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ORIGINAL ARTICLE

The lived experiences of emergency care personnel in the Western Cape, South Africa during the COVID-19 pandemic: A longitudinal hermeneutic phenomenological study

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ABSTRACT

In March 2020, the World Health Organisation declared COVID-19 a global pandemic. Shortly after the first case of COVID-19 was reported in South Africa, the Western Cape province experienced a rapid growth in the number of cases, establishing it as the epicentre of the disease in South Africa. The aim of this study was to explore emergency care personnel's lived experiences and their perceptions thereof within the context of the COVID-19 pandemic in the Western Cape province. This study followed a longitudinal hermeneutic phenomenological approach. The convenience sample included prehospital and emergency centre medical personnel. Data were collected over a 4-month period using both one-on-one interviews and participant recorded voice recordings. Data were analysed following Ricoeur's theory of interpretation. Four themes were generated during the data analysis: 1) In the beginning, waiting for the unknown; 2) Next, change and adaptation in the workplace; 3) My COVID-19 feelings; 4) Support and connection. Participants discussed the uncertainty associated with responding to an unknown threat and a need to keep up with constant change in an overburdened work environment. Results showed high levels of uncertainty, restriction, fear, anxiety, and exhaustion. Despite these difficulties, participants demonstrated resilience and commitment to caring for patients. A need for support was also highlighted. Results indicated that change, over time, resulted in adaptation to a new way of practising and keeping safe. Healthcare workers experienced intersecting consequences as frontline healthcare workers and members of the public, all of which impacted their well-being. The importance of compassion and encouragement as forms of support was highlighted in the study. Robust and sustained support structures in a time of change, low mood, and exhaustion are essential.

African relevance

- Owing to limited healthcare resources, Africa is particularly vulnerable to global pandemics, such as COVID-19.
- Emergency care providers are at the forefront of clinical care during pandemics and thus are particularly affected by system changes and patient surges.
- This explorative study on the lived experienced of emergency care providers during COVID-19 is one of the only conducted in the African context on the topic.
- The paper highlights important issues around healthcare system preparedness, the consequences of the intersecting roles experienced by frontline healthcare workers, and a need for support structures and connection.

Background

In March 2020, the World Health Organisation declared the emergence and spread of a novel coronavirus outbreak, which leads to coronavirus disease (COVID-19), a global pandemic [1]. Shortly after the first case of COVID-19 was reported in South Africa, the Western Cape province (and specifically the Cape Town metropole) experienced a rapid growth in the number of cases, establishing it as the epicentre of the disease in (South) Africa [2]. Since then, the province has continued into a second, third, and fourth wave of COVID-19. The evolving pandemic in South Africa has seen the country face some of the harshest and most protracted lockdown periods in the world.

COVID-19 has had devastating consequences on world economies and healthcare, with many healthcare systems being under severe strain. Global economic contraction has led to widespread job-losses, and deep-

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ening of poverty levels, especially in low- to middle-income country settings. These consequences have been exacerbated by "lockdowns" or "stay at home orders", leading to the curtailment of some civil liberties, freedom of movement and social gatherings, in an attempt to curb the spread of the virus and protect the healthcare system from overburdening and eventual collapse. In the general population, these restrictions have increased the rate of depression and general anxiety [3].

Owing to their function during a pandemic, healthcare workers (HCWs) might have a disproportionate and exacerbated COVID-19 experience. HCWs have a dual, intersecting identity. They are citizens and thus are subject to many of the lockdown regulations that can lead to negative psychological consequences. However, HCWs are also considered active frontline agents whose role contributes to the protection of any given population against viral pandemics [4]. During the pandemic, frontline healthcare workers faced high workloads, long shifts, and limited rest and recovery time. Medical care had to be provided with inadequate personal protective equipment, limited resources, and poor information-sharing [5].

We also learn from previous pandemics of the potential for significant psychosocial impact on HCWs, from fear for themselves and family, perceived alienation and isolation, to some diagnosed with post-traumatic stress disorder [6,7]. Despite the challenges, reports of high levels of morale, [6] motivation and the commitment to provide good medical care were also evident [8]. Even before the pandemic, high burnout amongst physicians and prehospital providers was reported [9–11].

Emergency care personnel are medical providers who function on the frontline during emergencies. In South Africa, this group of providers describes prehospital and in-hospital emergency medical personnel, including paramedics, physicians and nursing staff. Despite the risk of exposure and potential for significant psychosocial impact on this group of health care workers, very little local research looks into the lived experience of emergency care personnel during pandemics. To this end, the aim of this study was to explore emergency care personnel in the Western Cape province's lived experiences and their perceptions thereof within the context of the COVID-19 pandemic.

Methods

Study design

This study followed a longitudinal hermeneutic phenomenological approach. Hermeneutic phenomenology, as a theoretical perspective and methodology, seeks to describe and interpret human experience through a cyclical process of distanciation, appropriation, explanation, and interpretation [12]. The study was conducted longitudinally to allow the interpretation of experiences over a period of time, as the COVID-19 pandemic unfolded. The study was conducted within the interpretivist paradigm, thus accepting a relativist ontology and transactional epistemology [13]. From this perspective, reality is intersubjective and knowledge is a product of the interaction between the researcher and the participant. This study is reported in accordance with the Standard for Reporting Qualitative Research (SRQR) [14]. Ethical approval for the study was obtained from the Human Research Ethics Committee of the University of Cape Town (HREC Ref 386/2020).

Setting

The Western Cape province has a population of approximately 7.1 million, and accounts for 11% of the total population in South Africa. Approximately 64% of the population resides in the Cape Town metropole, which has a population of just over 4 million. South Africa has a dual healthcare system where patients with medical insurance are treated by private healthcare providers, emergency medical services, and hospital; while the much larger uninsured population are treated in public community health centres, hospital, and emergency medical services as supplied by the provincial government.

Participants

A convenience sample was drawn by contacting emergency medicine affiliated staff from our staff repository. Staff were requested to distribute an invitation to the study through their networks. For prehospital providers we requested the managers at a private emergency medical care provider to send the invitation to their employees. Prospective participants were able to reach ET via e-mail to communicate their interest in participating in the project. Thereafter, to ensure the confidentiality of the participants' identities and responses, each participant was assigned a pseudonym and only ET and HCE had access to any identifying information.

The sampling frame included prehospital and emergency centre medical personnel. Participants were recruited regardless of base qualification, and any prehospital provider (basic, intermediate, and advanced life support) as well as both nursing staff (enrolled or professional nurses) and medical staff (interns through specialist emergency physicians) were eligible. Participants had to work clinically for at least 36 hours, or three to four shifts a week.

Data collection

To minimise the effect of research on an over-burdened healthcare workforce, this study started data collection during the resolution phase of the first wave of COVID-19 in the province and extended into the pre-peak second wave. Data were collected in four ways over a 4-month period from end-August 2020 to the beginning of January 2021. Data were collected by two female investigators (ET, MA; HCE, PhD). Both ET and HCE are Research Psychologists with an in-depth understanding of psychological theory and research methodology, while HCE is also an Ambulance Emergency Assistant, thus bringing additional experience from clinical emergency care. Neither ET nor HCE were familiar with the research participants prior to the study. The sample was divided into prehospital and in-hospital staff and divided accordingly between the two investigators.

1. Following informed consent, at the start of the study biographical data (position at work, years active as healthcare worker, previous experience in emergency care, relationship status, living arrangements, dependants, and whether the participant has high-risk family members) were collected online during a one-on-one session with the participant. At the time, older people and people with underlying medical conditions were defined as high risk. Investigators used this interview to discuss the nature and goals of the project with participants and also to establish rapport.
2. Thereafter, participants were asked to record one 15-30-minute voice recording using the end-to-end encrypted messaging service, WhatsApp (Facebook Inc., Mountain View, California, United States) reflecting on their lived experiences to date in the context of COVID-19.
3. Participants were asked to record three- to five-minute voice recordings on the following recommended times: 1) prior to a shift, 2) directly after a shift, and 3) 24 to 48 hours after the last shift in a cycle for the duration of the study.
4. One one-on-one, exploratory interview, drawing on techniques from narrative interviewing, was conducted per participant over the study period. Interviews were conducted online with one investigator present (ET or HCE). The interviews were open in nature, with few direct questions, formulated based on the analysis of the data already provided by the participant (i.e., biographical data, initial reflection, voice recordings).

Interviews were conducted and voice recordings accepted in the participant's preferred language. Data were collected until researchers felt

Table 1
Thematic development

Meaning Unit	Code	Subtheme	Main theme
"Just kind of watching all of these videos and reading all these resources"	Learning	Preparing for the unknown	In the beginning, waiting for the unknown
"We've just kind of learned how to do things in a different way."	Adapting	Keeping up with change	Next, my work environment is changing
"We're transporting too many COVID patients. Too many. It's going rough."	Patient overload	Exhaustion	My COVID-19 feelings

Table 2
Demographic details of participants

Participant	Self-Identified Gender	Work role	Experience in years	Relationship	Share a home with significant other?	Dependents	High-risk family members
P1	Female	Paramedic	3.5	Yes	Now during the pandemic	No	Yes
P2	Female	Trauma RN	7	Yes	Yes	Yes	Yes
P3	Male	EM Registrar	10	Yes	Yes	No	No
P4	Female	EM Physician	15	No	No	No	No
P5	Male	Senior Manager; EM Physician	27	Yes	Yes, at times	Yes	No
P6	Female	EM Medical Officer	16	Yes	Yes	Yes	Yes
P7	Female	Paramedic	1.5	Yes	Yes	No	Yes
P8	Male	Paramedic	6	Yes	Yes	Yes	Yes

RN: Registered Nurse; EM: Emergency Medicine

that a clearer understanding of the experience will not be achieved through further discussion with the participants [15].

Data analysis

All voice recordings and interviews were transcribed verbatim (ET, HCE). All data were anonymised during transcription and pseudonyms were allocated to link different submissions. The transcripts of the voice recordings and the one-on-one interviews were analysed for common themes using Ricoeur's theory of interpretation. Ricoeur's theory of interpretation involves three levels: explanation, naïve understanding, and in-depth understanding [12]. In-keeping with hermeneutic phenomenology, the researchers' beliefs and experiences (pre-understanding documented during data collection) and their knowledge of the participants informed the process of interpretation. The transcriptions were separated into two groups and concomitantly analysed by two researchers (ET, HCE) using qualitative data analysis software, nVivo (QSR International, release 1.0). The themes identified by each researcher were described, discussed, revised, and agreed upon by both researchers. A third researcher (WS) reviewed, refined, and accepted the themes during data analysis meetings. WS is a trained Emergency Care Practitioner with experience in qualitative research. Only de-identified data were shared with WS. The thematic development is presented in a coding tree in Table 1.

Results

Participants of the study included 8 emergency care personnel, with an average of 19 years of work experience in emergency care services. The sample included 5 females and 3 males. Demographic details of the participants are contained in Table 2.

A total of seven 15 to 30-minute recordings and 44 pre- and post-shift voice recordings were submitted by the participants via WhatsApp. A total of 15 one-on-one interviews were conducted online with participants. One participant was unable to connect online and submitted a voice recording using WhatsApp instead. After data analysis, approximately 280 codes were extracted from all the transcripts. The codes were summarised after undergoing review several times. Four main themes were identified: 1) In the beginning, waiting for the unknown; 2) Next, change and adaptation in the workplace; 3) My COVID-19 feelings, and 4) Support and connection. The results are summarised in Table 3.

Table 3
Themes, sub-themes, and codes

Main theme	Subtheme	Codes
In the beginning, waiting for the unknown	A growing awareness	A waiting game
		Surreal
	Preparing for the unknown	Shifting perceptions
		Information
		Learning
		Physical preparation
Next, change and adaptation in the workplace	Keeping up with change	Adapting
		Efficiency
		New rituals
	Working with limited resources	Overburdened hospitals
		Continuation of care
		Increased call duration
		Patient care
	Managing relationships	Staff relationships
		Teamwork
		Empathy for patients
My Covid-19 feelings	Restriction	Changes
		Limited resources
		Restriction
		Connection with others
		Family responsibility
		Stress relief
	Uncertainty	Unfamiliar situation
		What waits at work
		Patient treatment
	Fear & anxiety	Contaminating others
		Contracting COVID-19
		Guilt
	Exhaustion	Long work hours
		Heightened emotions
		Patient overload
Support and connection		Top-down support
		Psychological support
		Family
		Patients
		Public services

Theme 1: In the beginning, waiting for the unknown

In the beginning, waiting for the unknown provides a description of participants' growing awareness of the COVID-19 pandemic and the process of preparing for the unknown; what will the pandemic hold? This theme

was sub-divided into the subthemes: a *growing awareness* and *preparing for the unknown*.

A growing awareness

Participants described the realisation that a pandemic was imminent, but as occurring in different phases. They explained that in the beginning they *"did not expect it to be as intense or to affect our [their] lives as intensely as it had…I mean even at that point in time we didn't have any recorded cases, but I think we also knew that it was already here, so it was just a waiting game."* **Participant no. 1 (Paramedic)**

Awareness grew as conversations about COVID-19 increased at work, *"it sorta became the forefront of most of our topics."* **Participant no. 1 (Paramedic)**

Doubts about what to expect and the uncertainty of how to respond to the unknown created anxiety in participants. *"I remember… we thought we had our first case. It was terrifying for all of us. I mean, he [the patient] ended up not having it…But I remember how, how much of a … weird thing for the mind it was to kind of think you were in contact with this potentially deadly virus for the first time."* **Participant no. 4 (EM Physician)**

Participants described a shift in perceptions as they realised the magnitude of the pandemic's impact. *"I still remember when we heard about the first death of a COVID-19 patient. It was shocking. It felt as though it was one of my relatives who died."* **Participant no. 2 (Trauma RN) –** text translated from Afrikaans.

Preparing for the unknown

Preparations for COVID-19 started before it reached South Africa. *"…in the background, we just started preparing and, um, probably before Cyril [Ramaphosa, the President of South Africa] gave us level five [lockdown]."* **Participant no. 4 (EM Physician)**

These preparations involved learning about COVID-19 through information sharing and discussions. *"...we were on a WhatsApp group together and we chat together and exchange information and ask questions all day long on the WhatsApp group and this group was just firing basically at all hours of the day"* **Participant no. 4 (EM Physician)** and *"So, [our] base manager basically started sending a source of information and we started having a lot of discussions around COVID."* **Participant no. 1 (Paramedic)**

Participants also had to physically prepare emergency centres and learn about new protocols. The pandemic was, however, faced and prepared for with no first-hand experience and little information available. "*We were tasked with separating our emergency centre into two emergency centres, a respiratory emergency centre and a non-respiratory emergency centre. And, um, we kind of planned a lot and we did what we thought would be right. And we kind of split it in a certain way and physically had to move a lot of stuff and think it through and make sure you had enough of each type of equipment in each area and you wouldn't be contaminating certain areas."* **Participant no. 4 (EM Physician)**

Theme 2: Next, change and adaptation in the workplace

Participants discussed a world that is characterised by constant change and a need to adapt. Adapting to change in the workplace involved keeping up with new and evolving information and changing the procedures accordingly, providing care amidst a growing need for resources, and maintaining work relationships in a time of heightened emotions. This theme was sub-divided into 3 subthemes: *keeping up with change, working with limited resources,* and *managing relationships*.

Keeping up with change

Participants described a work environment in which change was the new normal. *"So, my work changed overnight to basically 100 percent COVID response..."* **Participant no. 5 (Senior Manager; EM Physician)** and *"Every week we had to be ready to, to adapt and change things according to whatever was going on with the COVID numbers and how many beds we had available and how sick the patients were and what the new guidelines said or if there were any new guidelines. And we just, we just kind of had to keep, keep going and keep being ready for change."* **Participant no. 4 (EM Physician)**

Constant change, however, resulted in feelings of confusion, doubt, and frustration. The need to adapt procedures as new information became available meant that: *"Like we were sort of just given guidelines like one week and like you follow these guidelines and then the next week they would be like, OK, no, we're not following those guidelines and now we're following these ones and like literally would change, like on a daily, weekly basis. So, I think that, like, not only caused a lot of confusion, but also just like really frustrating because in the end you're like, well, are these ones that we're following now correct. Or like, are these not helpful either, like, are they, we, wasting our time?"* **Participant no 7 (Paramedic)**

It was also reported that new procedures had an impact on efficiency (increased call duration and scene time) and the ability to provide care (difficulty working in personal protective equipment (PPE)). *"I was so used to arriving on the scene and just jump in and starting to treat my patient and now you had to sort of stop, remember to put on all your PPE, you know, ask a whole lot of screening questions, … before I can even start treating your patient and that was difficult that change of mindset and that change of practice"* **Participant no 1 (Paramedic)** and *"..PPE is not practical to work in, its hot, it's cumbersome. The gowns that they give us are XXXL, they are large, you fall over in them, you know, you know you can't always practice to the best of your ability in them. Our visors they fog up, makes it very, very difficult."* **Participant no 7 (Paramedic)**

Working with limited resources

The participants reflected on the impact that the limited availability of resources (staff, infrastructure, beds, linen, PPE) had on their ability to perform their functions as frontline workers, both in the prehospital and in-hospital settings. From a prehospital perspective, participants described an increase in call duration due to a lack of infrastructure and staff. "*..for simple patients that you would normally spend like an hour with, an hour and a half, now you're spending like 3 hours on that call, which means that during the period of time that you've dropped off your patient and you are now sanitising your ambulance that can be like an hour or so that you are sanitising the ambulance cleaning everything, you know, all of the equipment… you are stood down for that period of time, it means you can't run on other calls and especially being an ALS paramedic if you are requested for something else you can't go.."* **Participant no. 1 (Paramedic)** Participants also discussed the impact on continuation of care due to the limited availability of hospital beds: *"One of the frustrating things about this whole COVID-thing is the continuation of care, the delay to hospital care from prehospital care and … all the hospitals being on divert and not being able to, you know, take your patient to the closest facility."* **Participant no. 1 (Paramedic)**

Limited resources in-hospital led to difficulty in providing the level of care to dying patients. *"But that's one thing saying, OK, fine, you can't have ICU or a ventilator. But these patients are dying and we just we didn't have enough nurses or carers to look after them at the time. No, nobody we didn't have enough hands to, to feed them and to change them and to clean them. We didn't have enough linen to make sure that they were warm. Um, they were, they were basically on bare mattresses, not being fed, not being cleaned."* **Participant no. 4 (EM Physician)**

A lack of resources also led to the inability to provide the necessary care to patients with non-COVID-related presentations. *"All of a sudden there's a trauma patient who needs an operation, but now there is no COVID beds available, and they end up just dying in our unit because, and it's not of COVID, it's because of COVID. It's absolutely crazy! And that's, that's been quite difficult for all of us - watching people just not getting the care that they need."* **Participant no. 6 (EM Medical Officer)**

Managing relationships

The participants described the effects of heightened emotions and changes in certain procedures on their relationships between patient and provider, between different healthcare providers, and between peers.

"..when I'm covered in all my PPE my patient only sees a visor and a gown they don't really see that I'm also a person treating them… you don't always get the same interaction with them and I don't think you always are able to render the same level of care.." **Participant no 7 (Paramedic)** and *"The whole, the relationship between EMS and hospital staff got a bit strained during COVID or it still is. You know you would arrive at a hospital, and there was always some sort of fight or some sort of delay and things like that."* **Participant no. 1 (Paramedic)**

While some participants experienced a negative impact on work relationships, others discussed a sense of camaraderie and better teamwork. *"There was a lot of teamwork, and the people were a lot more aware of people's limitations and their surroundings but were also very much aware that this was now a team sport, not an individual sport. And I hope that that continues."* **Participant no. 3 (EM Registrar)**

Theme 3: My COVID-19 feelings

This theme provides a description of the emotions and feelings as experienced by the participants during the COVID-19 pandemic. The theme was divided into four sub-themes: *Restriction, Uncertainty, Fear and Anxiety*, and *Exhaustion.*

Restriction

During the COVID-19 pandemic, various restrictions, or limitations to the freedom of movement, action, and social interaction were placed on the citizens of South Africa. Depending on the level of restriction (varying from level-5 to -1), restrictions were placed on time of day a citizen was allowed to be out of the home and the purpose for travelling. Non-essential businesses, such as restaurants and gyms were closed. The participants described their experiences related to the curtailment of their freedom and the effects this had on their lives. "*And then there are also restrictions on daily living, so like so many things being closed, you know, like there's really not much to do on my off days. There's no exercise, the gyms aren't open and stuff"* **Participant no. 7 (Paramedic)** and *"I usually exercise for about an hour a day and I wasn't able to do that for a very long time, which I found very difficult."* **Participant no.5 (Senior Manager; EM Physician)**

Restrictions on movement meant that some participants were not able to travel home using public transport after a certain hour of the day. "*The curfew is a problem cause my partner [work colleague on the ambulance] can't go home with his normal public transport, because he relies on public transport and the public transport stops at a certain time and we end up late, running late, it's a problem for my partner."* **Participant no. 8 (Paramedic).**

Participants described a sense of frustration and anxiety due to a lack of freedom of movement as this not only affected them personally (e.g., not being able to exercise) but it also meant that they were not able to take care of their loved ones in the same way as before. *"We are not allowed to visit family members. We are not allowed to travel. We are not allowed to; we cannot take him [our child] anywhere. There's no one that you can ask to come and help us with our child"* **Participant no. 8 (Paramedic)** and "*If something happened, I wouldn't be able to get to them [family] now or be able to have them get to me if, if the need arose. So even though we were separated by distance [before the COVID-19 restrictions], it was literally just a swipe of a card and get onto a plane and you would be there in five hours."* **Participant no. 3 (EM Registrar)**

This reflection on the curtailment of freedom extended beyond the national restrictions imposed by government to include an additional burden of restriction experienced by participants personally, due to the nature of their work. Being frontline workers meant that the participants were potentially in contact with COVID-19 at work daily, and therefore were seen as a high-risk individual in their communities, and with friends, and family. They discussed feelings of guilt and fear that would go along with taking time for *freedom.* They explained how their movement could put others at risk and the additional responsibility that was related to it. *"And then obviously when you do see friends, … you feel guilty for seeing them because you, you feel like you might be exposing them to this deadly disease"* **Participant no. 4 (EM Physician)** and *"Someone in church [said to me] that when the church opens again, the last person they want to see or have contact with will be me, because I am more exposed to the virus."* **Participant no. 2 (Trauma RN) –** *text translated from Afrikaans*

These self-imposed restrictions were difficult for some participants and the lack of social interaction compounded feelings of social isolation. "*It was quite difficult just in terms of especially not being able to see my family"* **Participant no. 7 (Paramedic)** and *"I think that's what I miss the most, was just being with people, you know, having a braai [barbeque] on a Saturday kind of thing."* **Participant no. 1 (Paramedic)**

Uncertainty

Participants described a sense of uncertainty – not being able to know or predict the impact that COVID-19 would have in their lives or how they should deal with it. This uncertainty about what to expect and how to respond to it was experienced in the work environment as well as in their personal lives - waiting for COVID-19 was *"like waiting for the boogeyman."* **Participant no. 1 (Paramedic)**

Participants discussed the uncertainty in the work environment in terms of how to treat COVID-19 patients, the impact of the decisions they had to make, what they will find when they arrive at work, and trust in the effectiveness of new procedures. There seemed to be a strong link between uncertainty and fear and anxiety. *"I didn't know what we were really dealing with. I was worried about my children. I was worried about going, how will I go to work? Will, will I make it to come home? Will I survive this? Will I, is my risk of getting infected perhaps high and to carry the illness home and to pass it onto my family?"* **Participant no. 2 (Trauma RN) -** *text translated from Afrikaans*. This over time seemed to result in feelings of emotional exhaustion. *"It was, it was really quite emotionally taxing because we, we didn't know what to expect. All we're hearing is how bad this COVID thing is. We didn't know like what we would be, but no one really knew what to expect from a trauma-COVID patient."* **Participant no. 6 (EM Medical Officer)**

Fear and anxiety

Fear, defined as an unpleasant emotional response to a known and definite threat, and *anxiety*, defined as an unpleasant emotional attitude concerning the future in response to an unknown or misunderstood threat, often occurred together. The expectation of danger related to COVID-19 caused a sense of fear and anxiety in the participants and was discussed in relation to the work environment and personal lives. Reflections of fear and anxiety included a fear of contaminating others (high-risk person), contracting the virus, fears of possible future implications such as job losses and the economic impact on the country, as well as what to expect at work. *"We were, we were terrified we would, we would kind of mentally prepare ourselves every day for this kind of Pearl Harbour situation. I remember watching Pearl Harbour one year in that scene where that, the one bomb goes off, Kate Beckinsale is, is running around with her red lipstick and triaging people on their foreheads and to kind of like determine the fate of whether they're going to live or die. And I had this image of, of us just having patients lying on the floor gasping and, and not having enough oxygen for them and not enough beds and, and not enough places to put them. And this fear and this desperation about the possibility of, of what lay ahead."* **Participant no. 4 (EM Physician)**

Fear and anxiety seemed closely connected with the risk of contaminating others, which could lead to their death or serious illness. This feeling resulted in feelings of guilt, and perpetuated the need to isolate, thus further restricting the individual and compounding those feelings. *"I am a high-risk sort of person; you know working with patients every day makes me pretty high-risk to be carrying the virus. … that's not something I wanna pass on to my family members, my extended family members who don't live with me. I am worried for my mother who, would be considered high-risk not only due to her age, but also comorbidities."* **Participant no. 8 (Paramedic)**

Exhaustion

Participants described experiencing physical, mental, and emotional exhaustion due to long working hours and extra shifts; patient overload; continuously being on high alert; additional responsibilities to manage; interaction with patient families and end-of-life care; and poor patient outcomes despite their best efforts. "*He's been with us for over two weeks, to withdraw treatment from him. So we're giving him twenty four hours to prove himself. And we may have to withdraw treatment from him tomorrow, which is quite sad. Um, we've invested quite a lot of time and effort into him. And obviously he is a father and a brother and a son of somebody. And it's quite crippling to the family and I had to give the wife a heads-up that he's more than likely going to demise. So that was not very nice."* **Participant no. 3 (EM Registrar).**

These experiences exacerbated by feelings of restriction, confusion, and fear and anxiety, seemed to have resulted in what some participants called a "COVID-burnout". *"We've all spoken about a COVID-burnout, and I think after the first month or two people really started to feel it."* **Participant no. 1 (Paramedic)** This was also reflected in the extreme loss of energy prevalent amongst frontline workers during this time. *"Nursing staff are tired. Hospital staff are tired, cleaning staff are tired. Security staff are tired. EMS crews are tired."* **Participant no. 8 (Paramedic)**

Exhaustion made it more difficult for participants to perform their duties. Some participants described how they kept on working as they did not always recognise their own exhaustion. *"I've just gotten to the stage where I'm not being productive in my nonclinical duties, my clinical duties, I'm trying to still kind of pull my weight, um, but it's, it's getting harder and harder. Um. I think sometimes it helps to hear it from somebody else, that, that you kind of look like you're struggling. Otherwise, you just, you don't realise that you just keep on going."* **Participant no. 4 (EM Physician)**

Theme 4: Support and connection

The participants shared lived experiences of encouragement, connection, and a need for better support. Support received from managers in times where participants had to make difficult decisions about patients were described. *"Um, we had to make a sad call this morning with one patient on a ventilator who's not doing very well… Um, my boss called me aside. He wanted to see if I actually carried that decision. People, or one thing about [this hospital] is that they take one's mental status into consideration and wanna make sure that you're fine and that you're coping because this is obviously not normal to be having these situations."* **Participant no. 3 (EM Registrar)**

Participants shared stories of instances in which support to patients were provided in new and unfamiliar ways to allow for encouragement and compassion from loved ones. This exposure to the intense emotions of others added to the emotional burden of the participants themselves. *"Just as much as I loved this and as much as I loved being a support to family, the emotional impact that it created was quite hard on me … picking up the tablet and allowing the family to video call. It was both beautiful and scary. It was beautiful that the families could cry and chat and smile and laugh and interact … but listening to people saying their goodbyes, watching families mentally and emotionally break down … and having that emotional connection with the patients that was that intense. It was not something I wasn't mentally prepared for and something that I was not, that I did not really think through when I implemented the service, and being the only person or one of the only people that actually took on this responsibility for the video calling and video – interacting with the COVID patients, was quite, ja, was quite hard. It was not nice going home and adding an extra emotional burden onto it."* **Participant no. 3 (EM Registrar)**

Situations were created that provided emotional relief to the participants. An example of this is when the Jerusalema [16] craze swept across South Africa and a space was created for hospital staff to escape through dance. Not only was this described as an opportunity to experience a sense of *freedom*, but also an opportunity for social connection. *"I think it was amazing for the morale. So, on the on the day of the, the [Jerusalema Dance] video, so before the day of videoing it, it was the dance practice that people were doing in their departments every day. And then we had a communal practice on the helipad at about lunchtime every day and people would come and join, and I think that was very good for, for everybody to kind of see each other and be in the sun and hear some music and dance a bit. And it was it was very … good for people."* **Participant no. 4 (EM Physician)**

Notwithstanding the support and opportunities for connection that did exist, participants felt that there was a need for better support to healthcare workers during pandemics. Some participants explained that: *"It was quite sad that we didn't get offered more help. But it's such an ingrained problem in medicine. It's completely ignored, mental health, I feel, it's a bit taboo to talk about. … You were offered counselling sessions. I don't know how many people even took that on."* **Participant no. 6 (EM Medical Officer)**

Participants also described instances in which promises of support were not followed through. *"We had one [specific] patient, that all the nursing staff started to fall in love with, all the doctors fell in love, … who passed away and that was very traumatising for everyone. And it was said after that that, OK, we can have a debrief session because I can see how everyone is emotionally involved in this, but it was never, ever followed through."* **Participant no.3 (EM Registrar)**

Discussion

The study aimed to explore emergency medical personnel's lived experiences and their perceptions thereof within the context of the COVID-19 pandemic in the Western Cape province of South Africa. Four themes emerged during the data analysis: 1) In the beginning, waiting for the unknown; 2) Next, change and adaptation in the workplace; 3) My COVID-19 feelings, and 4) Support and connection.

Theme 1, 'In the beginning, waiting for the unknown', speaks to the initial response to an imminent threat and the process of preparing for the unknown. A sense of disbelief and unfamiliarity marked the first couple of weeks after the World Health Organisation declared COVID-19 as a global pandemic. Preparations for the unknown started immediately and involved gathering information, learning about the disease, adopting new protocols, and making physical preparations in emergency centres.

Experiences around the unfamiliarity with COVID-19 included discussions about the authenticity of information and the integration of new information into practice. As more information became available, protocols were adjusted accordingly, which led to an environment which was characterised by constant change.

In theme 2, 'Next, change and adaptation in the workplace', participants discussed their experiences keeping up with constant change in an overburdened environment. The pandemic exacerbated the scarcity of critical care resources resulting in implicit and explicit rationing based on the odds of prognosis. Doing the best for the most was considered as a constitutional imperative and yet at odds with HCW training and beliefs [17,18], which likely contributed to stress levels [5] and possibly moral injury [19]. Although not a formal mental health condition, moral injury does predispose to negative thoughts about self and others and can predispose to mental health conditions including suicidal ideation [20,21]. The long-term consequences of the pandemic then, is yet to be seen.

Prolonged exposure to these burdens resulted in what some participants referred to as "COVID-burnout" - a sense of exhaustion affecting work and personal lives and resulting in reduced work satisfaction and difficulty in performing work tasks. In addition, rapidly changing guidelines could have led to an information overload that in itself may lead to information anxiety which in it turn, could lead to anxiety overload – explaining these results [22]. However, despite these difficulties, participants demonstrated resilience and commitment to caring for patients. Results indicated that change, over time, resulted in adaptation to a new way of practicing and keeping safe in and outside of work.

Results showed high levels of uncertainty, restriction, fear, and anxiety. Theme 3, 'My COVID-19 feelings', provides a description of these feelings. These results were consistent with previous studies explor-

ing the lived experiences of frontline HCWs during the COVID-19 pandemic. A sample of diagnostic radiographers described "feeling sad, terrified, confused, stressed, scared, exhausted, anxious, overwhelmed, frustrated, uncertain, and panicked" as COVID-19 unfolded in the Gauteng province of South Africa [23]. In a study conducted in India, participants were challenged by fear of infection, uncertainty, perceived stigma, a sense of guilt, social isolation, and loneliness and burnout [24]. Similar results were found in Northern Ireland [25], Canada [26], Qatar [27], and the United Kingdom [28]. COVID-19 feelings could be indications of imminent, or existing, conditions such as burnout, depression, and PTSD, as well as intensions to resign. These feelings and conditions were, amongst others, identified as being prevalent among COVID-19 health care workers [29–33] although not unknown prior to this pandemic [34]. It is important therefore for organisations and policy-makers in Low- or Middle-Income Countries (LMICs) to develop support structures after the pandemic to ensure recovery and retention of scarce healthcare human resources.

Frontline emergency care workers experience intersecting consequences during pandemics: as healthcare workers, members of a family, and members of the public. Results indicated that HCWs perceived themselves to be high-risk members of the community, due to the proximity with the virus, which led to an increased level of restriction, guilt, and in some cases healthcare worker stigma. HCWs were perceived to be carriers of the virus and have been stigmatised and discriminated against in many parts of the world [35]. Different to other pandemics that our planet has encountered, the unprecedented (social) media coverage has exacerbated COVID-19-related panic and despair not just in the general population, but amongst HCWs too [36,37]. False information circulated on social media also contributed to the formulation of misconceptions, othering, and stigmatising responses to HCWs [38]. Such discrimination and social harm were evident locally against doctors who tested positive in the Limpopo province of South Africa [39].

What is clear is the importance of providing support to and instilling a sense of connection in frontline workers. In theme 4, 'Support and connection', participants shared their experiences of support and connection that helped them cope with the pandemic as well as their expectations of support that were not met. Participants also shared stories of putting in extra effort to provide emotional support to sick patients and their families, and of encouragement and camaraderie between colleagues in the workplace.

The work-related support identified in the current study included managerial and mental health support to frontline workers. Both of which are supported by previous studies [33,40,41], with mental health support being a concern in LMICs, and of special importance to younger HCWs [42,43]. A scoping review of the mental health of HCWs during COVID-19 found that management and organisations play a big role in ensuring mental health in the workplace. The accessibility and appropriateness of psychological support were also highlighted [43]. The connection construct referred to social connection and hint towards feelings of isolation experienced by the participants. This speaks to relatedness which have been shown to be negatively associated with psychological distress [44]. A sense of social connection might be achieved by making frontline workers feel valued [32] and improving communication [40].

While there is a paucity of research investigating the effectiveness of support structures for HCWs during the COVID-19 pandemic, several studies have indicated that resilience training has the benefit of reducing anxiety, stress, burnout, and depression in HCWs [45,46]. Research conducted during previous pandemics have indicated similar benefits associated with resilience training. Maunder et al., designed and tested the effectiveness of an educational intervention aimed at improving resilience during a pandemic, called the Pandemic Influenza Stress Vaccine [47]. This interactive computer-assisted course, which includes knowledge-based modules, relaxation skills, self-assessment modules, and feedback was found to improve pandemic self-efficacy, confidence in support and training, and interpersonal problems. Similarly, Yi-Frazier et al., adapted the Promoting Resilience in Stress Management (PRISM) Programme, previously designed for adolescents and young adults with serious chronic illness, to support HCWs during the COVID-19 pandemic [45]. The "PRISM at work" programme followed a skills-based coaching design that covered the science of resilience, stress management, goal setting, cognitive reframing, meaning making, and coming together and moving forward in 1-hourly sessions over a 6-week period. These results echoed other resilience studies conducted amongst HCWs [46,48–50], highlighting the importance of resilience training as part of support structures and response preparedness during a pandemic. Importantly though, it is our belief that resilience training should be embedded in everyday HCW training and not only be initiated during times when the healthcare system may be under strain from shocks such as pandemics or disasters.

While we were unable to compare many of our results to similar studies in Africa, this does not denote evidence of absence. While HCW experience is relatively well-described in high-income countries [25,51], this does not mean that similar (and worse) experiences were not noted on the continent. Limited resources and a crumbling healthcare infrastructure reduce the already limited capacity for research in the global South. This may signify an important publication bias in the way we report HCW experiences during a pandemic. It is our recommendation that the voices of more Africans and people from LMICs join the conversation related to HCW lived experience during the COVID-19 pandemic to provide a balanced view. This may provide valuable information to safeguard these valuable resources for future pandemics.

Though there was consensus that data saturation was reached within the study sample, it is important to consider that the sample size was small and that additional themes may be identified should the sample size increase. Due to the COVID-19 restrictions that were in place at the time of data collection, one-on-one interviews were conducted in a virtual space, which may have impacted the data that were collected. However, by making use of multiple data sources, we sought to mitigate against this. In order to minimise the impact of the research on service provision, interviews had to be arranged between waves. This may have affected the lived experiences of the participants.

Conclusion

The beginning of the COVID-19 pandemic brought about feelings of disbelief and confusion, and changes in clinical guidelines and protocols at work. HCWs experienced frequent adaptations in their work environment whilst at the same time dealing with multiple challenges such as a lack of resources, long work hours, and tired staff. HCWs experienced intersecting consequences as frontline HCWs and members of the public, all of which impacted their well-being. Despite these challenges HCWs exhibited resilience and compassion towards patients and co-workers. The importance of compassion and encouragement as forms of support was highlighted in the study. Robust and sustained support structures in a time of change, low mood, and exhaustion are essential.

Dissemination of results

Results of this study was shared with the research participants through an informal report. Dissemination of results is also undertaken through open access publication.

Author Contribution

Authors contributed as follow to the conception or design of the work; the acquisition, analysis, or interpretation of data for the work; and drafting the work or revising it critically for important intellectual content: ET and HCE contributed 30% each; WS 25%; and HG, WK and CW contributed 5% each. All authors approved the version to be published and agreed to be accountable for all aspects of the work.

Declaration of Competing Interest

Dr Stassen is an editor of the African Journal for Emergency Medicine. Dr Stassen did not participate in this manuscript's editorial process. The journal applies a double blinded process for all manuscript peer review. The authors declared no further conflicts of interest.

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