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Insights into the effects of the Covid-19 pandemic on postgraduate students at a university of technology

Abstract

The objective of this study was to ascertain the impact and effects of Covid-19 on postgraduate students at a university of technology. A qualitative exploratory research approach was used to guide the study, and semi-structured, in-depth interviews were conducted with postgraduate students (N=10) from the Faculty of Health Sciences. Analysis of the study results indicated that postgraduate students encountered numerous challenges and issues that affected their mental health negatively and hindered their holistic academic experience. Findings of the study suggest that the institution should implement concerted efforts to assist students with psychological, social, and financial support that would reduce the adversity experienced through the Covid-19 pandemic.

Keywords: *challenges; Covid-19; postgraduate students; university*

1. Introduction

The closure of higher education institutions due to the Covid-19 pandemic resulted in an unprecedented impact on the academic survival and well-being of students. Education was disrupted at both the undergraduate and postgraduate levels, with far-reaching consequences in terms of student success (Mostafa, 2020). Covid-19 also silently began to serve as a significant threat to the mental health of university students (Khan *et al.*, 2020; Chen & Lucock, 2022; Pasram, 2022) as it placed an increased burden on their emotional well-being. This was due to the loss of loved ones and financial constraints within families because of job losses (Pfefferbaum & North, 2020). Gogoi *et al.* (2022) rightfully point out that Covid-19 affected students in a myriad of ways, ranging from financial, academic, social, and health aspects.

Most universities began to postpone or cancel campus activities to limit the spread of the virus (Pasram, 2022), thereby resulting in a rapid transition to online teaching (Oliveira, 2022). This presented additional challenges for both academics and students (Mahmood, 2021), with particular consequences for students from vulnerable and

disadvantaged communities, who struggled with access to and the use of different digital modes of learning (Jena, 2020). South Africa was no exception, as students from deep rural areas with poor connectivity bore the brunt of the rapid changes sweeping across the higher education landscape (Govender, Reddy & Bhagwan, 2021).

It is within this milieu that studies pertaining to virtual teaching and learning at higher education institutions (Chung, Subramaniam & Dass, 2020; Lei & So, 2021; Chan, Bista & Allen, 2021), perceptions regarding e-learning (Ana *et al.*, 2020), and the psychological impact of Covid-19 among tertiary students (Batra *et al.*, 2021; Chinna *et al.*, 2021) began to proliferate abroad. In South Africa, several studies have emerged related to the effects of Covid-19 on learning and mental-health well-being (Govender *et al.*, 2021; Onwuegbuzie & Ojo, 2021; Osman & Keevy, 2021; Makhado *et al.*, 2022; Mphahlele *et al.*, 2021; Rwafa-Ponela *et al.*, 2022). However, little exists in the literature on the experiences of postgraduate students (Nasir, Ramli & Som, 2021; King, 2022), particularly in the local context. The confusion, stress, and anxiety that emanated from various aspects of the pandemic would inevitably affect the research progress of many postgraduate research students, warranting a deeper understanding of the problems that this group of students faced. It is against this backdrop that the current study was developed with the intent to understand the challenges that this cohort faced.

2. Literature review

The literature reflects that within the broader pool of studies, the aftereffects of the pandemic on the academic and personal experiences of postgraduate students comparatively have been neglected. In the United Kingdom (UK), the majority of postgraduate students experienced research limitations, or were not allowed to undertake their research studies and were thus compelled to adapt their research schedules and conduct their work from home (BurrIDGE *et al.*, 2020). In fact, the substantial shifts to online academic activities have restructured traditional workplace experiences abroad (Universities UK, 2020). These changes have resulted in greater mental health burdens for students (Besser, Lotem & Zeigler-Hill, 2020; Haikalis *et al.*, 2022), such as burnout and mental disorders (Schuster *et al.*, 2020). Students have been found to report higher levels of anxiety and stress and, whilst a reasonable amount of anxiety was anticipated (Ng *et al.*, 2020), some studies highlight a sharp peak in the prevalence of depressive and anxious symptomatology amongst their peers (Grubic, Badovinac & Johri, 2020; Torales *et al.*, 2020; Wang *et al.*, 2020; Gao *et al.*, 2022).

Prins *et al.* (2007) assert that, in addition to being amongst the most vulnerable healthcare workers even just during normal times, postgraduate students are also prone to a higher prevalence of burnout and psychological morbidity. Imran *et al.* (2021) also note that during the Covid-19 pandemic, postgraduate students in the health sector were the primary workforce and experienced a deluge of Covid-19-infected patients. According to Scott, Health and Lostis (2020), the mobilisation of these postgraduates to high-demand departments increased the possibility that they would contract Covid-19, which was likely to impact their mental and physical well-being adversely. Imran *et al.* (2021) support these arguments and report higher mental anguish amongst postgraduate students during the Covid-19 pandemic in Pakistan, with female students and those working as frontline healthcare practitioners indicating greater levels of depression, anxiety and severe stress symptoms. Senior postgraduate students were also found to exhibit increased symptoms of anxiety and depression, which called for providing postgraduate students with greater psychosocial support.

Numerous tertiary academic challenges arising directly as result of the Covid-19 pandemic and subsequent restrictions led to institutions globally revising their postgraduate submission and deadline policies to reflect this impact on student activity (Byrom, 2020).

The Quality Assurance Agency for Higher Education (QAA) (2020:5) in the UK reports that

many cases involved highly individual and complex combinations of factors such as a lack of study space, the inability to access specialist equipment or conduct field work, underpowered computers (which many providers were able to replace), caring responsibilities, bereavement, financial difficulties, and general uncertainty and isolation exacerbated by the lack of contact with peers.

Furthermore, the proportion of postgraduate students who were concerned about the completion of their studies within the prescribed duration (Advance HE, 2021; Bogosavljevic *et al.*, 2021; Goldstone *et al.*, 2021) more than doubled when compared to a study with postgraduates students at 48 UK universities prior to the pandemic (Bryrom, 2020). These responses to the pandemic were exacerbated by a cascading impact on the students' future plans in both their professional and private lives, with many postgraduate students contemplating not finishing their studies, alluding to issues such as psychological challenges, monetary difficulties, distorted work-life balance and barriers to research completion, among others (King, 2022; Persky *et al.*, 2020).

The combination of these circumstances led to an unprecedented level of stress among postgraduate students for which there were no quick-fix or one-size-fits-all type of solution (QAA, 2020: 5). The QAA (2020: 5) added that “for students undertaking practice-based research and fieldwork the availability of the research context is critical, and whilst it may have been possible for students to mitigate lockdown restrictions by rescheduling their research and doing things differently and in a different order”, this was not a sustainable plan for an indefinite period.

Given the unique circumstances of the pandemic, research scholars were urged to concentrate on manuscript writing, online training, and the writing-up of proposals and grants, as these activities enhance the fundamental requirements of most postgraduate programmes. Other in-silico research methods such as simulation and modelling also had to be used (Persky *et al.*, 2020). Additionally, the pandemic halted the real-time recruitment of patients for clinical trials, although certain activities were implemented remotely, such as virtual interviews for research purposes. Moreover, some students realigned their research endeavours to concentrate on Covid-19.

Certain countries such as the United States gave students special provision, such as laboratory access, to ensure their progress. Moreover, programmes that had not given consideration to in-silico projects were compelled to reconsider the use of such methodologies. In fact, as Persky *et al.* (2020) state, some students were allowed to prepare samples, undertake cell-culture experiments, or other applicable research activities at home. One significant issue, however, was linked with the failure to sustain schedule graduation and unforeseen costs to the primary researcher, the scholar, and the institution.

Clay (2020: 2) thus concludes that pandemics “are not fallow periods, neither are they holidays for researchers but rather times they must get busy with other alternative ways of carrying out their research activities”. Instead, they are critical times for researchers to consider the multiple challenges brought about by the pandemic (Nehls, Smith & Schneider, 2015).

3. Methodology

This study was guided by a qualitative exploratory research design. Stebbins (2001) portrays exploratory research as a varied and purposive initiative intended to maximise the discovery of generalisations resulting in the explanation and awareness of a spectrum of social or psychological life. Hunter, McCallum and Howes (2019) emphasise that qualitative exploratory research enables the researcher to delve into a subject with minimal prior investigation. Moreover, this facilitates enhanced participant interpretation of knowledge within this area.

Non-probability sampling strategies, specifically purposive sampling, were used to recruit students for this study (Vehovar, Toepoel & Steinmetz, 2016). In purposive sampling, selection is based on the judgement of the researcher (Lamm & Lamm, 2019). In this case, 10 postgraduate students from the Faculty of Health Sciences at a university of technology in eThekweni were recruited for this study. These students were registered for either a master's degree in emergency medical care, or for the master's or doctoral degree in health sciences. The participants consisted of seven master's and three doctoral students, two of whom were males and the other eight female students. After receiving ethical clearance for the study, students from the postgraduate cohort who indicated an interest in participating were contacted and an interview time arranged. Semi-structured virtual interviews were used to collect data, given the lockdown regulations at the time of the study. An interview guide was designed and a pilot test with a similar sample conducted prior to the main interviews. Data collection stopped once saturation was reached. The aim was to understand what challenges postgraduate students faced during the Covid-19 pandemic.

Data were recorded electronically and then transcribed verbatim. In order to gain familiarity with the data before transcribing it into text, the researcher listened to the voice-recorded interviews several times (Creswell & Creswell, 2018). Understanding of the data was enhanced through multiple readings of the interview transcripts. Thematic analysis was implemented to make meaning of the data. This consisted of a process wherein transcripts were initially analysed to identify similar concepts and common language, which could then be coded, and these stipulated codes would then be screened to obtain recurring themes or sub-themes (Polit & Beck, 2017). Accordingly, the transcripts were reviewed thoroughly and codes were verified against the primary transcript to ensure validity and consistency of context. Initial codes were formulated by one researcher and further substantiated by a second impartial researcher. The extracted codes were then reviewed to obtain any emergent themes, with the final step being mutual consensus on the final thematic structure. Only Theme 1 had subthemes. No other subthemes for the other themes justifiably emerged or could be reasonably identified upon data analysis.

The idea of trustworthiness aims to ensure that 'research is understood as legitimate' to various platforms that access the study, namely other researchers, practitioners, and the researcher. Through the employment of trustworthiness within the study, research findings are deemed to express the truth as per the experiences of the participants. Accordingly, the concept of trustworthiness is embedded in the criteria of Guba's model, namely credibility, dependability, conformability, and transferability, which were used to uphold the rigour of the study (Gunawan, 2015). The use of member checking and an audit trail were the strategies used to ensure trustworthiness.

4. Results and discussion

Data analysis resulted in four themes, namely the mental health burden on postgraduate students (Theme 1), the effects of the pandemic on data collection (Theme 2), the challenges linked to virtual supervision (Theme 3), and the lack of access to university resources (Theme 4). The first theme is discussed in the sub-section that follows.

4.1 Theme 1: Mental health burden on postgraduate students

Theme 1 related to the mental health burden postgraduate students faced during the pandemic and its consequent effect on their postgraduate studies. Three sub-themes emerged under this theme, namely *the loss of a loved one*; *loneliness and anxiety*; and *the effects of personal infection with Covid-19*. These sub-themes are discussed below.

4.1.1 Sub-theme 1: Loss of loved ones during the pandemic

My mom's brother was the first person who was infected with COVID and within a short space of time, he went from having low oxygen levels to being on a ventilator in terms of my emotional state ... it really broke me. He was the person who motivated me to my master's, even proofread my concept paper. I think every time I sit to want to work with it now, I'm just reminded of how this person helped me start my research and now this person is not going to see it through the end. I am broken ... it is really hard to process ... I am struggling to concentrate because I don't think you're ever prepared for these kinds of things (P4).

My aunt passed away. She had contracted COVID coming back from London, she had asthma, so she did have comorbidities ... it was quite traumatic ... I felt very isolated. Didn't have anyone to really turn to or to talk to ... I couldn't process it. My research is actually on HIV because I had chosen it in 2019 when my aunt was still alive. We chose it together, because she worked with a research council. It is an in vitro study. I was meant to do the actual experiment in March of 2020, and then everything obviously happened with COVID, and we couldn't do it (P6).

The Covid-19 pandemic resulted in several families facing a sustained, comprehensive sense of loss with the tragic deaths and threatened loss of loved ones, which left countless individuals with an increased feeling of sadness and despair (Walsh, 2020). Anxiety and depression are common psychological reactions in people who have either contracted the virus or have lost loved ones to it (Bao *et al.*, 2020; Rwafa-Ponela, 2022). For the postgraduate students in this sample, however, this grief was heightened, as both students who lost loved ones were motivated by these family members to pursue their postgraduate studies. One student who lost her uncle expressed that his death had a major effect on her studies, because he was the one who had helped her to formulate her concept paper. As she said, the grief affected her ability to focus on her research. This complicated grief inevitably left the student 'broken' and unable to focus on her work. Feelings of disbelief, denial, and a lack of acceptance and coming to terms with the loss were common during the Covid-19 pandemic, particularly because the death of many were both unexpected and sudden (Hernández-Fernández & Meneses-Falcón, 2021). The other student reflected on her trauma and isolation, as her aunt who was also a senior researcher, had helped her to develop her research topic. The lack of having 'anyone to talk to' during their postgraduate studies is reflective of the even heavier burden that most postgraduate students faced while trying to complete their research and simultaneously deal with unexpected losses during the pandemic.

4.1.2 Sub-theme 2: Anxiety and loneliness

In addition to the impact of loss and death on postgraduate students, they also bore the brunt of the isolation, loneliness and personal fears related to the pandemic. They expressed the following in this regard:

I have anxiety to leave the house. I love to be around my friends, even just doing things by myself, but going out of the house, I used to go to the beach like and now, I just can't; I have like this extreme fear that, that I'm going to like get COVID somewhere or the other, even going to the malls, going to do grocery shopping. It's an irrational fear (P6).

I would say that I feel disconnected from the world, and it did get a bit lonely ... it has a psychological effect ... it was a very difficult period mentally because there's nothing to do, nowhere to go. We just had to stay home, so that was very difficult (P1).

Evidence gathered abroad has also documented the adverse situations students encountered amidst the pandemic, particularly a multitude of mental health and monetary problems, academic and professional issues, and loss of societal interaction (Johnson, Rauhaus & Webb-Farley, 2020; King, 2022). Research indicates how the pandemic has not only disrupted students' studies, but their personal lives and financial well-being. As Muddiman, Campbell and Krause (2021) affirm, under the tenuous conditions the majority of postgraduate students experience during tertiary studies, along with the propensity of society to experience mental health difficulties, the sentiment persists that prior issues linked to mental health, status uncertainty and unjust treatment in higher education may have been exacerbated during the pandemic. King (2022) adds that early-career researchers, such as doctoral students, often experience poorer mental health, as they face higher levels of anxiety and depression. Moreover, they experience pressure to secure funding, publish, and remain productive, which were challenged further by the uncertainty and stressors of the pandemic.

4.1.3 Sub-theme 3: Personal infection with Covid-19

One of the other mental health burdens that emerged in the data related to students' personal infection with Covid-19. A few students described how the virus had affected their ability to read, write, and focus due to breathing difficulties and feelings of exhaustion. They said:

I think due to COVID and then the loss of my sister, and I think the [research] workload added more to that. So yes, I would concentrate, and then I would feel exhausted and breathless (P8).

It was the hardest time to be doing research; I became so ill, and this continued for a few months where I could not do my data collection, read, or write (P10).

I had to isolate from my family after I took ill, and this was very scary. I was so afraid I would die. It affected me even after my one month of being diagnosed, I think the inability to focus, I couldn't concentrate for a very lengthy period on my research as my lungs were affected (P9).

Research undertaken prior to the pandemic on the postgraduate research experience documented that doctoral students usually disclose higher feelings of stress and mental health concerns, together with other physiological problems, due to the stress of this level of study (Sverdlik *et al.*, 2018; Van Der Heijde, Douwes & Vonk, 2019). This is substantiated by growing evidence which supports the detrimental impact the pandemic had on mental health, which stems from the impact of being infected and the associated isolation measures,

which create further anxiety, social isolation, and loneliness (Pierce *et al.* 2020; Wright, Steptoe & Fancourt, 2021), as evidenced in the current sample. Students reported a lack of concentration, exhaustion, and difficulties with breathing, physical symptoms that are well documented in the literature (Peluso *et al.*, 2021).

4.2 Theme 2: The effects of the pandemic on data collection

The second theme that emerged related to the impact of the pandemic on postgraduate students who were in the midst of data collection. They had the following to say:

The pandemic itself affected the data collection and the inability to access the patients for data collection (P4).

With my research, it did affect me. I couldn't cope with all that was happening around me because by now I should have gone into the field. So, this is now six months, and I should have completed all my data collection. I should have completed all my interviews by now and I haven't because I just couldn't pick up the research and work on it. So it delayed me and I had my aim to complete everything by September (P2).

This year was sort of different because my data collection started and this meant going to the hospital and people were afraid to come into hospitals, which meant that my data collection got really slowed down. There was a delay in my data collection (P4).

As evidenced above, one student could not go into the field to conduct interviews because of lockdown regulations, which consequently affected the timely completion of data collection. Another indicated that her data collection was affected because it was to be conducted in the hospital context. The rising numbers of Covid-19 patients resulted in a lesser number of hospital visits, as people requiring medical attention were afraid to contract the virus. Iyengar *et al.* (2020) also report that because hospitals were converted into Covid-19 facilities, non-infected patients were often turned away because of insufficient capacity, which consequently affected standard clinical work and disrupted research around such patients. Hence, clinical research activities allocated to postgraduate students were either impossible to achieve or severely compromised.

Nasir *et al.* (2021) conducted a study incorporating convenience and purposive sampling methods among 606 Malaysian postgraduate students. The findings indicate that the majority of postgraduate students experienced challenges with data collection and analysis in this period, most likely due to the Malaysian government's restrictions on public movement, as part of attempts to reduce Covid-19 infection. Data collection was hindered for months, which therefore resulted in deferment of the completion of studies. Demers *et al.* (2020) found that established data collection procedures for research, such as the distribution of questionnaires and conducting face-to-face interviews, were not able to be implemented due to Covid-19 preventive initiatives, such as social distancing and government lockdowns.

One student shared how her laboratory-based research work was jeopardised for several reasons during the pandemic. As reflected below, she said that, not only did the laboratories become extremely busy due to Covid-19-related tests and research, but the lockdown regulations also made it difficult to complete her experiment. She explained:

My research is actually on HIV ... it is an in vitro study and I had started, actually, I was meant to do the actual experiment in March of 2020, and then everything obviously happened was Covid ... I felt like doing a lab experiment, doing a lab study was not the

best choice, I didn't know that Covid was going [to] happen and the labs just got busy. They didn't have any space for us. Lab studies, all of our research has been pushed back. So much is being delayed, numerous times with Covid and with the lockdowns and all the restrictions. So, it's been quite hectic (P6).

Other researchers similarly report that scientific laboratory testing and research work could not be undertaken (Jena, 2020; Goldstone & Zhang, 2021). Similar to the participant in the current study, Vasiliadou (2020) expresses that many students completing laboratory research were concerned about their studies, as utilising academic resources on campus was vital to mitigate any impairment to their studies. Persky *et al.* (2020) further explain that during the pandemic, the bulk of “benchtop” and “wet-lab” research was immediately suspended and postgraduate students had to transition rapidly to divergent objectives that were most permissible and feasible under Covid-19 restrictions. They added that the dynamic conscription of patients into clinical trials was also postponed, but certain protocols such as electronic consent and virtual appointments for interviews continued to be conducted remotely. Persky *et al.* (2020) note that these new circumstances resulted in the delay of completion of select requirements, such as the completion of dissertations and theses for postgraduate students.

Another doctoral student shared her fears and anxieties around data collection at higher education institutions as follows:

Higher education institutions were totally shut down. They are still shut down. The colleges have not opened yet ... I was faced with deadlines around me, and that was the period when I was having the most difficulty trying to sample universities. I was also trying to contact a few people, but I knew at the time the universities were anyways closed (P7).

The inability of postgraduate students to conduct research due to lockdown regulations is mirrored in the literature as well. As Goldstone and Zhang (2021) affirm, many students were faced with being unable to complete their research altogether, or were obligated to amend their research aims and perform their research activities from home. Hence, as evidenced in the data, the pandemic highlighted the precarious position that postgraduate students faced, as their data collection was either paused or adjusted; scheduled interviews could not be conducted; and laboratories were closed. In fact, it left many students with having to rethink their research designs and the chosen themes they planned to study (Goldstone, Zhang & Christodoulides, 2021)

4.3 Theme 3: Challenges linked to virtual supervision

The third theme that emerged related to the challenges postgraduate students encountered with virtual supervision. One student lamented the loss of personal contact, saying:

Contact is very important in research because the student can get lost with not having that personal contact with their research supervisor (P2).

Postgraduate students, as previously stated, experienced numerous difficulties in different areas of their lives. These include learning and research experience, residential situations, feelings of professional accomplishment, social and supervisory support, and growth prospects (Burrige *et al.*, 2020; Byrom, 2020; Goldstone, 2020; Lambrechts & Smith, 2020). Various levels of the research process (e.g. literature review; data collection), also proved problematic for students, together with a decrease in institutional and supervisory support, which is reinforced in other studies (Byrom, 2020). Furthermore, the requirement for solid supervisory personal contact became even more vital.

According to Sverdlik *et al.* (2018), supervision preparations (e.g. the student-supervisor 'fit') and internal departmental socialisation strongly shape doctoral student experiences.

Similarly, others who reflected on virtual research mentoring workshops held by the supervisor, commented:

I prefer meetings that are in person meetings, like how we had our first workshop, that was so much help, like more helpful compared to our virtual meetings. You have the teacher in front of you and whatever you need to understand or learn is explained so thoroughly. And if you have any questions, everybody is right there, you can ask, and I feel sometimes when we're on virtual meetings there's no sense of personal contact" (P4).

We had these virtual workshops because you weren't able to meet face-to-face. When we met face-to-face, we were able to sit to talk. But with the virtual, it takes some getting used to (P2).

In addition to the challenges linked with virtual mentoring and supervision, another student expressed the loss of "peer support" during their research studies. She reflected on a joint virtual research workshop with both master's and doctoral students, saying that a research support group for those doing their master's would help, as they did not have any postgraduate experience, compared to doctoral students. Similarly, Brown, Archer and Finn (2020) assert that a lack of face-to-face contact from a supportive network of supervisors and peers holds the potential to detrimentally affect the health of postgraduate students.

Another student shared:

It's really nice when you get to socialise and interact with people who are on the same research journey as you and we are all at the master's levels. So nobody has been through any kind of research on this level before, whereas with PhD student, they have that experience of doing their master's degree. It would've helped to have a class because if you had to compare this to our degree, we had friends and we were seeing each other almost every day. Now not everybody who was in our first workshop is currently in our master's class. There's a whole lot of new people. And it would've been nice to associate with them physically if everybody had that chance to meet and be together (P6).

Hence, as seen in the aforementioned excerpt, virtual cohort supervision and mentoring deprived postgraduate students of the opportunity to interact with those jointly pursuing a master's degree. Moreover, most students did not find supervision or a workshop conducted on an online platform to be a conducive learning environment. In a similar vein, Persky *et al.* (2020) report that subsequent to the Covid-19 pandemic, postgraduate tasks were relocated to virtual platforms from in-person contact, which consequently affected learning. As Jena (2020) states, the loss of face-to-face teaching and the loss of in-person interaction of postgraduate students have resulted in students losing confidence and independence. These changes challenged both postgraduate students and academics, because as Kaur *et al.* (2021) mention, participant-centric group discussions in a postgraduate context, where there is face-to-face interaction, contributes significantly to active learner engagement. To this end, studies note that the pandemic has affected students, as they have become socially more isolated from fellow peers, which is an important research resource (Muddiman *et al.*, 2021).

Other students raised issues of connectivity which impacted on supervision as follows:

I struggled with connectivity issues during virtual supervision, and I could hardly hear my supervisor. This made it difficult to receive the help I needed (P5).

Students residing in rural and remote areas may face poor internet connectivity (Kapasias *et al.*, 2020). The chances for students to finalise research projects, display research results, and obtain valuable reactions to their study methodology before completion of their postgraduate programme are critical for their success (Persky *et al.*, 2020). An integrated aspect of all postgraduate training programmes is that of mentoring. Mentors, co-investigators, and supervisors should liaise often with students during the pandemic crisis. Weekly, if not more frequent communication is crucial to ensure that students have unrestricted access to express their questions and misgivings (Persky *et al.*, 2020). Mentors and supervisors should also escalate the regularity of coordinated group interactions with student cohorts to provide added support. Unfiltered feedback in whatever form may also help create awareness of students' true struggles with isolation. Creating a variety of virtual social events (happy hours, group book clubs) can allow students to remain connected to those closest to them and others in the community with similar interests (Persky *et al.*, 2020).

4.4 Theme 4: Lack of access to university resources

The fourth theme that emerged from the data was the lack of access to the university and its resources during the pandemic. The students remarked the following:

I think for students who obviously cannot access the library. It becomes problematic for those who are accustomed to that kind of face-to-face contact supervision and being able to access other research students as well (P3).

It was very challenging because I was used to going to the library and borrow books from them. I wasn't actually familiar with the journals. So I had to now transition from me seeing that book and actually having to download a book (P9).

I really felt like the biggest thing was being unable to go to the labs, because once lockdown started, we could not go to campus, and do our lab work (P8).

Workshops and conferences were cancelled ... there was so much I could learn from this (P4).

Covid-19 compelled the closure of universities, which resulted in the cessation of educational activities and created multiple challenges for postgraduate students (Jena, 2020). Some of the challenges included students being unable to access the institutional library and laboratories; face-to-face consultation with supervisors being hindered; and access to field work being obstructed (Bashar, Inda & Maiwada 2020; King, 2022). Moreover, social distancing measures and the consequent move to remote teaching and research adjusted accepted working methods, which resulted in substantial psychological burdens (Besser *et al.*, 2020; Hayes, 2020). Further traditional institutional activities such as workshops, academic conferences, and academic networking (Besser *et al.*, 2020; Hayes, 2020), all of which are significant resources on the research journey, were also hampered.

5. Conclusion

This study found that postgraduate students experienced multiple negative outcomes which impacted their mental health and research experience, including their capacity to progress and receive social and supervisory support and other academic development opportunities. It found that as students transitioned simultaneously through both the pandemic and their

research journey, many had negative experiences within their research study related to being unable to complete their literature reviews or complete their data collection. This was compounded by difficulties with the lack of supervisory and peer support.

The challenges noted in relation to postgraduate research demonstrated how the Covid-19 pandemic has affected and will continue to influence these cohorts of students, all of which requires that universities become innovative in finding solutions to the problems students have encountered. The fact that postgraduate student researchers have been shown to display greater incidents of mental ill health than the rest of society (Persky *et al.*, 2020) requires that universities consider how they may provide greater psychological support to this group.

This requires well-developed guidelines related to supervision and support for academic continuity, both during and post an outbreak. The findings suggest that it is important to remain connected with postgraduate students to be aware of their performance during lockdown periods. It is perhaps at this time that the university must devote greater time to ensuring that these students receive psychological services, as well as social and financial support to mitigate the effects of personal losses, infection, loneliness, anxiety, and fears emanating from Covid-19 to ensure their academic success. Nasir *et al.* (2021) suggest that universities launch an intervention using a digital platform, for instance, a chat box, which can connect them with the students at any time. This will allow students to pose any questions regarding their situation or highlight any problems they are confronted with. In this way, the disconnect between universities and students can be bridged, despite the physical isolation from campus. An online postgraduate community of practice can work towards increasing morale through this type of support. Improved virtual support can enhance communication between peer collaborators and fellow students. The establishment of these online communities of practice can continue, especially for students who cannot access a physical community of practice, post the pandemic. Such online communities of practice can increase feelings of collegiality, particularly for those who had been previously marginalised through a lack of physical presence (Brown *et al.*, 2020).

The findings of this study offer useful suggestions for universities to minimise the negative impact of external influences or crises. These include: 1) Schedule regular counselling sessions for postgraduate students to discuss their psychological challenges, both physical and virtual, on regulated platforms i.e. not social media; 2) Create alumni or postgraduate organisations/bodies that students can join or be part of to feel a sense of camaraderie and minimise disconnectedness; and 3) Universities should develop strategies to regularly inform students regarding access to funding in the form of scholarships, grants and bursaries that students may not be aware of.

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