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The Mental Health of UK Postgraduate Research Students following the COVID-19 Pandemic

Amy Zile [1,*], Bryony Porter [1,2], Kenda Crozier [1] and Kristy Sanderson [1]

1   School of Health Sciences, University of East Anglia, Norwich NR4 7TJ, UK
2   Applied Research Collaboration (ARC) East of England, National Institute for Health and Care Research (NIHR), Cambridge CB2 8AH, UK
*   Correspondence: a.zile@uea.ac.uk

Abstract: The mental health of postgraduate research students (PGRs) is a growing area of interest to Higher Education Institutions (HEIs) and researchers and has important implications for PGR wellbeing, success, and attrition. This study aimed to explore PGR experiences of mental health during the pandemic, the supervisory relationship, and seeking support. Semi-structured interviews were conducted with 20 PGRs from across the UK. Questions invited PGRs to share their experience of supervision, the impact of supervision on their mental health, and any experience of discussing mental health with their supervisor(s). The experiences of supervision varied, as did the university responses to the pandemic and levels of supervisory support. A number of PGRs felt that their supervision experiences had negatively impacted their wellbeing and reported stigma and discriminatory practices. Themes identified included discourses, supervisory knowledge, university resources, and the research culture as key factors that impacted the mental health of PGRs. Supervisors often upheld perceptions of PhD life as being isolating, with negative impacts on wellbeing to be expected, setting expectations of overworking, anxiety, and stress. The move from pandemic to post-pandemic life posed both challenges and benefits. Issues of training on mental health awareness, university processes, and accessibility of services should be considered by HEIs.

Keywords: postgraduate research student; PhD student; doctoral student; student mental health; researcher mental health; doctoral study

1. Introduction

The mental health of postgraduate research students (PGRs) is a growing area of interest to HE institutions and researchers, with sector-wide concerns that PGRs are struggling with their mental health at higher rates than other student groups and may be at a higher risk of suicide [1,2]. Burdening factors on PGR mental health have previously been identified by PGRs at the University of Helsinki, such as poor support for learning and research, a lack of meaningfulness, and the complexity of community situations [3]. The scholarly community could either be 'empowering' or 'burdening', and this had a significant impact on PGR wellbeing; when students experienced the community as empowering, they experienced less stress, anxiety, and exhaustion [3]. It has been found that the mental and physical health of PGRs tends to drop across their doctoral journey, with less sleep, poorer diets, and increased stress [4]. For HEIs to try to minimise potential negative impacts of doctoral study on PGR physical and mental health, it must be a priority, and PGRs must be included in university-wide mental health considerations and interventions.

As explored above, PGR mental health is already of some concern to the sector, with anxiety and depression viewed by some as 'common' struggles [1,5,6]. The anxiety rates in the over 15,000 graduate students in the Student Experience in the Research University consortium were higher than undergraduates, with 43% of doctoral and 39% of undergraduate students screening positive for possible generalised anxiety disorder

using the GAD-2 [7]. The pandemic has also had impacts on postgraduate students' mental health, with findings indicating that the number of graduate students experiencing major depressive disorder was two times higher in 2020 compared with 2019, and anxiety was 1.5 times higher [8]. This is also supported by the findings that graduate students' levels of major depressive disorder were more prevalent among low-income, working-class, and poor graduate students, those with caring responsibilities, and those from minority backgrounds, mirroring the groups that are noted to be at higher risk of developing COVID-19 [9]. PGRs who had pre-existing mental health conditions reported that the pandemic had disrupted the management of their mental health, with this disruption being significantly associated with higher levels of depression, stress, and anxiety [10].

The impact of the supervisory relationship has become increasingly important since the COVID-19 pandemic hit the UK. Isolation has been previously noted as a contributory factor to PGR mental health difficulties [11,12], and it appears that lockdown has compounded these issues. The Student Mental Health Research Network (SMaRteN) and Vitae conducted research from March to May 2020 with over 4800 PGR or ECR respondents; three quarters reported a negative impact on research progress and interaction opportunities with colleagues [13]. PGRs reported substantially more negative impacts on their research activity than research staff, and both groups reported low levels of wellbeing, with over three quarters of respondents' mental wellbeing declining since the lockdown began [13,14]. A potential buffer to the effects of lockdown was university and supervisory support, with mental wellbeing levels higher among those PGRs who felt well supported by their supervisors. For many PGRs, over the lockdown periods, their supervisory team was a primary source of contact. Thus, it is imperative that PGRs and supervisors feel comfortable discussing mental health, both due to the strains that COVID-19 has placed on all of our mental health (especially for PGRs with pre-existing mental health challenges), and to continue the pre-lockdown work to improve the landscape of PGR mental health.

This study aimed to explore the experiences of PGRs who studied during the pandemic and after the UK lockdowns.

2. Materials and Methods

A series of semi-structured qualitative interviews were undertaken with PGR students from across the UK. Any current PGR students studying at a UK HEI were eligible to participate in the interviews. Students with and without experience of mental health challenges were eligible to participate, and there were no restrictions placed on participation based upon mental health or disability identification. The opportunity to participate in the study was advertised using social media (Twitter) and relevant research networks (The Student Mental Health Research Network, the McPin Foundation).

Twenty PGR students from a range of subject backgrounds and with a range of demographic characteristics took part in the interviews, as depicted in Table 1 below. The interviews ranged between 40 and 110 min. Data were collected from a series of audio-recorded semi-structured interviews. Interviews took place over Microsoft Teams (utilising the built-in recording software for audio recording), and a Dictaphone recording was used as a back-up.

Broad topics for discussion were identified from a systematic review evidence map of student disclosures of mental health and a quantitative study examining student disclosure experiences. The interview schedule focused on exploring a series of topics: participant background and motivations for PhD, experiences of support and peer support, research culture, mental health and wellbeing, and the supervisory relationship.

The transcribed data were analysed using thematic analysis, identifying codes and patterns in the data that were relevant to the research question and repeating this process iteratively to ensure trustworthy analysis. Once the transcripts were coded, revisited, and the researcher was satisfied that their coding accurately represented the data, the codes began to be grouped into preliminary themes. This allowed multiple codes and topics to be grouped together and expose the broader constructions drawn upon during the interviews

to the researcher. This process was, again, iterative and repeated to ensure that themes were not too broad, too narrow, or did not accurately capture the data.

This study received ethical approval from the University Ethical Review Board (ETH2122-1004). Pseudonyms are used to protect participants' anonymity.

Table 1. Participant demographics.

Study Characteristic	N = 20
Year of study	
1st	6
2nd	4
3rd	4
4th+	6
Student status	
Home	10
EU	3
Non-EU International	7
First-generation	
Yes	10
No	9
Unsure	1
Mode of Study	
Full Time	14
Part Time	6
Subject area	
STEM	6
Medicine and Allied	1
Social Sciences	5
Art and Humanities	2
Education	2
Law and Business	1
Combination	3
Funding Source	
Student Loan	3
Research Council	7
Non-UK Government	2
Other	8
Gender	
Male	8
Female	9
Non-Binary	3
Ethnicity/Race	
White British/English	8
White (non-specified)	4
White Non-British	2
Black British	2
British Asian	1
Asian	1
Indian	1
Mixed	1
Sexuality	
Heterosexual	12
Gay	4
Bisexual	2
Queer	1
Asexual	1

Table 1. *Cont.*

Study Characteristic	N = 20
Identified as disabled	
No	7
Unsure	5
Yes	8
Declared on application?	6
Mental health challenge	
No	3
Yes	15
Unsure	2
Caring responsibilities	
No	17
Yes	2
Unsure	1

3. Results

Six main themes were identified:

1. Discourses on mental health: the ideas that the university and other PGRs propagated and how PGR expectations clashed with their experiences;
2. PhD and emotions: the emotional impact of doing a PhD and the emotional impact from doing a PhD;
3. Support provisions: experiences and impact of support provisions, knowledge, and barriers;
4. PGR identities: the range of identities that PGRs are balancing and how they affect their mental health;
5. Supervision and supervisors: the impact of supervision and supervisors;
6. Environment and processes: the environment that PGRs exist in and how university processes affect them

3.1. Theme 1: Discourses on Mental Health

One of the themes from these data was the discourses that exist around mental health and how they affected what PGRs expected of the PhD, the university, and their mental health. A distinction was drawn between discourses and ideas perpetuated by the university as an institution, those from other PGRs, and those relating to mental health and conflation with wellbeing (although those relating to mental health were also upheld by universities and peers).

3.1.1. The Wellbeing Umbrella

PGRs felt that their university pushed a discourse of conflating mental health with mental wellbeing

> *"There's less in the way of actual mental health advice geared towards people who have mental health difficulties or like mental illnesses, and not just kind of issues with their wellbeing"*—Kevin

University-provided interventions for mental health were felt to focus on stress and wellbeing, rather than mental health, and participants felt that PGRs with mental illness or a mental health condition were ignored by universities. PGRs were generally quite cynical about the discourses that the universities engaged in regarding mental health, with comments relating to being 'tick box exercises' or paying 'lip-service' to mental health when they are focusing on wellbeing (or not focusing on either):

> *"I think they're all too quick to fly the flag publicly and say, you know, we, we look after our students and all this, but I think if they were honest with themselves. . .and actually reviewed what they've done. . . I'm not convinced they care."*—Will

There was a disconnect between what PGRs expected—open, inclusive discussions of mental health and discourses acknowledging mental illness and severe mental health challenges—and the reality of 'low impact' interventions, conceptualising all mental health as stress or wellbeing, and some PGRs felt that their universities were disingenuous and dishonest in their discussions of mental health.

> *"I get very frustrated personally, when... I see the university, kind of like patting themselves on the back for how great they've, they've, you know all the great stuff they've been doing when it's actually not—it doesn't take into account people with disabilities it doesn't take into account people with mental health issues and or international researchers"*—Cat

3.1.2. Problematic Discourses from Other PGRs

Participants also observed and commented upon prevalent discourses they observed from other PGRs. These were, on the whole, negative, and most participants spoke of hearing 'horror stories' of the PhD, having ideas of overworking and the expectation of mental health concerns normalised and presented as a natural part of the PhD process. For participants with existing concerns around their mental health, this was troubling:

> *"It scares me. Everything everyone talks about on Twitter like it's—like I don't want to be unwell again and I know how bad it gets and I can't go there. . ."*—Niamh

PGRs felt that other PGRs both online and at their institution generally felt that doing a PhD was difficult, and that problems with mental health were normal and to be expected. This led to feelings of isolation and self-deprecation when they did experience difficulties. These collective mindsets were viewed as continuing to perpetuate the idea that a PhD is 'supposed' to be difficult and affect your mental health, which was acknowledged as both problematic, but experientially correct:

> *"The messages that I was getting from people is that this is a very intense hard process which I think it's good to be kind of explicit about that is challenging but I think the risk is there creates this expectation that kind of like to be doing it well, you've got to be kind of really unhappy and worn out all the time"*—Scott

This meant that a number of PGRs felt unable to distinguish between the normalised distress of doing a PhD and when they were really struggling. A common thread in discourses from other PGRs was the use of jokes, sarcasm, and satire to describe their experiences to peers, further complicating the ability to identify when one might be at risk or really need support. There is discussion to be had about what the longer-term effects on issues such as burnout these types of attitudes and beliefs can have on people who are (largely) just beginning their careers in academia.

The discourses from other PGRs also naturally involved supervision and supervisory practices, leading to the downplaying of seriously concerning behaviours:

> *"[after reporting discrimination from supervisor] And my situation is not even like the worst. I feel like my situation is like super mild compared to like how bad it could be like. . . I feel like for my situation I'm not at like best case scenario, but I'm like just below best case scenario because it could be so much worse"*—Cat

Whilst peer support was noted as a very beneficial source of support for PGRs, it is important to note (as a number of participants did) that non-formalised peer support with no oversight or training can lead to perpetuating detrimental ideas about what a PhD is supposed to be like and what PGRs should expect from their supervisors and could arguably allow bad practices to continue without acknowledgement or correction.

3.1.3. Discourses on Mental Health

There was a distinction made between mental health and mental wellbeing on the one side and mental health and mental illness on the other. Some participants felt that the terms were used interchangeably and inappropriately. Participants felt that this distinction

was upheld by both universities and wider society and affected the provision of support, interventions, and how seriously mental health was taken:

> *"They're like 'PhD's are hard, they're stressful, don't burn out take care of yourself'. But then it's like the people that are, like, legitimately, like, mentally ill and struggling, we're like, we're more than stressed. I mean, so it's like they're like 'we recognize it's a hard time'. It's like, yeah, but like, do you recognize like, yes, it's a hard time for everyone and everyone deserves that support, but then there are people where it's like a bath won't solve the issue"*—Max

There were significant discussions around mental health support and the discourses that exist around that at universities and outside. Participants universally agreed that services (both university- and NHS-funded) are overwhelmed, under-resourced, and potentially ineffective.

> *"And I'm just like, you know, mentally ill enough for it to be taking taken seriously, but like stable enough to like not be treated apparently"*—Connor

Wait lists were a common thread of discussion, and a number of PGRs said this put them off seeking support, despite not knowing what the waiting lists at their specific institutions were. There was a prevailing idea that university services are so oversubscribed that presenting to them was fruitless, and thus, they did not bother seeking support. The PGRs in this sample also seemed acutely aware of the risks to mental health of doing a PhD, with over half referencing the fact that 'literature', 'evidence', and 'knowledge' shows that their mental health is more at risk, unstable, and of concern than the mental health of undergraduate students. Whilst they are not incorrect in this assertion, it is unclear if they were aware of the limitations of some of this evidence, where they obtained this knowledge from, and how it may continue to contribute to the idea that they should be struggling mentally, and that it is normal to experience clinical levels of distress.

> *"It's so almost normalized that at some point you're gonna have a tough time mentally. And everyone's like, oh yeah, ok, you're having a tough time. . . that's like it's almost like a check box and yeah, and that's, definitely comes in with part of the whole experience"*—Jen

Within the discourses surrounding mental health, whilst the PGRs were frustrated at their institutions for conflating mental health and wellbeing, there was some conflation of, and potential misuse of, terminology such as burnout and imposter syndrome. A few PGRs spoke of experiencing burnout and stress interchangeably, and those who reported burnout and imposter syndrome did not provide definitions for these phenomena. Whilst it is acknowledged that these phenomena exist within academia, it is unclear how the participants conceptualised these terms and from where they based their definitions.

3.2. Theme 2: PhD and Emotions

Participants varied in terms of how their PhD had affected them emotionally (or impacted their mental health); some felt that the emotional impact of doing the PhD itself was challenging, while other participants felt the impact of a distressing PhD topic, and some experienced both. It is important to note that the emotional impact from research topics, or the PhD itself, was not a straight or linear thing; it fluctuated over time, depending on where they were in their research and the support they were getting.

3.2.1. PhD-Related Distress

Participants reported significant emotional impacts of doing a PhD, with burnout being commonly discussed as a key impact:

> *"I remember feeling a little bit like there was a bit of a competition about who was working the hardest or doing the most or kind of um. . . and that you know, people would would kind of talk about like being really worn out or burnt out as if it was kind of like a badge of honor that they were doing their PhD right kind of thing"*—Scott

As noted in Discourses on Mental Health, participants' definitions of phenomena like burnout may not be in reference to clinical levels of distress or long-term stress. Language used to describe the emotional impact of doing a PhD often referred to 'battles' and 'fights' or 'boiling over' or metaphors around 'sink or swim'. PGRs described feelings of loneliness and isolation, which obviously had a negative impact on their emotional health. Participants felt that the emotional impact of doing their PhD was often ignored by the institution or in contradiction with messaging:

> "'*Now you must take your annual leave, you must make sure you look after yourself— unless we send you an email and say that we need something*'"—Will

Participants reported finding it difficult to look after themselves and balance the emotional drain that the PhD caused, with a number reporting feeling miserable, depressed, demoralised, and overwhelmed by the PhD. PGRs reported crying in their offices, and even in front of their supervisors, due to the stress of the PhD:

> "*I would never go into my supervisors office and cry like I just couldn't do it. . . and I know that so many people do*"—Owen

The emotional impact of the PhD often led to ignoring struggles, downplaying experiences, and self-deprecation:

> "*Like in my mind, I'm just like stop being a piece of sh*t!*"—Ellen

3.2.2. Topic-Related Distress

A number of participants who research emotionally challenging topics discussed the emotional impact from their data and area of study. These participants often struggled to detach from their research area:

> "*Especially doing a topic like mine, which can be quite miserable and you know, you're looking at kind of the worst thing that has happened to a person, it's it's hard to get something to take that off your mind when you're just in your own lounge*"—Nancy

The emotional impact of research did not stop after literature reviewing or data collection, with emotional affects being felt throughout the research process:

> "*For a month, I just couldn't bring myself to read the transcripts. I just couldn't do it, I I was getting like teary eyed when I was like, I was like, stop being melodramatic and stuff, it's just the transcript*"—Maria

The amount of support given to those undertaking emotionally challenging research seemed to vary by their supervisor, but no participant referenced undergoing training or access to specific support for any mental health concerns arising from their topic area. The PGRs who were undertaking emotionally challenging research felt there should be more support for them and support for their supervisors, to allow them to effectively guide them through the process and help manage the emotional effects of this research.

3.3. Theme 3: Support Provisions

Participants had a range of interactions with and knowledge about university and non-university support provisions. Experiences were mixed and rhetoric about university services was generally not positive.

3.3.1. Services at the Institution

Institutions varied in terms of what they provided; all participants acknowledged a counselling or wellbeing service, but access to training, peer support, and early intervention was not universal. All participants referenced services being underfunded, understaffed, and under-resourced, especially to be able to meet the needs of a diverse student population.

> "*When it comes to the students need, they are pretty um diverse and the university literally cannot provide them and they do not have the resources. I am sure about that.*"—Reuben

Participants spoke about the lack of cultural knowledge of some support staff, and how difficult it can be as an international student to access services and feel like they understand your background. For PGRs for whom English was not their first language, accessing support and articulating their emotional and mental health concerns was challenging:

"Yeah, it's all about the I guess all of the connotations that go with certain expressions, which are also really related to shared experiences or at least to culture with and—so they don't really translate"—Joel

Participants felt that services, where they did exist, had extremely long waiting lists, even for students in crisis:

"Its just so ironic cause it's like a crisis support and I'm sure I had to book it like 2 weeks in advance [laughs]"—Fran

PGRs were aware that many services offered short-term, limited support, and this was a contentious issue. There was discussion of the 'sticking plaster' notion of mental health support, or 'palming off' students to other services or the NHS, which was felt to be inappropriate. A number of PGRs highlighted that their university services did not signpost to local or national services/charities/support, meaning that they either had to do the work and research to find support, or they remained in the dark about support that was not university-based. PGRs were acutely aware of the structuring of support services as primarily tailored to undergraduate students:

"It always felt so much, undergraduate focused, partly because of the lack of year round support, um and partly cause so many of the sort of events that they put on the things to do that would either basically give you a space to just relax or you know the things that you could perhaps do… Workshops and things were built around someone who would have an undergraduate timetable. Which you know it never felt like you were being deliberately excluded, but you were sort of… it was less available to you"—Jen

Some participants reported being turned away from services, as they were not set up to 'deal' with PGRs, while others reported that they had no recognition of PGRs as a unique group.

"I contacted the student well being office because I was really struggling and really having a hard time and basically like they have no support—like they don't know how to deal with postgraduate students at all, like it's basically all of their stuff is for undergraduates on on taught courses and you know you can get a uhm, you know a note taker or recording devices and or you can get more time on exams and that sort of thing, but they have essentially no accommodations for research students, or uhm yeah, any, any like postgraduate stuff"—Cat

The suitability of services was a sticking point for a number of participants, who felt that the services were not suitable to meet their needs, and thus, that it was pointless to try and engage with them:

"The student mental health discourses and frameworks do not recognise the specific needs of PhD students which I think is quite different often rather than the general mental health um support and provisions that we do for say undergrads or taught programs broadly"—Lawrence

The issues of suitability also extended to accommodations for PGRs who required them. The summer period was noted as particularly challenging, as due to institutional and governmental processes, Disabled Student Allowance-based supports were often suspended or severely limited. PGRs were often not informed of this in advance and felt overwhelmed by having their specialist support suddenly removed. There was also a perception that accommodations offered by universities were, again, only developed and implemented with undergraduates in mind; there was frustration expressed that they often only covered things like notetakers for lectures, or extensions on examination times, and did not reflect the reality of PGR study.

"Like they don't know how to deal with postgraduate students at all, like it's basically all of their stuff is for undergraduates on taught courses and you know you can get a uhm, you know a note taker or recording devices and or you can get more time on exams and that sort of thing, but they have essentially no accommodations for research students, or uhm yeah, any like postgraduate stuff"—Maria

3.3.2. Knowledge

The knowledge of services and provisions varied between participants. Some participants felt they knew where to look, having been made aware of support services, but it was noted that the information needed to be clearer and more easily accessible, removing the burden from the student (especially if they were really struggling):

"I would love it if all of that information was—you know, all the information about the support that was out there was presented to everybody and not just presented to the people who are struggling and need to search for help themselves [...] I wish that stuff was readily available like that everybody knew about it kind of from the get go and not just when you're at crisis point and you're searching for help"—Kevin

Other PGRs did not know where to look, with one saying they only found support by typing their university name and 'mental health support' into Google. The PGRs felt that their supervisors varied in terms of their knowledge about support, with a number feeling that if they raised concerns with their supervisor they would be told to 'go to Student Support', with no real knowledge or acknowledgement from the supervisor of what that would entail or what the outcomes might be. Participants felt that the induction could be a key place to get the message out about available support, but none recalled having this information given to them as a part of induction. There was a distinction made between PGR knowledge of support for physical health and disability and that of mental health support:

"Maybe for physical disabilities you could find that stuff out a little bit um more I feel like they're quite open about that sort of thing um but not for mental health things I found"—Maria

There were a number of PGRs who expressed that they were only aware of services because they had completed their undergraduate at the same institution. They felt that if they only had their PGR-based knowledge and experiences, they would not know where to go to get support. The notion of 'carrying over' knowledge was frequently brought up, and this was similar for the PGRs who also worked as Associate Tutors/teaching staff; they felt they knew about the services because they needed to for their students, not as part of their PhD experiences.

3.3.3. Access to and Forms of Support

PGRs felt that there were a number of barriers to accessing support, including lengthy bureaucratic processes which they felt did not make much sense:

"It's about some procedures students are not aware of, too many complicated bureaucracy"—Lawrence

Participants felt that their access to support was limited due to their PhD, particularly for lab-based students or students in large, spread-out institutions, where finding the time and availability to access 9-5 support services was tricky. A number of students found the disability support services easier to access than the wellbeing or mental health services; however, the impact of evidence production complicated their interactions. PGRs who remained at the same institution found accessing support easier as they were already 'on the books', suggesting some inequities in the accessibility of support.

A number of PGRs spoke of informal peer support being incredibly beneficial for their mental health; however, there were concerns and some cynicism about peer support being a way for universities to shift responsibility: the notion of 'students supporting students'

came up a number of times. PGRs were concerned that informal peer support meant there was no oversight, no training given to allow structured and useful peer support, and no-one to support the PGRs if the peer(s) they were supporting were in crisis, or if the support they were providing was having a detrimental impact on their own mental health. PGRs who had a positive experience of peer support said they felt 'lucky' to have it, and PGRs who had no experience 'wished' they could have had that support. It is important to note that some PGRs had no idea if their institution operated formal or informal peer support networks due to a lack of communication.

> "*I don't even know if they exist*"—Will

For most PGRs, their friends and partner were the primary form of support that they relied on, with some sympathising with their 'poor' partner or friends for having to deal with them. A number of PGRs sought support online, primarily through Twitter, and this was especially useful for part-time PGRs, who did not appear to have a sense of belonging to their cohort or university. PGRs who had experienced mental health crises and suicidality referenced seeking support from the Samaritans or the local mental health crisis team, with only one PGR presenting to university support in crisis (and this did not go well).

Whilst some participants found their supervisor to be a form of support, others did not (explored in more detail below); however, they all acknowledged that their supervisor should at least have some knowledge of available support for signposting and to remove any emotional burden from the supervisor. Seeking support can often come with a number of processes such as referral, documentation, and disclosure. The processes that enable or hinder this were discussed by a number of PGRs:

> "*It is wrong, that disclosing mental health condition would or could negatively impact you, but it's also like you're aware that. . . like if there is anything which is slightly wrong, it can be used against you, even if that is like. . .illegal.*"—Niamh

As mentioned previously, issues of wait times were also brought up when discussing the possibility of utilising NHS support.

3.4. Theme 4: PGR Identities

There were a number of identities that PGRs had to balance: that of themselves as a PGR, of themselves existing within a university system, as a burgeoning researcher, and as an individual. The ways they experienced these identities and their effect on their mental health varied across and within the PhD journey.

3.4.1. PhD Identity

Participants often felt that their identity as a PhD student was tied to their motivations for studying and how they related to other students' and friends' experiences. PGRs tended to enter their PhD because they were passionate about their topic or for professional development, but this identity often interacted with their individual identity to create competition, uncertainty, and self-doubt:

> "*As a mature student going back, I did feel quite vulnerable because I was meeting these very bright uh, articulate people who knew loads [. . .] and I uh, sometimes you get that sort of impostor syndrome feeling. And I kept thinking. Well, I'm not—this is too difficult. I I can't do it*"—Kyle

For PGRs who had returned to academia after a period of work, this identity could be quite difficult to manage, as they were used to being seen as an equal, not as a student to be supervised. For PGRs who taught or worked alongside their PhD, this complicated their identity as a PGR and often meant they fell between identities, not quite feeling like a PGR, and not quite feeling like a staff member.

> "*I think with the role that I have, um they, there are points where you are sort of balance. You're trying to make about five plates spin at one period in time*"—Joel

The PhD identity was also assumed by the university and supervisors to come with a certain set of knowledge and skills, such as knowing about publishing, academic language, how to finish their PhD, and how to research independently. This was particularly difficult to balance for first-generation students:

> "*I suppose because I don't come from a very academic background—personally, I was the I was the first person in my family to go to uni, so I feel like I have a lot of stupid questions and I have a lot of questions that I wouldn't necessarily want to ask my supervisors, even though they're lovely. And I'm sure that they would give me a nice answer, but I don't want to seem stupid*"—Nancy

3.4.2. Individual Identity

Participants' individual identity was often felt to be at odds with their identity as a PhD student:

> "*I feel like a PhD has put my life on hold a little bit in terms of some of my other goals, so I'm, I'm saving for a house, but I yeah, I gave up a full time job to do the Masters and then the PhD, so that's pushed back a bit, it's going to be harder for me to get a mortgage with my partner because I'm a PhD student, pushing back marriage, pushing back kids. …. it does feel like a PhD—it just kind of wormed its way directly in the middle of all of my life plans, and I'm kind of picking up the pieces a little bit*"—Jen

A number of participants shared Jen's sentiment, feeling that the PhD had put their life on hold or put them further behind their friends who knew what they were doing with their lives or were more financially stable or were settling down. Individual identities were also felt to be ignored by supervisors and the institutions, particularly for LGBTQ+ PGRs, who were trying to deal with past experiences of discrimination, their self-discovery of who they were, and their identity as a PhD student. The LGBTQ+ PGRs in this sample were not aware of how or to who to report any instances of discrimination, which suggests a worrying lack of information sharing and awareness. When discussing their identities, many PGRs were very self-critical and self-deprecating, comparing themselves to others or feeling that their demographic characteristics meant they had to fulfil a certain role as a PGR.

PGRs had to balance their identity as a staff member and student at the same time (often as prescribed by their university) and the fluctuating nature of their relationship with others, moving from being an equal to being 'below' them in the hierarchy:

> "[Talking about working as a lecturer] *Oh, we're not equal* [laughs]"—Fran

3.4.3. Identity and International Students

For international PGRs, their identity as a PGR was often uncertain, with visa issues being extensively discussed:

> "*Cause it's really stressful when you get something in writing saying your visa is at stake and when you go to the, when you when you want to go visit your family. They have to contact the university and show them your copies of your plane tickets copies of your passport. Feels that you're doing something wrong. It's terrible. You just went to visit your family during Christmas time and you're treated like you are illegal. I can be perfectly legal I'm here doing everything I'm supposed to do, and that was one of my stressors, um being on the visa*"—Maria

International PGRs also spoke of the cultural differences and the impact of managing those whilst studying and being away from friends, family, and familiarity.

> "[Talking about impact on mental health] *Being an international PhD researcher is also like a huge part of that because I have no support system to speak of um here*"—Sara

International PGRs also highlighted how their identity as an international student further complicated accessing university and NHS services due to the mandatory processes:

"[Talking about accommodations] *At the time I didn't have like the proper documentation that you needed to submit to get all this stuff because you also have to have like—I had to get it from like a GP on the NHS or GP like in the UK, which I didn't have at all, like all of my records were from the US*"—Fran

3.5. Theme 5: Supervisors and Supervision

Participants' experiences of supervision varied greatly, with the frequency and type of supervisory meetings being drastically different between PGRs. PGRs felt that supervision could have a substantial impact on their mental health, and the power of the supervisor could make or break their experience and their mental health.

3.5.1. Supervisor Priorities

A key discussion point was supervisor priorities. Most PGRs felt that their supervisors were overworked and did not have adequate support; however, this did not excuse them from bad practice, nor did it stop the participants from questioning their priorities:

"At the end of the day he's just sort of over worked like the system—so he's got like family and a family that keeps him busy because there's kids also have special needs and so I I do understand his priorities, it's just they don't work out in a great way for his PhD students"—Joel

It was felt that supervisors often did not have their PGRs as a priority, let alone their mental health, and for some, they felt that their supervisor just viewed them as a means to an end (publications, grants, labour) rather than having a responsibility to guide them:

"I think if supervisors understood the person rather than the project, I think mental health—peoples experience with the PhD I think would be a lot lot lot better"—Will

A number of PGRs felt that their supervisor was completely absent and would not support them by reading work or making time for them. Understandably, this led to those PGRs feeling that the supervisory relationship had a detrimental effect on their mental health, and unfortunately, it led to a lot of self-blame and self-criticism, feeling that they were not a 'good' enough student to deserve acceptable supervision. Supervisors were seen to have inordinate amounts of power over their students, and how they chose to 'use' this power was integral to PGR success. A number of PGRs felt that their supervisors were 'workaholics' and expected the same from them, with supervisors not respecting candidates' physical health, let alone their mental health:

"[about not preparing for a meeting due to being physically ill] I thought they'd sort of tear me to shreds"—Owen

Supervisors were felt to uphold and propagate the same discourses that existed amongst other PGRs around mental health challenges as something to be expected and 'normal':

"Yeah, I remember kind of, I think bringing. . . bringing it up in certain supervisions with varying kind of levels of success in terms of how it went and I do remember one time being told that kind of—that was just normal for PhD students and uh I came away feeling like there's something wrong with me and I couldn't kind of handle it and this was just what was expected of me"—Scott

It is arguably unsurprising that these discourses exist among PGRs if these are the messages they are receiving from supervisors. The majority of PGRs felt that supervisors should have training and support around PGR mental health and felt that getting a good supervisor was often 'potluck', and there were inequities in how much supervisors knew about mental health and the support available, which was felt to be unacceptable.

3.5.2. Supervision Experiences

There were some positive experiences of supervision reported. These mostly related to supervisors checking in on their candidate's wellbeing and acknowledging any struggles that they were having.

"They'll never come across as though they are perfect and every single piece of work that they have done is gold standard—they have gone through the same processes that I've gone though and they're able to emphasise with some of the experiences that I have had and I will have in the future. So now I will definitely be able to go to them and they will be able to support me throughout that process"—Owen

Candidates who did not receive this acknowledgement felt rejected, and challenges affected their mental health more negatively:

"And of course the paper got rejected and my supervisors comment was something like, 'well, that that was to be expected' and of course all that I wanted to hear was like, 'well, that sucks let's move on', didn't get that comment…"—Joel

It seemed that positive experiences of supervision stemmed from their supervisor viewing them as a 'whole person' rather than just a project to be supervised and negotiating or advocating on their behalf, especially when this involved an acknowledgement of their position in the academic hierarchy:

"They would frequently bring up the emotional toll it had with the university, and there was one point where my supervisor said it was having an emotional toll on him too, because he knew that they would care more about that than about the toll on me and it did—it started escalating things"—Theo

Negative experiences of supervision were acknowledged to have a substantial negative impact on mental health:

"Let's say in both cases it was disruptive and the supervisor who basically left because they didn't agree with me, and rather than dealing with that like professional, decided the best thing to do is not talk to me. That was definitely a negative on the mental health experience…"—Sara

There were significant discussions about how much pastoral support supervisors were meant to be giving, if any. Participants who had disclosed information about their mental health often regretted this decision, feeling it could have ramifications in their career and future:

"But I think I won't tell them the extent of how low I feel because I feel like I already have kinda hindered any pos-potential possibility of working on further projects with them because I feel like I've made myself appear unable to cope with work and academia in general so I think I don't wanna like say or do anything that can further compromise that…"—Ellen

3.6. Theme 6: Environment and Processes

There were significant discussions about the environment that PGRs exist in and how that can impact their mental health; this related to the physical environment, cultural environment, and PGRs' position in these environments.

3.6.1. Physical Environment

The physical environment that PGRs exist in was noted to have a real effect on their mental health. Access to a desk varied between PGRs, with some having a set desk in a set office, allowing for the development of relationships with peers and a feeling of belonging to a research culture. For other PGRs, they did not have access to this and thus felt more isolated.

"I didn't really have a great living space or working space, and at home I immediately felt quite kind of detached from the university"—Scott

The role of working from home was discussed at length relating to the environment, with a number of PGRs having inadequate home working environments but having to adjust to working in their bedrooms, sharing computers with partners or children, and dealing with animals and bad internet connections. Some PGRs felt unable to focus at home, and others who were lab-based were unable to work at all on their projects. Isolation from working from home, frustration at an inadequate set up, and an inability to concentrate at home understandably had a negative impact on their mental health. There were some regrets from PGRs who started during the pandemic wishing that they could have had the in-person, on-site experience from the start of their PhD.

"Working at home and isolating—well not isolating—but you know, lockdown and things, how do you have that contact with other PGR students?"—Fran

3.6.2. Cultural Environment

Experiences of the research culture and academic environment were frequently brought up. Some PGRs were unsure what the research culture was meant to be. PGRs who felt they knew what the research culture was varied in how much they felt they were a part of the institutional research culture.

"Mixed. . .To be honest, I don't really know what it means research culture. . . to be part of it"—Theo

PGRs felt that there was a real distinction between the wider academic culture—one that they were not a part of—and the research culture among doctoral candidates. All participants felt that the research culture was very important (for PGRs who did not meet with their supervisor often, it was viewed as on par with supervision in terms of importance). They felt that they had to make their own research culture because a wider academic research culture was not available to them:

"I really do think there has to be more like intervention and reaching out rather than reaching up"—Max

Many discussed that this could be due to COVID-19 lockdowns and not physically being at their university, but many felt that universities were using COVID-19 as a reason for not putting in the work to connect candidates with one another and ensure that they had an experience of a research culture or peer support. Most felt universities and supervisors could be doing more to allow candidates to meet one another and connect, but this was a real issue for cross-disciplinary candidates who felt they did not 'fit' neatly into the school or faculty culture where one existed.

A number of PGRs felt that when they did make their own research culture through setting up things like peer support groups, their institutions then took credit for this labour and boasted that they had peer support programmes, despite having no involvement in their creation or management.

3.6.3. Position in the Environments

PGRs were very aware of their status in the academic hierarchy. A number spoke of poor treatment by their department and institutions. One candidate described the research culture and academia as only serving 'cis, white men'. There was discussion of the structure of the university environment and how having good mental health and taking care of yourself are antithetical to the environment that PhDs create:

"There's only so much that well-being days and therapy can do, and student campus services can do when the structures of the institution are completely oppositional to actually looking after yourself, they just don't—like the way that you can look after yourself and how a PhD operates, or how an institution operates they clash. They can't—they can't go together"—Theo

Unfortunately, participants did report experiences of racism, sexism and gender discrimination, homophobia, and ableism. When reporting these issues, there were mixed

responses from institutions, especially when the candidate was viewed as much lower in the power structure than those who had been discriminatory.

> *"Maybe they don't feel as comfortable like coming forward because you're, kind of uhm you know, coming from a lesser position of power in a variety of ways, you know as a PhD researcher, as an international student, you know as a migrant, you know all of these kinds of things"*—Maria

As well as feeling like they were at the bottom of the hierarchy through the treatment from others, PGRs also felt that institutional environments around finances and pay put them in a nebulous and unstable position in regard to their security and ability to support themselves whilst doing a PhD:

> *"These are supposed to be the brightest minds in this field with novel ideas that have never been discussed before, never been researched—that's the whole point of a PhD—and yet you pay them peanuts, if you pay them"*—Will

4. Discussion

Overall, the PGRs in this sample explored a wide range of factors that influenced their mental health whilst doing a PhD. It is important to note that whilst there were some examples of good supervisory practice and institutional policies, there is a lot for universities to learn and implement about how to better support their PGR students.

Discourses around mental health and the conflation of mental health and wellbeing were identified as prevalent barriers to seeking help and the self-identification of studying and are in line with previously identified expectations of suffering whilst doing a PhD [6].

The emotional impact of completing a PhD, which involves managing projects, training needs, professional development, and external life events, has been identified previously as a stressor [2,3] and was highlighted by PGRs in this study. Further complicating the emotional impact of conducting a PhD is the type of research a candidate is undertaking, and further work in understanding the impact of researching emotionally challenging topics needs to be conducted to understand how to better support PGRs (and their supervisors) doing this work. Participants' comments about experiencing imposter syndrome are in line with previous work showing that PGRs reported frequently experiencing imposter syndrome [2,3,12], and that this can make it difficult to ask for help.

Unsurprisingly, the supervisory relationship was noted as having a tricky impact on mental health. Participants' comments echoed previous findings that a below-average-quality doctoral–supervisor relationship has been found to be significantly associated with a greater risk of stressful working conditions and stress [2,6,12]. A number of participants felt that their supervisor was inaccessible both in terms of academic support and pastoral support, with effects on their stress levels as a result; this is in line with the work on stress in the doctoral journey [1,3]. Additionally, PGRs in this sample varied in their level of comfort and perceptions of appropriateness of discussing their mental health with their supervisors. This is an important consideration identified in previous work and for universities to consider when providing training and guidelines to supervisors, as well as for supervisors to consider when beginning the supervisory relationship with new candidates.

4.1. Practical Implications

Universities should be aware of the messaging they are upholding about mental health and carefully consider the evidence base surrounding conflations of mental health and wellbeing and the potential impact on student perceptions of these discourses, as well as the influences on support structures and help seeking. Universities should think critically about the knowledge and understanding that support structures and services (including student-facing staff) have about the PGR experience and ensure that services are accessible to PGRs.

-   Doctoral colleges should ensure that the training provided to supervisors acknowledges the stressors that PGRs may face and is receptive of and sensitive to issues

of PGR mental health, including ensuring that supervisors are able to adequately signpost to support resources, have knowledge about the interruption of studies, allow them space to understand and reflect upon their positionality and power within the supervisory relationship, and support supervisors to protect their own mental health whilst supervising candidates. They should also carefully examine information provided to PGRs around their mental health, the equity of information given, and co-creation.

- Supervisors should reflect on their pedagogical practice and supervisory style, acknowledging power differentials and the impact that external events and factors can have on their candidates. Supervisors should take an active role in signposting and not assume that all candidates will be confident and comfortable asking them for support and open those doors for them.

4.2. Limitations

As the interviews were designed to be de-identified, even if mentioned, the institution that participants studied at was not included in the analysis, and thus, it was not possible to understand the range of different disclosure processes that exist within different institutions and offer any recommendations or process-specific findings (although the finding that processes are confusing, difficult, and different depending on the university does support the idea that there should be a streamlined, UK-wide process, rather than each institution having its own procedures).

Whilst the sample was reflective of major disciplines, modes, and years of study, and broadly representative of the doctoral landscape in the UK with representation from men, LGBTQ+ students, disabled students, and international students, including those with and without experience of mental health challenges, the sample was self-selecting and thus may have missed some hidden voices. The aim of this study was not to produce 'generalisable' accounts of what PGR study will be like for all candidates, and whilst the capture of varied experiences shows that the participants were willing to openly share their perspectives, thoughts, critiques, and recommendations for institutions, these may not be appropriate for all PGRs or universities and exist within the UK-specific context.

4.3. Future Directions

A number of findings from this research will benefit from further investigation. Limited work around the experiences of LGBTQ+ PGRs exists; the findings that they may not be aware of how to report discrimination is concerning, and further work will illuminate the gaps in university advertising and processes for reporting harassment and discrimination (this will also benefit students of other minoritized backgrounds, though experiences of racial discrimination were not explicitly reported within this sample).

There is much work to be carried out around PGR identities, particularly for PGRs who teach and part-time PGRs who also have other jobs—especially if these jobs are at a more senior level. The power-play within supervisory relationships can be difficult to navigate, and these findings suggest this may be additionally complicated for PGRs who have other employment, or have had a period out of education, perhaps at a more senior level.

5. Conclusions

The PGRs in this sample shared a range of experiences relating to their mental health during their PhD. The University as an idea and as an institution were pervasive areas of discussion; participants identified 'The University' as enacting various policies, procedures, hurdles, and enablers to good mental health, but also felt that the discourses that existed within institutions had the potential to negatively impact mental health through inadequate, inaccessible, or ill-informed interventions, support structures, and definitions of mental health.

Alongside an acknowledgement of the training (or lack of) that supervisors may have, PGRs felt that the power that supervisors have, and how they use it, has substantial ramifi-

cations on their mental health. PGRs felt that supervision was less likely to have negative effects on their mental health if supervisors used their power to advocate, share experiences, and recognise candidates' identity as a PGR, with mental health being negatively impacted by non-acknowledgement of their mental health, the PGR identity, struggles, and discriminatory practices.

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