Healing the Healers: A Phenomenological Exploration of a Brief Online Mindfulness Course on Stress, Burnout and Coping Strategies of Health Care Professionals During the COVID-19 Crisis

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Healing the healers: A phenomenological exploration of a brief online mindfulness course on stress, burnout and coping strategies of health care professionals during the COVID-19 crisis

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Abstract

Background: During the COVID-19 pandemic, health professionals were pushed to the front line of a global health crisis unprepared, resource constrained, and with heightened uncertainty and distress levels. The impact of an online mindfulness-based intervention (MBI) for health care professionals amid a pandemic has not been previously documented. This study aimed to investigate the feasibility and effectiveness of a brief online MBI on stress, burnout and mindful awareness for health professionals training and working during the COVID-19 crisis.

Methods: A mixed methods, phenomenological, participatory evaluation framework was adopted for this study. A four-week online training programme was adapted and delivered to health professionals via the Zoom platform. Non-probability snowball sampling was used to recruit participants. The quantitative data was analysed using descriptive analysis via Stata 15.1 statistical software, and the participants' qualitative experiences were interpreted using interpretative phenomenological analysis (IPA).

Results: Forty-seven participants took part in this study. The study found a statistically significant ($p < 0.05$) reduction in stress levels and emotional exhaustion as well as an increase in mindful awareness and feelings of personal accomplishment between the pre- and post-intervention assessments of the MBI. The participants' shared experiences were analysed in two parts. The pre-intervention analysis presented with central themes of loss of control and a sense of powerlessness due to COVID-19. The post-intervention analysis comprised themes of a sense of acquired control and empowerment through increased mindfulness.

Conclusions: The study found that a brief online MBI can be associated with increased awareness and present-moment focus as well as reduced levels of stress and burnout. The MBI had a positive impact on the health care professionals' sense of control and empowerment, and increased their perceived sense of competence and accomplishment, both personally and professionally, during the global crisis.

Keywords: mindfulness, stress, burnout, COVID-19, mental health, self-care, health professionals, meditation, compassion

Background

Health care professionals (HCPs) are typically under a great deal of stress due to the nature of their work and environment. The pressure they experience stems from emotionally taxing content, long working hours and minimal control over the environment [1]. Continuous exposure to these stressors may lead to burnout [2]. Burnout is a work-related syndrome that consists of chronic emotional exhaustion, cynicism and a lack of personal accomplishment [3]. Burnout negatively influences medical professionals' efficiency and therefore overall health care [4]. Further compounding this issue are HCPs' poor help-seeking behaviours [5] and unhealthy coping mechanisms [6].

Globally, practicing medicine has become more challenging [7]. However, the current medical crisis brought on by COVID-19 is an unexpected global challenge at many levels [8]. At the time of the

study, 7000 HCPs had died globally from the virus and South Africa's infection rates among HCPs were rising rapidly, with the death toll at 240 at the time and progressively worsening [9]. Lambert et al. [8] found that public health measures to contain the pandemic have in themselves produced alarming increases in socio-economic and mental health problems. In this context, frontline health care workers became vulnerable to the emotional impact of COVID-19 [10] and burnout.

Mindfulness is a term used to characterise practices and characteristics of attention, awareness and acceptance [11]. It has been found to help the HCP by making intuitive and tacit professional knowledge accessible, and fostering care and compassion towards self and others [12]. However, imbuing mindfulness through formal eight-week programmes can be challenging [13] due to time constraints. In a systematic literature review of brief mindfulness practices for HCPs, Gilmartin et al. [14] found that shorter MBI programmes also reported positive changes in stress levels, resiliency and burnout symptoms. These findings are encouraging, as HCPs in resource-constrained environments need a feasible and accessible MBI, considering their added constraints.

Though there is emerging evidence indicating the effectiveness of brief online MBIs for health professionals [15], more robust mixed methods designs are needed [16]. To address this gap in the literature, this study adopted a mixed methods study design, which includes a phenomenological perspective. Furthermore, the effects and experiences of the process of implementing a brief online MBI for HCPs in diverse, heterogeneous, multicultural settings and amid a global pandemic have not been previously documented. Hence, this study investigated and described the impact of a brief online MBI on the experience of stress, burnout and mindful awareness of diverse, multicultural, inter-vocational health professionals training and working during the COVID-19 crisis.

Methods

Setting

This context of the study is the overburdened, under-resourced health care system in post-apartheid South Africa during a global pandemic. During the study, the government implemented lockdown

measures to restrict the movement of people, as infection rates peaked with an average of 8000 to 10000 new infections a day. The death rate ranged from around 87 to 267 per day at the time that the intervention was offered (10 August to 10 September 2020) [17]. However, even before the pandemic, the existing situation in the country had been labelled a health crisis [18] due to the grim state of public health facilities, within which a vast majority of health services were operating below the required standards [19]. Although the public sector provides health care to 84% of patients, there was only one doctor per 4000 patients [20].

Study design

A phenomenological, participatory evaluation research intervention study was conducted with a mixed methods design using both qualitative and quantitative methods. All methods were carried out in accordance with relevant guidelines and regulations. The quantitative design had a pre-assessment and post-assessment component, which allowed paired comparison. The qualitative design comprised open-ended questions related to stressors, challenges and experiences before and after the MBI. Photovoice, which has been proven to be an effective tool to encourage reflection and critical dialogue [21], was also implemented to explore participants' perceptions. This aspect of the study will be reported on in another paper. The qualitative data was analysed using IPA. Ongoing enquiries were conducted for each component of the MBI using both the online and WhatsApp Messenger platforms. WhatsApp groups have been used effectively as a form of organisational communication in mindfulness practice [22] to transfer information and support.

Sampling strategy and study population

Medical professionals working in South Africa were invited via email and other online communication platforms, such as WhatsApp, and encouraged to share the invitation to any interested peers. Thus, purposive snowball sampling was used. Snowball sampling has been found to work well when looking for information-rich sources of data from a sample with specific characteristics [23]. Informed consent was obtained from all participants prior to participation in the study.

Sample size was computed and verified using the software GPower 3.1, which noted that a sample size of 34 would be adequate to answer the research question, taking into consideration the research design and depth of study, with an effect size of 0.4 and a power of 0.8. Sixty-five participants met the criteria and signed up for the study and fifty-five attended all four sessions, but only forty-seven completed all the required assessments. The criteria included being over the age of 18, a practicing health professional and working within South Africa at the time of the study.

Mindfulness intervention

A four-week mindfulness-based programme compiled by a clinical psychologist and mindfulness teacher was adapted with permission for a brief four-session online MBI [24]. The programme was facilitated by two of the authors (IO & VSS) and conducted via the collaborative cloud-based video conferencing platform Zoom by two qualified and experienced mindfulness teachers. It consisted of four one-hour group sessions, which included three meditations, one of which was always a three-minute breathing space followed by discussions about the process.

Data collection

All participants completed the following validated assessments before and after the MBI: the Mindful Attention Awareness Scale (MAAS), the Perceived Stress Scale (PSS) and the abbreviated Maslach Burnout Inventory (aMBI). The MAAS is a 15-item measure used to ascertain trait mindfulness. Each item is rated on a Likert scale between 1 (almost always) and 6 (almost never) in relation to the respondent's everyday experience. Higher scores reflect higher levels of mindfulness. The PSS is a 10-item self-report instrument, which measures the degree to which events in one's life are perceived as stressful. Each item is rated using a scale from 0 (never) to 4 (very often), with higher scores indicative of higher levels of perceived stress. The aMBI is a nine-item scale widely used to assess burnout. It has three subscales, namely emotional exhaustion, depersonalisation and personal accomplishment. Each subscale is assessed by three items on a seven-point Likert scale that ranges from never (0) to every day (6). Higher scores for emotional exhaustion and depersonalisation, and a lower score for personal accomplishment indicate a higher level of burnout.

Before, during and after each of the four weekly sessions, questions that explored the process and impact of the intervention on participants' personal and professional life, including stress management, emotional regulation, and how they responded to patients and work stressors, were posed via the Chat box on the Zoom platform. To counter the possibility of a positive bias towards mindfulness, questions on its challenges, drawbacks and limitations were also included. This part of the study was based on a hermeneutic-phenomenological, participatory evaluation framework in that every aspect of the intervention had the input of the participants, and the process was transparent and encouraged reflexivity of all the different sessions in the formal programme. Each participant was also given an individualised report based on their pre- and post-MBI assessment results. A group feedback session was conducted a month after the intervention. Participants' comments and feedback related to their experiences and observations of the MBI were solicited weekly either verbally or in writing via the Chat box on the Zoom platform.

Data analysis: qualitative data

The qualitative data was analysed using IPA. This entails examining how participants process their experiences by looking for recurring themes [25]. It involves the double hermeneutic of participants endeavouring to make sense of their experiences and the researcher seeking to understand the ways in which they did so [25].

The transcripts from the online questionnaires sent via the online service SurveyMonkey (<http://www.surveymonkey.com>) and the online focus group discussions from the recorded sessions on Zoom were analysed by the principal investigator using themes that arose from the data. IPA was conducted by first doing an in-depth reading of each case and attempting to understand the individual's perspective as much as possible by reading the pre-assessment questionnaires and comments in response to specific questions asked during the Zoom sessions. Transcripts were then uploaded to NVivo 12. NVivo 12 is a qualitative data analysis application used to create nodes and themes, and check for frequency of words to help guide the process before moving on to look for patterns of convergence and divergence. This process was followed by two authors (IO & SH)

independently and then common themes were discussed, collated and verified with the third author (VSS). Once consensus was reached, these themes were shared with the participants in the form of individualised written feedback as well as in a group setting during a feedback Zoom meeting, due to the participatory nature of the study.

Data analysis: quantitative data

Research data obtained from the assessment tools (MAAS, PSS and aMBI) were primarily analysed within a quantitative framework using univariate and multivariate analyses. Data was entered from Microsoft Excel into Stata 15.1. A p -value < 0.05 was considered statistically significant with a 95% confidence interval. Descriptive statistical analysis of the data (means, standard deviations, ranges, frequencies and scores) was initially conducted prior to conducting inferential statistics. The paired samples t -test was used to assess the impact of the MBI. Pearson's chi-squared test and Fisher's exact test of association were used.

Results

The sample consisted of 46% medical doctors and trainees, 16% psychologists, 14% physiotherapists, 14% occupational therapists and 10% other allied health care workers. HCPs from both private practice and government hospitals (urban and rural) participated in the study. The ages of participants and years of experience were described by the median and the interquartile range (IQR), since the mean assessed by the Shapiro-Wilk test was not normally distributed. The median age was 34 with an IQR of 18 years. The least experience was six months, and most was 33 years. The median years of experience were seven years. No significant correlations were found between participants of different genders, ages, cultures or years of experience with regards to their levels of stress, burnout or trait mindfulness.

The results will be divided into two parts: a pre-intervention analysis with central themes of loss of control and a sense of powerlessness predominantly due to COVID-19, and a post-intervention analysis comprising themes of a sense of acquired control and empowerment due to increased

awareness and mindfulness, as illustrated in Figure 1. These main themes will be explored and discussed with various subthemes.

Figure 1: IPA themes and subthemes

Figure 1: IPA themes and subthemes

Pre-intervention analysis

Theme 1: Loss of control and powerlessness

It was unsurprising that COVID-19 presented as a major stressor and appeared to have affected every single participant, mostly in a deleterious manner. The subthemes were: COVID-19 and the uncertainty around it; elevated anxiety; concern for the safety of self and others; and emotional overwhelm due to limited resources, an invalidating work environment and exposure to a heightened number of deaths.

Subtheme 1.1: COVID-19 and the uncertainty around it

To further compound the psychological impact and dread caused by COVID-19, the subsequent lockdowns to prevent the spread of the disease had caused a severe economic crisis, and the limited understanding of the condition and how it is spread further added a sense of frustration, uncertainty and dread [10]. This is observed in the following comment from a participant:

“The whole COVID situation. Working hours being cut, decreased salary, not being communicated about what is happening in the practice ... the unknown.”

COVID-19 was in essence seen as a crippling and negative life-altering event, which was exacerbated by the fact that one’s mortality was highlighted, resulting in increased anxiety. These feelings were further fortified by other elements, such as a lack of resources and an overwhelming sense of powerlessness and loss of control.

Subtheme 1.2: Elevated anxiety

In the transcripts, the word ‘COVID’ was mentioned 55 times, ‘anxious’ around 100 times, and ‘stressful’ 45 times. These words became the basis of the first theme, for every participant, without exception, spoke of the impact of COVID-19 on their work and how it was hard to adjust to the new challenges that this situation presented. Participants described their anxieties in the following phrases, in which they appear to perceive COVID-19 as a constant threat:

“My world had been spinning out of control since the beginning of COVID and the extreme stress I was under.”

“Being emotionally spun out in the COVID environment at work especially... burnout and loss of enthusiasm for my work, feeling of fear and even dread when I think of work”

Subtheme 1.3: Concern for the safety of self and others

One of the main reasons cited for the elevated anxiety levels was the fear of increased health risks to self and family members, which are conveyed by the following quotes:

“Fear that I will contract COVID again”

“The main stressor currently is the COVID pandemic and the fear that I will bring it home to my family.”

Participants attempted to reduce this fear of getting sick and, worse, passing on the virus to family members by isolating themselves from family during this time, which had its own set of repercussions.

Subtheme 1.4: Emotional overwhelm

Participants felt emotional overwhelm due to limited resources, an invalidating work environment and exposure to a heightened number of deaths. They reported that a significant contributing factor to their already present anxiety was the fact that they were expected to work with COVID-19 patients with limited personal protective equipment (PPE) and little or no support from their work environment. This increased their fear of contracting the disease, which was further heightened by witnessing high death tolls. This led them to feel extremely emotionally overwhelmed, as evidenced in these participant statements:

"I'm stressed about seeing patients and passing on any diseases to patients because we aren't being provided with PPE."

"Demanding patients, feeling sympathy for them and family but unable to fully help them due to lack of resources"

Participants reported that a contributing factor to their experienced stress and heightened anxiety was working within a perceived 'invalidating and unsupportive' work environment, as mentioned in the following statement:

"Lack of sleep, lack of appreciation at work, feeling like a slave at work being disrespected.... Given no warmth and consideration. Being unheard. Feeling out of control; that I should've done better, exhausted."

Although HCPs may be used to death and dying, it being part and parcel of their profession, the scale of death caused by the COVID-19 pandemic was unprecedented. This resulted in heightened guilt, helplessness and dissociating as a way of coping:

"I see people die daily ... the only way to deal with all these deaths is to be nonchalant about them".

"Guilt about death and bereavement, becoming numb"

The overall feelings prior to the intervention appeared to be fear, helplessness and overwhelm due to the uncertainty and conditions that the HCPs were expected to work in, which affected their overall sense of competence and wellbeing. A way in which many of the participants chose to cope during this time was to go on autopilot and simply dissociate from the emotions that they were feeling.

Post-intervention analysis

Theme 2: Control and empowerment

The main theme to emerge from the post-intervention data was an increased sense of control and a feeling of empowerment, which were related to the increased ability to be mindful. An enhanced sense of awareness and present-moment focus led to an overall sense of calm, increased compassion towards self and others, decrease of dissociation, emotional regulation and a feeling of competence.

Subtheme 2.1: Enhanced awareness and present-moment focus

Figure 2: MAAS 1 pre-intervention levels and MAAS 2 post-intervention levels

As illustrated in Figure 2, the MAAS levels increased significantly, with a p -value <0.001 from an initial mean of 3.5 to 3.9 after the intervention, indicating that participants were able to be more

present and aware, and alluding to an increased ability to be mindful compared to before the intervention. The standard deviation was 0.8.

These results were further fortified by the qualitative data. The word 'awareness' was the most-mentioned word and appeared 261 times in the transcripts, followed by the word 'present', which appeared 102 times. Being more aware of one's self, thoughts and emotions appeared to lead to increased compassion towards oneself and others, being able to respond in a calmer way, regulate one's emotions better, and feel more competent in one's work. This is highlighted in the following statement, which depicts how self-awareness influences self-control:

"I'm noticing that, if I become aware of the thoughts in my mind, I can be more in control in terms of directing how I respond."

Many participants also spoke of relief at being present in the moment as opposed to looking at their actions in the past, which often led to regret and harsh self-criticism, and worrying about the future, which they claimed caused anxiety. They said:

"I feel like being present in the moment allows me to have a better experience of what I am doing. I am enjoying my activities."

"I reflected on how irritable I had been prior to the intervention and just how fatigued I felt. It also brought greater awareness to my need to just be present. I'm constantly worrying about something or planning the future that I neglect the present and it's so exhausting."

This new way of relating to thoughts led to a feeling of calm, as discussed in the next subtheme.

Subtheme 2.2: Calm

Figure 3: PSS 1 pre-intervention levels and PSS 2 post-intervention levels

Comparing assessment results prior to the intervention and then immediately after, the PSS levels dropped significantly after the attendance of the BMI ($p < 0.001$) from an initial mean of 23.8, which was classified as a high average stress experience, to 16.9, which was classified as a low average perceived stress experience, and a standard deviation of 5.4 (Figure 3).

These results are further understood by looking at the following statement:

"I definitely kept thinking about my thoughts How I tend to make it worse by playing it out in my mind ... Now I'm trying to let go more."

Increased awareness not only changed the way participants related to their own thoughts, but also led to an enhanced sense of meta-awareness, that is, being aware of self and identifying their own needs. This appeared to lead to being kinder to self and others.

Subtheme 2.3: Increased compassion

The increased self-compassion resulted in more self-care behaviours being adopted, which is critical as it sustains the decrease in stress and maintains the lessons learnt from the mindfulness practice.

This ability to care for one's self and see oneself as competent was assessed in the personal accomplishment scale of the aMBI, which showed a statistically significant improvement with a p -value of < 0.001 . The questions asked in this scale looked at feelings of competence in work and finding meaning in the job. Higher scores allude to participants feeling that they make a difference and are good at what they do. Depersonalisation is the opposite of being able to empathise. A sense

of cynicism is part of burnout. A reduction in the score is indicative of an improved ability to connect and to look forward to working with people. Depersonalisation dropped from a mean of 3.2 to 1.9 after the intervention, even in the midst of a global pandemic and with the fear of contracting the virus and taking it home to family, but overall this was not found to be statistically significant. A high percentage of HCPs already had a low depersonalisation score and thus ability to empathise before the intervention.

Self-compassion and self-care were evident in the following statements:

“Being present without judgement has really stayed with me these last couple of weeks as I am so hard on myself at times – mindfulness has helped with this.”

“It has taught me how to not want to constantly please people around me at my own expense. I want to do the best for my patients, so I give 100%, but I have to acknowledge that I fill my own cup first.”

An increase in compassion with patients and peers was observed in the following statements:

“Instead of being angry with patients because the systems are not working, I started to engage with them on a more personal level and realise the challenges they are going through. This has humbled me.”

“I have been able to respond with more care and kindness to my colleagues who have been needing assistance, despite my own workload.”

“Accepting and recognising that others are going through an emotionally harrowing time, and being able to show patience and compassion ...”

Subtheme 2.4: Emotional regulation

Figure 4: EE 1 pre-intervention scores and EE 2 post-intervention scores

Awareness of emotions leads to enhanced emotional regulation skills, as seen in the emotional exhaustion subscale scores (Figure 4) of the aMBI, which showed a significant reduction in emotional exhaustion from a mean of 10 to 8.9 ($p = 0.04$). The standard deviation was 4.6.

These results were explained by a participant as follows:

"I was more aware of reacting emotionally to something that triggered a feeling of anger, was able to just ground myself and eventually managed to react with calmness."

Subtheme 2.5: Sense of competence

It is understandable that health professionals are under a lot of pressure and feel the need to multitask and rush through their work due to the huge treatment gap, especially if working in the public sector as discussed in the background section. However, being mindful does not appear to take more time as one would fear, but in fact by being more present and engaging with increased awareness and ability to regulate themselves, it appears that participants saved time through increased efficiency and performance:

"I have noticed that I was able to be more ordered in my patient treatment process. I didn't miss any steps or need to redo anything."

“I think that a lot of the principles of mindfulness really enhance and encourage that process, not just on a personal level that you are less stressed and more peaceful, but also you become more effective.

Discussion

The focus of this study was to investigate the impact of a brief online MBI on stress, burnout and mindful awareness of HCPs working and training during the COVID-19 crisis. By working with health professionals of different experience levels based at both urban and rural government hospitals during this time of a pandemic and subsequently under a great deal of stress, the aspects of the mindfulness programme that were effective were inferred.

Pandemics are a public health threat so momentous that they demand a response that virtually alters the social and economic dynamics of everyday life through heavily regulated restrictions of people's movements [26]. Frontline health care workers in fact bore the brunt of the pandemic, as they became the 'defence force' against this new enemy. Whilst the general public were still protected to a degree by the lockdown imposed by the president of the country, HCPs had to continue working and facing this new threat head-on. The general sense from management and government appeared to be that HCPs knew what they signed up for and that they must just do what needs to be done with whatever resources they have. The rising patient admissions and increasing workload exacerbated the anxiety due to lack of support from management and no incentives such as staggering of work hours or shifts, or even being able to leave work earlier to minimise risk but also to allow the overworked HCP to relax.

Taking into cognizance the high stress levels, poor coping mechanisms and under-resourced conditions that the health professionals work in, one might argue that the environment that they are expected to function in should be changed. However, while that may not occur as quickly as we would like it to, a more constructive approach of altering the HCP's perspective of the situation by reframing their mindset was adopted. This new perspective had a subsequent impact on their

emotions, behaviour and resilience, as observed in this study and previous research [27]. In essence, this study enhanced the HCPs' perceptions and responses to highly stressful contexts.

Quantitative results confirmed that our sample consisted of predominantly highly stressed individuals who were vulnerable to burnout with low levels of mindful awareness and present-moment focus. Fear of the unknown is known to raise anxiety levels in healthy individuals as well as those with pre-existing mental health conditions [28]. Medical professionals develop a manner of coping with uncertainty and death, as they are regarded as unwelcome parts of the profession; however, with regards to COVID-19, the number of deaths significantly increased as the world was still in the process of learning how to respond to this disease and everything changed in a very short period of time. Therefore, although HCPs may be used to death and the unknown being part and parcel of the profession, most were unprepared for the scale of deaths caused by this pandemic and the intensity of change it brought [29]. While dealing with death and disease is a norm for HCPs, there is usually a *modus operandi* of management of diseases, but the pandemic was a novel experience for all, taking away any sense of control of the situation as they were venturing into the unknown. This resulted in heightened guilt and helplessness, as illustrated in the findings of this study.

The study found notably significant post-intervention changes. These were reduced stress levels, lower levels of emotional exhaustion, a feeling of being more present and aware, and overall enhanced feelings of self-competence, as evident in the data presented. This benefitted HCPs by helping them to be more aware of their own thoughts and feelings, resulting in being more emotionally regulated, responding more mindfully to stressors, and being more compassionate and caring to self and others [30]. While the challenges of dealing with the unknown and a lack of control of the future were still present, what practitioners learnt was that they could work and function within the present, which reduced anxiety over an unpredictable future. In practice, this meant that as opposed to being focused on an assumed apocalypse, HCPs changed their perspectives to the here and now and what they could control. This change was found to be liberating, as it removed the

anxiety that the feelings of lack of control and helplessness triggered, and reinforced their ability to revert to their pre-COVID medical competence and professional confidence. The encouraging factor was that this was achieved through a brief 4-week intervention as opposed to longer 8-week programmes [14], and via an online version instead of the normal face-to-face sessions [31]. Though there is some research to show the benefits of brief online MBIs [16], this is the first in-depth study of its kind to show the impact and process of an online MBI during such intensely stressful times with a group of heterogeneous, interdisciplinary HCPs who were not familiar with each other or the facilitators.

The significant decrease in stress levels, with a concomitant increase in sense of empowerment and heightened sense of perceived control, was validated further by the qualitative findings. Not only did the HCPs speak of enhanced well-being, but also of increased efficiency and resilience that were noted in both their objective and subjective sense of competence. Compassion was another pivotal theme that changed the way HCPs related to themselves and others. Previous research has shown that the medical community is now increasingly acknowledging that competent professionals are committed not only to the well-being of patients, but also to their own well-being, which in turn not just reduces stress, but increases performance and enhances the ability to relate to others [30].

This study's findings not only align with previous findings, but also contribute to the growing body of evidence-based studies that confirm the effectiveness of mindfulness as a therapeutic intervention and facilitating practitioner growth and skill development [32]. Thus, we emphasise the importance of practitioner self-awareness of his or her interactions with patients, which reinforces the adoption of a more patient-centred approach. Therefore, the adoption of mindfulness has multifactorial benefits.

Little research to date has focused specifically on how HCPs experience mindfulness [33] within multicultural, interprofessional settings and during situations of intense stress and crisis. This study had a cross-sectional sample with a range of different health professionals of differing years of experience and training working under varied circumstances during the COVID-19 crisis. Culture,

language and power or hierarchy were also considered, but the results were found to be universal and we were able to transcend these differences. Perhaps the online Zoom platform facilitated a focus on the MBI practices and not on each other's differences and diversity. These findings may also be attributed to the collective group experience of a crisis whilst practicing weekly mindfulness sessions together.

Strengths, limitations and future directions

This study had some major strengths, apart from the innovative method of online delivery using Zoom and finding significant results, even with a brief time period of just four hours. The mixed methods design provided a more comprehensive understanding of the underlying factors contributing to the changes in participants' stress and burnout scores. By using IPA, we were able to explore their experiences pertaining to the process of imbuing mindfulness and obtain rich descriptions of these experiences. However, as is with all qualitative research, as valuable as it is in retaining context and understanding complexity, generalisability can be a challenge [35]. This was taken into consideration by adding the quantitative component. This number was not large enough and thus lacked the power to find significant correlations between factors such as the ability to be mindful in relation age, years of experience, vocation and so on, thus separate studies with larger numbers investigating these are recommended. Although one can also infer from this study the possibility that mindfulness transcends these factors and is applicable to everyone, therefore strengthening the argument that it should be considered for inclusion in the medical training programme.

Dropout rates, also known as experimental attrition, are a common challenge in intervention studies, with numbers that have been known to fall between 15-20% [36]. We had a dropout rate of 28%. This was possibly due to the erratic work schedule, long hours and stressful time that the HCPs were experiencing during the COVID-19 pandemic. We did offer two classes a week of individual make-up sessions, but were still unable to accommodate everyone's schedules. Organisational

support and incentives to attend would be highly beneficial to improve attendance and subsequently self-care in HCPs.

Conclusions and recommendations

The implications of the study point towards the feasibility and effectiveness of using MBIs as part of employee wellness programmes. This study recommends that MBIs be incorporated into HCP training to create opportunities for students to imbue mindfulness into their clinical training, thereby encouraging a positive focus on mental health and wellbeing [34], and more especially as training for possible future medical crises.

As the pressures and demands placed upon our HCPs continue to mount, the interest in the applications of MBIs for this population is timely and can be seen as life-saving. Research suggests that mindfulness training can serve as a practical tool for the promotion of self-care, wellbeing and increased competency, especially during times of intense stress. This study skilfully elucidates how one can apply a cost-effective system of psychological management to an under-resourced and overburdened public health system with proven effectiveness and with minimal resources and cost, therefore making it more likely to be adopted by health care systems. In essence, the outcome should be professionals who are more resilient and emotionally higher functioning, and this may result in improved service delivery as well as improved retention rates within the sector. This study critically demonstrated the feasibility of implementing a brief online MBI and its significant impact on burnout and stress in a worldwide crisis situation.

Abbreviations

MBI: Mindfulness-based intervention

IPA: Interpretative phenomenological analysis

HCP: Health care professional

MAAS: Mindful Awareness Attention Scale

PSS: Perceived Stress Scale

aMBI: Abbreviated Maslach Burnout Inventory

IQR: Interquartile range

PPE: Personal protective equipment

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

IO was responsible for facilitating the intervention, study design, data collection, analysis, interpretation of data, and drafting and critically revising the manuscript. VSS was responsible for conception, study design, analysis, manuscript reviews and supervising the project. SH analysed and interpreted the qualitative data and contributed to the development of the manuscript. All authors read and approved the final manuscript.

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Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the Humanities and Social Science Research Ethics Committee (HSSREC/00000848/2019) of the University of KwaZulu-Natal (UKZN) and the KZN Department of Health. Informed consent was obtained from all participants prior to participation in the study .

Consent for publication

Informed consent for publication was obtained in the consent form prior to the intervention when the use of data being collected was explained.

Availability of data and materials

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

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Figures

Figure 1

IPA themes and subthemes

Figure 2

MAAS 1 pre-intervention levels and MAAS 2 post-intervention levels

Figure 3

PSS 1 pre-intervention levels and PSS 2 post-intervention levels

EE 1

EE 2

Figure 4

EE 1 pre-intervention scores and EE 2 post-intervention scores