of anxiety, with only a minority of teachers (38%) reporting either mild or no anxiety symptoms. Compared to local (e.g., Henn & Morgan, 2019) and international studies (e.g., Hinz et al., 2017) conducted before the pandemic, teachers within this study reported higher levels of anxiety. However, even when compared to international findings within a country such as the USA during the pandemic (Sequeira et al., 2021), the numbers were higher. Compared to South African outcomes during the pandemic there was no significant difference (De Man et al., 2022). This suggests that anxiety levels within South Africa for teachers was especially high during the pandemic when compared to populations from first world countries.

The high levels of anxiety may also form part of having to work under conditions where teachers lacked appropriate resources, protective gear and sanitation, however the literature highlights another cause that may have contributed as well. The literature states that a significant cause of teachers' anxiety during the pandemic was around online teaching and their lack of familiarity with this modality (Pressley et al., 2021). The major challenges that had to be overcome in South Africa was funding, appropriate resources, and appropriate training in the use of technology (Du Plessis, 2020; Mukuna & Aloka, 2020).

The current study found that 42.6% of participants had never used online teaching technology before the pandemic, 13% had used the technology regularly before the pandemic, and only three (2.5%) participants had used this technology extensively during their career. As reported, 25% of educators did not use online platforms at all during the pandemic and only

11% of teachers felt appropriately resourced to perform their teaching duties online. Furthermore 22% felt they completely lacked the resources, 29% had to make use of their own resources, and 38% needed to use a mixture of available school resources and their own resources in order to teach. Teachers may have experienced excessive amounts of anxiety around procuring the training and resources in order to fulfil their duties. The literature states that countries with limited access to technology for online teaching may experience more anxiety than those that do have access (Silva et al., 2021). This appears to have been the case in South Africa for teachers that either lacked the training or the means to easily navigate the suddenly much more complicated educational landscape.

Teachers may also have felt overwhelmed by challenges in their personal and professional lives. Findings internationally report that teachers experienced anxiety during the pandemic due to the sudden change in lifestyle, workload increase, having a chronic illness or caring for someone with a chronic illness, and the sudden transition to online teaching (Alkhamees et al., 2020; Pressley et al., 2021; Tee et al., 2020; Vindegaard & Benros, 2020). South African teachers were reported to have experienced the same factors locally as teachers needed to adapt to the new normal, make up for lost time with learners, adapt the curriculum, and implement catch up plans, which increased their workloads (Ramrathan, 2020; UNICEF South Africa, 2021).

Teachers in the current study reported high levels of depression as well and this is consistent with existing studies (Ozamiz-Etxebarria et al., 2021; Silva et al., 2021). Based on the cut-off scores for the CES-D, more than half the sample in the present study (52%) showed severe depressive symptomatology. Comparing this with a study conducted by Domingo and colleagues (2015) before the pandemic, also using the CES-D on a sample of teachers in South Africa, only 16% of their sample scored above the cut-off score for depression. This suggests a substantial increase in levels of depression among teachers during the COVID-19 pandemic. Furthermore, the mean level of depression found within this study was higher than pre-

pandemic levels reported in other studies (Hamad et al., 2008; Simor et al., 2019) and echoed the findings of a local study conducted during the pandemic with teachers (Padmanabhanunni et al., 2022).

The pandemic resulted in many challenges where there was no immediate relief available. The high level of depression may be due to the increasing level of mortality for teachers initially reported during the lockdown, increasing workloads, difficulty accessing social support networks as well as an increase in responsibilities both at work and at home. Teachers were under a lot of strain looking after themselves, their families as well as the learners under their care in the midst of an ever changing pandemic. This would have put immense pressure on their mental health.

Local literature also indicates reasons for the rise of negative psychological outcomes during the pandemic. Padmanabhanunni and colleagues (2022) found that South African teachers who appraised themselves as more vulnerable to COVID-19 (which would include those with a chronic illness), experienced heightened fear of COVID-19, which in turn led to higher levels of depression and anxiety. The current study found that high levels of fear of COVID-19 was associated with high levels of depression and anxiety. Anxiety and depression are also strongly and positively correlated, supporting their comorbid relationship frequently reported in the literature. These findings confirm the findings of other studies that have found that increased levels of fear of COVID-19 resulted in higher levels of anxiety and/or depression (Li et al., 2020; Padmanabhanunni et al., 2022; Serafini et al., 2020; Vindegaard & Benros, 2020). This highlights the possible impact fear of COVID-19 can have on teachers as increased fear of COVID-19 leads to increased levels of negative outcomes.

Due to high levels of negative psychological outcomes, it was expected that the average life satisfaction would be low. However, the life satisfaction scores for this sample were high, with 63% of the sample indicating that they were satisfied with their life. This could possibly be due to the participants being content in other areas of their lives despite the challenges they

are experiencing during teaching. Comparison with other means (Pretorius & Padmanabhanunni, 2021; Tas & İskender, 2018; Zakeri et al., 2021) also indicated that the mean for the current sample was either higher or similar to other studies. The literature offers possible explanations for this finding.

Firstly, research has shown that high levels of ego-resilience, as seen in this study, can lead to high levels of life satisfaction (Cohn et al., 2009). Secondly findings show that distress and life satisfaction are mediated by social adaption (Hu et al., 2022). Data gathering for this study was conducted towards the later stages of the pandemic, which means that the high levels of distress experienced during the pandemic could have led to social adaptions which may positively impact life satisfaction. Life satisfaction was also shown to negatively correlate with both anxiety and depression, which corresponds to the findings in the existing literature (Headey et al., 1993; Isik et al., 2021; Karagöz et al., 2021).

Finally, the current study considered that the presence of fear of COVID-19 may intensify other negative psychological outcomes, such as depression and anxiety. A mediation analysis was done and indicated that depression was a mediator between fear of COVID-19 and life satisfaction. This indicates that fear of COVID-19 amplifies depression, which in turn decreases life satisfaction. This echoes the findings of Satici and colleagues (2021) who reported that as fear of COVID-19 increased, depression and anxiety increased, which then results in life satisfaction decreasing. This is very important as excessive worrying about becoming infected and what the consequences will be can increase fear of COVID-19, which then negatively impacts those with depression (Padmanabhanunni et al., 2022). Teachers who have a pre-existing diagnosis of depression will, therefore, possibly be more vulnerable.

5.2. The association between protective factors and psychological outcomes

The current study found that more than half the sample had high levels of ego-resilience and ego-resilience was shown to have weak negative relationships with all negative psychological outcomes and a weak positive relationship with life satisfaction. It is, however,

not possible to state that ego-resilience is an effective protective factor utilising zero-order correlations alone as it does not control for the influence of other variables and thus moderation analysis was utilised. Findings, however, indicated no significant results between the negative psychological outcomes (fear of COVID-19, depression, and anxiety) and life satisfaction with ego-resilience as moderator. The literature suggests that ego-resilience in isolation may not be an effective protective factor against fear of COVID-19 (Sugawara et al., 2021). Instead, there may be other variables and relationships that needs to be considered in relation with ego-resilience that fell outside of the scope of this study.

In the current study, half the sample reported high levels of perceived social support. The literature highlights that perceived social support has a direct negative relationship with the adverse mental health outcomes caused by the pandemic. The literature shows that perceived social support acts as a protective factor for anxiety, depression, burnout, and general negative mental health outcomes during the pandemic (Grey et al., 2020; Özmete & Pak, 2020; Szkody et al., 2020; Yu et al., 2020). This study, however, did not find any correlation between perceived social support and negative psychological outcomes. Thus, it was not surprising when a moderation analysis was done, that findings indicated no significant results between the negative psychological outcomes (fear of COVID-19, depression, and anxiety) and life satisfaction with perceived social support as moderator. The literature reports high levels of COVID-19 anxiety can render the positive benefits of perceived social support ineffective (Ekmen et al., 2021). Considering the high levels of COVID-19 fear and anxiety present in this sample, this may explain why perceived social support was not indicated as an effective protective factor in this study.

The findings in this chapter indicate that there were high levels of negative psychological outcomes amongst the teachers in the sample. Further, high levels of perceived social support, ego-resilience and life satisfaction was also present. Depression was found to be a mediator, indicating that extreme levels of COVID-19 fear can heighten depression,

which in turn, lowers life satisfaction. Findings overall indicate that the COVID-19 pandemic has had a marked negative impact on South African teachers' psychological wellbeing however they also appear to have positive psychological resources to draw on to protect themselves against these effects.

Chapter 6: Conclusion

6.1. Conclusion

The COVID-19 pandemic brought the whole world to a standstill. However, vital services needed to continue, and education formed part of these services. South African teachers needed to adapt to the 'new normal' and find ways to deal with both unique challenges experienced professionally and ones that presented in their personal lives. This study aimed to investigate the psychological impact of the COVID-19 pandemic on South African school teachers.

The effects of the pandemic on school teachers with regard to fear of COVID-19, anxiety, depression, life satisfaction, ego-resilience, and perceived social support was explored. The study found that most of the participants had had contact with COVID-19 and that more than half of the sample had experienced significantly high levels of fear of COVID-19, anxiety, and depression. Findings suggested a substantial increase in depression amongst South African school teachers when compared to pre-pandemic levels. Furthermore, anxiety in the South African sample was high when compared to international research.

Consideration of the findings and the literature suggest that new occupational challenges, stress over funding, difficulty accessing resources, the change to online teaching, sudden lifestyle adaptions, increased workloads, and having or caring for someone with a chronic illness exacerbates anxiety and heightens fear of COVID-19. Higher levels of fear of COVID-19 in turn leads to increases in adverse psychological outcomes such as depression.

A mediation analysis conducted as part of this study found that depression mediated the relationship between fear of COVID-19 and life satisfaction. Findings indicate that, as fear of COVID-19 increases, it negatively impacts depression which in turn lowers life satisfaction. This concurs with the literature and suggests that South African teachers that suffer from pre-existing conditions, such as depression, are more vulnerable to the negative outcomes caused by fear of COVID-19. Anxiety, however, was shown to not be affected in a similar manner

and those with pre-existing anxiety disorders do not appear to be as vulnerable to fear of COVID-19 after-effects.

Surprisingly, it was found that, despite the high levels of negative psychological outcomes, the sample had a high level of life satisfaction. Findings in the literature suggest this may be due to social adaption. The data gathering for this research was completed during the latter part of the pandemic and findings in the literature suggests that teachers faced with initial distress may have employed social adaption during the pandemic to regain their levels of life satisfaction.

The association between the protective factor's ego-resilience and perceived social support was considered in terms of the negative psychological outcomes in this study. Despite the literature indicating that ego-resilience and perceived social support function as protective factors, no moderating ability was found for either of these variables. The literature suggests that protective factors like ego-resilience may work more effectively when considered in conjunction with variables outside of the scope of this study.

Future research should focus on ways to decrease or mitigate the effects of COVID-19 fear. As seen in this study and the literature, fear of COVID-19 appears to be the driving force behind either causing or worsening negative psychological outcomes cause by the pandemic. Furthermore, while this research paper has helped better describe the psychological impact the COVID-19 pandemic has had on South African teachers, more needs to be done to highlight protective factors and interventions to effectively mitigate these negative outcomes.

6.2. Limitations of the study

With regards to the limitations of this study, it needs to be noted that the sample size was smaller than originally planned and caution should be taken in terms of generalising the results. The study was also completed online, which could have affected the sample as only a certain type of teacher may have been reached and not all teachers, as some may not be present online which could bring a different perspective to the study. It also needs to be noted that,

since the study was online and it is difficult to control for bias, positivity bias may be a factor in terms of the positive construct scales, such as perceived social support and life satisfaction. Finally, data was collected for this study over a 6-month period. In terms of the pandemic, knowledge, information, level of lockdown, and other factors changed quickly, and may have changed people's perspectives from the 2nd to the 4th wave, therefore potentially influencing results.

6.3. Recommendations

Recommendations for this study will be made in two categories. Firstly, the current psychological impact on South African teachers needs to be addressed in order to mitigate the damage done during the COVID-19 pandemic. Secondly, the current pandemic may also not be the last pandemic experienced and recommendations can be made in order to strengthen our response to future similar situations.

The current study found that excessive fear of COVID-19, depression and anxiety was experienced by teachers and that excessive fear of COVID-19 exacerbates the impact of depression on individuals. The findings in this research suggest that interventions need to target the problem on multiple levels, addressing the factors that lead to excessive fear of COVID-19 but also the common negative psychological outcomes related to it.

It is recommended that teachers are offered access to psychological services. This include both crisis and non-crisis intervention in order to address both those that may currently be in crisis and those that require therapy for relief from longer term challenges such as depression.

In terms of preventative recommendations for future similar situations that may occur further research is highly recommended. The current study found that perceived social support and ego-resilience were not protective factors however there is strong evidence that they both are useful in mitigating the negative psychological effects experienced during the pandemic. Further research is needed to better understand their role and how they can be implemented to

assist teachers.

Teachers in South Africa require adequate resources for online teaching and more exposure to utilising technology in the classroom. Training at all levels could focus on upskilling teachers in the use of technology, not only protecting against future lockdown situations but also upskilling those that lacked exposure to technological teaching practices. Private schools and better resourced first world countries have been shown in the literature to have had a much easier time navigating the challenges of the pandemic than their poorer and under resourced counter parts. Providing the appropriate resources and training to use more modern technology for teaching is not just important for online teaching but could also benefit education in general.

It is further recommended that research be done in relation to the local response to the pandemic, with the aim of generating a response plan for future pandemics. This may not be the last global pandemic and a calculated and planned future response would help build on the lessons learned and more effectively mitigate negative psychological outcomes for South African teachers.

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Appendices

Appendix A: Electronic Research Instrument

Please note that the following is a copy of the survey battery utilized in this study. It has been changed aesthetically from its Google Forms version for ease of reference but is a word for word copy.

1. Demographic Data

Please fill out the following demographic information to the best of your ability.

Have you read and understood the information sheet on the previous page and do you agree to the terms as set out therein?
Yes
No

Age:_____

Gender
Male
Female

Are you registered with the South African Council of Educators?
Yes
No

Please select in what setting you are currently practicing as a teacher.
A South African Primary School
A South African High School
Other

The school where I am currently employed falls under which of the following categories
Quintile 1 School
Quintile 2 School
Quintile 3 School
Quintile 4 School
Quintile 5 School
My school is not part of the quintile system and entirely privately funded.

How many years have you been a teacher? _____

Were you actively teaching during the COVID-19 pandemic (2020-2021)?
Yes

No

Please indicate the level of contact you have had with the COVID-19 pandemic. (Tick all boxes that apply)
I have had COVID-19
Someone in my home has had COVID-19
Someone in my extended family (outside my home) has had COVID-19
Someone outside of my family that I am close to or know well has had COVID-19
No one close to me or that I know well has had COVID-19

During the COVID-19 pandemic did you make use of online learning and media platforms to teach students (Examples: WhatsApp, Zoom, Websites etc.)
Yes
No

During the pandemic, was it your first time using online platforms and media to teach?
I have never made use of these platforms and technology for teaching.
Yes, the pandemic was my first time using this technology to teach.
No, it was not my first time, I have used this technology once or twice before the COVID-19 pandemic as well.
No, it was not my first time, I have used this technology regularly before the COVID-19 pandemic as well.
No, it was not my first time, I have used this technology extensively before the COVID-19 pandemic as well.

Did you feel appropriately resourced (Examples: computer, internet, online teaching content, PPE) to perform your teaching duties during COVID-19?
No, I completely lacked the appropriate resources.
No, I had to make use of my own resources to teach effectively.
Yes, I was mostly appropriately resourced but had to make use of some of my own resources.
Yes, I was completely appropriately resourced.

2. Fear of COVID-19 Scale

Please respond by selecting one of the five responses that reflects how you feel, think or act towards COVID-19.

Fear of COVID-19 Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am most afraid of Corona					
It makes me uncomfortable to think about Corona					

My hands become clammy when I think about Corona					
I am afraid of losing my life because of Corona					
When I watch news and stories about Corona on social media, I become nervous or anxious.					
I cannot sleep because I'm worrying about getting Corona.					
My heart races or palpitates when I think about getting Corona.					

3.GAD-7 Anxiety Questionnaire

Over the last two weeks, how often have you been bothered by the following problems?

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious, or on edge				
2. Not being able to stop or control worrying				
3. Worrying too much about different things				
4. Trouble relaxing				
5. Being so restless that it is hard to sit still				
6. Becoming easily annoyed or irritable				
7. Feeling afraid, as if something awful might happen				

4. Center for Epidemiologic Studies Depression Scale

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

During the past week:	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
I was bothered by things that				

usually don't bother me.				
I did not feel like eating; my appetite was poor				
I felt that I could not shake off the blues even with help from my family or friends.				
I felt I was just as good as other people.				
I had trouble keeping my mind on what I was doing.				
I felt depressed.				
I felt that everything I did was an effort.				
I felt hopeful about the future.				
I thought my life had been a failure.				
I felt fearful.				
My sleep was restless.				
I was happy.				
I talked less than usual.				
I felt lonely.				
People were unfriendly.				
I enjoyed life.				
I had crying spells.				
I felt sad.				
I felt that people disliked me.				
I could not get going.				

5. Multidimensional Scale of Perceived Social Support

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
There is a special person who is around when I am							

in need.							
There is a special person with whom I can share my joys and sorrows.							
My family really tries to help me.							
I get the emotional help and support I need from my family.							
I have a special person who is a real source of comfort to me.							
My friends really try to help me.							
I can count on my friends when things go wrong							
I can talk about my problems with my family.							
I have friends with whom I can share my joys and sorrows.							
There is a special person in my life who cares about my feelings.							
My family is willing to help me make decisions.							
I can talk about my problems with my friends.							

6. The Satisfaction with Life Scale

Below are five statements that you may agree or disagree with. Indicate your agreement with each item by selecting the appropriate answer. Please be open and honest in your responding.

	Strongly	Disagree	Slightly	Neither	Slightly	Agree	Strongly

	Disagree		Disagree	Agree Nor Disagree	Agree		Agree
In most ways my life is close to my ideal.							
The conditions of my life are excellent.							
I am satisfied with my life							
So far I have gotten the important things I want in life							
If I could live my life over, I would change almost nothing.							

7. The Ego-Resilience Scale

Please read the below statements about yourself and indicate how well it applies to you by selecting the answer to the right from 1 (does not apply at all) to 4 (applies very strongly). Let me know how true the following characteristics are as they apply to you generally.

	Does not apply at all	Applies Slightly	Applies Somewhat	Applies Very strongly
I am generous with my friends.				
I quickly get over and recover from being startled.				
I enjoy dealing with new and unusual situations.				
I usually succeed in making a favorable impression on people.				
I enjoy trying new foods I have never tasted before.				
I am regarded as a very energetic person.				
I like to take different paths to familiar places.				
I am more curious than most people.				
Most of the people I meet are likable.				
I usually think carefully about something				

before acting.				
I like to do new and different things.				
My daily life is full of things that keep me interested.				
I would be willing to describe myself as a pretty “strong” personality.				
I get over my anger at someone reasonably quickly.				

Appendix B: Social Media Post

Good day, I am a clinical psychology master's student from UWC currently completing my master's dissertation. My study investigates the psychological impact the COVID-19 pandemic has had on South African teachers. Something there is very limited research on currently.
I wish to cordially invite participants to participate who are SACE registered teachers who were working at any point during the COVID-19 pandemic in either a South African Mainstream Highschool or Primary school.

This survey takes 10 minutes and is completely anonymous. In order to participate please click on the link below for more information and please feel free to share the link with anyone else you know that may be interested in taking the survey. Thank you for your time and consideration

Link: https://forms.gle/LphDBU25CQvDsRo28

Appendix C: Information Sheet

UNIVERSITY *of the* WESTERN CAPE

DEPARTMENT OF PSYCHOLOGY

Private Bag X 17, Bellville 7535, South Africa, Telephone: (021) 959-2283/2453 Fax: (021) 959-3515 Telex: 52 6661

INFORMATION SHEET

Project Title: The psychological impact of the COVID-19 pandemic on South African school teachers

What is this study about?

This is a research project being conducted by Alexander M Louw, Clinical Psychology Masters student at the University of the Western Cape. We are inviting you to participate in this research project because you fall within the demographic of teachers registered with the Department of Basic Education, that actively served as an educator in a South African School during the 2020 and 2021 COVID-19 pandemic. The purpose of this research project is to explore the psychological impact of COVID-19 on South African school teachers, and also to investigate the presence of protective factors and their possible ability to ease some of these negative outcomes.

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

After reading this information sheet you will be asked, if you agree to participate, to digitally sign a consent form that you understand all the information set out in this document and that you are happy to participate. You will be asked to fill out a multiple-choice online survey consisting of a demographic section and then six short instruments designed to measure various aspects linked to the psychological aspects of COVID-19. This includes the topics, anxiety around COVID-19, mood, support, resilience and life satisfaction. The questions will cover some demographic questions such as your age and gender for example, also how much or how little you relate to certain statements and finally to rate how often, if at all, you have had certain experiences. The multiple-choice instrument should not take more than 20 minutes to answer, at most.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity and confidentiality the following steps have been taken. The survey questions are completely anonymous and none of the questions will ask identifying questions that can link you personally in any way. The only part where you are asked for any

identifying information is when you sign your consent form. This is however not linked to your answers in any way. These consent forms themselves are stored using a digital password system and will only be kept for 5 years. When the data is written up in the form of a research dissertation, or for a research publication/presentation your identity will be fully protected through the above steps.

What are the risks of this research?

All human interactions and thinking about or considering your own experiences carry some amount of risk. In terms of this study, it could potentially illicit unpleasant feelings or memories pertaining to working as a teacher during the COVID-19 pandemic. 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. If necessary, you may contact the researcher who will assist to the best of his ability to connect you with an appropriate resource. Further, it is strongly recommended that in the event of this study eliciting any negative experiences you can contact either SADAG Mental Health Line (011 234 4837) or the Life Line South Africa National Counselling Line (0861 322 322)

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 impact COVID-19 had on teachers in South Africa. We hope that, in the future, teachers as a community might find some benefit from this study, especially if it can contribute in a small way to any further studies or intervention programs aiming to assist teachers who are required to work during a pandemic or similar circumstances.

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 in any way. Should you wish to not continue your participation, simply do not click on submit and your answers will not be recorded.

What if I have questions?

This research is being conducted by Alexander M Louw, Clinical Psychology Masters student at the University of the Western Cape, under the supervision of Prof Anita Padmanabhanunni and Mr Kyle Jackson. If you have any questions about the research study itself, please contact us at:

Alex Louw

Clinical Psychology Masters Student
Department of Psychology
University of the Western Cape
Private Bag X17
Bellville 7535
4102615@myuwc.ac.za

Prof Anita Padmanabhanuni

Head of Department: Department of Psychology
University of the Western Cape
Private Bag X17
Bellville 7535
apadmana@uwc.ac.za

or

Mr Kyle Jackson
Department of Psychology
University of the Western Cape
Private Bag X17
Bellville, 7535
kmjackson@uwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Prof Anita Padmanabhanuni

Head of Department: Department of Psychology
University of the Western Cape
Private Bag X17
Bellville 7535
apadmana@uwc.ac.za

or

Prof Anthea Rhoda

Dean: Faculty of Community and Health Sciences
University of the Western Cape
Private Bag X17
Bellville 7535
chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Humanities and

Social Sciences Research Ethics Committee.

Humanities and Social Sciences Research Ethics Committee
University of the Western Cape
Private Bag X17
Bellville
7535

Tel: 021 959 4111

e-mail: research-ethics@uwc.ac.za
REFERENCE NUMBER: HS/21/7/36

Appendix D: Consent Form

UNIVERSITY *of the* WESTERN CAPE

DEPARTMENT OF PSYCHOLOGY

Private Bag X 17, Bellville 7535, South Africa, Telephone: (021) 959-2283/2453 Fax: (021) 959-3515 Telex: 52 6661

CONSENT FORM

Title of Research Project: The psychological impact of the COVID-19 pandemic on South African school teachers

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.

Participant's name……..
Participant's signature…….
Date……

Humanities and Social Sciences Research Ethics Committee
University of the Western Cape
Private Bag X17
Bellville
7535

Tel: 021 959 4111

e-mail: research-ethics@uwc.ac.za

Appendix E: Post Survey Message

Thank you very much for participating in this study, your time and contribution is greatly appreciated. If you know of any other teachers who would be willing to fill out this survey please feel free to either send them this link https://forms.gle/LphDBU25CQvDsRo28 or to direct them to the Facebook post.

If you require further information beyond what is given in the information sheet, you can contact me by emailing 4102615@myuwc.ac.za and I will be able to answer any questions you might have. If any of the questions in this survey lead to feelings of distress, please reach out to the South African Depression and Anxiety Group (SADAG). SADAG offers free confidential telephonic counselling and can be reached at: 011 234 4837.

Appendix F: Ethical Clearance Letter

UNIVERSITY of the WESTERN CAPE

60 YEARS of hope, action & knowledge

14 September 2021

Mr AM Louw
Psychology
Faculty of Community and Health Sciences

HSSREC Reference Number:	HS21/7/36
Project Title:	The psychological impact of the COVID-19 pandemic on South African school teachers
Approval Period:	14 September 2021 – 14 September 2024

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the 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 by 30 November each year for the duration of the project.

The permission to conduct the study must be submitted to HSSREC for record keeping purposes.

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

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

Director: Research Development
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NHREC Registration Number: HSSREC-130416-049

FROM HOPE TO ACTION THROUGH KNOWLEDGE.