

Article

Qualitative Pilot Interventions for the Enhancement of Mental Health Support in Doctoral Students

Chloe Casey ^{1,*}, Steven Trenoweth ¹ , Orlanda Harvey ¹, Jason Helstrip ², Fiona Knight ³ , Julia Taylor ³ 
and Martyn Polkinghorne ⁴ 

¹ Faculty of Health and Social Sciences, Bournemouth University, Poole BH12 5BB, UK; harveyo@bournemouth.ac.uk (O.H.)

² Faculty of Science and Technology, Bournemouth University, Poole BH12 5BB, UK; jhelstrip@bournemouth.ac.uk

³ Doctoral College, Bournemouth University, Poole BH12 5BB, UK

⁴ Business School, Bournemouth University, Poole BH12 5BB, UK; polkinghornem@bournemouth.ac.uk

* Correspondence: ccasey@bournemouth.ac.uk

Abstract: Doctoral degrees include Doctor of Philosophy (PhD) and other professional doctorates such as Engineering Doctorate (EngD), Doctor of Education (EdD), or Doctor of Clinical Psychology (DClinPsy). Unlike undergraduate- or postgraduate-taught students, doctoral study focuses on a single, autonomous piece of research. Research indicates a high occurrence of mental health problems in doctoral students. This paper describes the piloting and qualitative evaluation of a range of interventions designed to enhance the mental health support for doctoral students at one UK university. These interventions sought to target an array of known factors that affect the mental health of doctoral students, including individual capacity for coping with stress and social support availability.

Keywords: postgraduate; doctoral; PhD; mental health; wellbeing; mindfulness; supervision; best practice; university



Citation: Casey, C.; Trenoweth, S.; Harvey, O.; Helstrip, J.; Knight, F.; Taylor, J.; Polkinghorne, M. Qualitative Pilot Interventions for the Enhancement of Mental Health Support in Doctoral Students. *Psych* **2024**, *6*, 426–437. <https://doi.org/10.3390/psych6010025>

Academic Editor: Nicola Magnavita

Received: 31 January 2024

Revised: 5 March 2024

Accepted: 12 March 2024

Published: 14 March 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Poor mental health has been identified as a central issue for doctoral students in the United Kingdom (UK) [1,2], Europe [3], and internationally [4]. Recent research has indicated a high prevalence of stress [5], psychological distress [6,7], and depression and anxiety [8] in doctoral students at UK universities. Poor resilience to stress has been identified in this population [9–11], which also contributes to poorer mental health outcomes. Further, research has explored how this contributes to absence and attrition in postgraduate research degrees in the UK [12]. This has negative consequences on a personal level and an institutional level, adversely affecting the research output of UK universities. This highlights the pressing need for targeted interventions to support the mental health of doctoral students within UK higher education.

A recent review summarized the pertinent factors that appear to predict poorer mental health during postgraduate research degrees [13]. The authors postulate that individual psychological resources, peer and supervisory support, and academic culture in combination underpin mental health in this population. During the COVID-19 pandemic, these issues were exacerbated due to nation-wide lockdowns, reducing supervisory and peer contact [14,15]. Mental health in doctoral students reportedly worsened during the pandemic [16], although the underpinning factors remained salient.

It is a priority for universities to create conditions that are protective to mental health and well-being. A recent evidence review in higher education student samples identified a range of positive psychological outcomes attributed to mental health interventions [17]. It is important that interventions to improve mental health and wellbeing in higher education

continue to be evaluated to assist universities in allocating funding in the most efficient way. To date, a small number of interventions have been tested in groups of doctoral students. These have tended to be on a small scale in single UK universities, focusing on promoting social support from faculty staff [18–20] or peer support between doctoral students [21–24] as approaches to enhance mental health support. However, these interventions tended to focus on one layer of a doctoral student's complex ecological system. As identified, interventions are unlikely to be successful unless they simultaneously target multiple aspects, from the individual's psychological resilience to stress, their immediate support system, and the wider research culture they are active within [13].

This research sought to identify the types of interventions that could be used to build resilience and enhance university support for the mental health of doctoral students. This entry presents the findings of a range of pilot interventions, targeting an array of known factors that affect the mental health of doctoral students, including individual capacity for coping with stress and social support availability. The aim of this study was to test and qualitatively evaluate small-scale interventions to support the mental health of doctoral students at one UK university.

2. Methods

2.1. Design

A qualitative pilot study was undertaken at one university in the south of England to evaluate the acceptability of 3 novel interventions. Qualitative evaluation is recommended in pilot or feasibility studies to assess key uncertainties [25] and to provide an in-depth analysis of contextual factors such as the barriers, enablers, and acceptability of such interventions [26]. Qualitative data were collected via open-ended survey questions and via focus groups. The focus groups were the preferred method of data collection, as they yielded large amounts of qualitative data and allowed for an in-depth exploration of concepts [27]. However, the use of the online survey allowed an anonymous forum for feedback and ensured that more views were captured. In addition, fully qualitative surveys, despite their limitations such as the inability to probe for more detail, can elicit rich detail [28]. The triangulation of both data collection methods allowed a breadth of data to be collected, optimizing the opportunities to evaluate the workshops.

At the beginning of the study, participants were directed to register for the workshops online via Jisc Online Surveys. This involved inputting demographic information and contact details and choosing which intervention they would like to take part in. Participants were only able to sign up for one of the workshop series. The survey was open for the month of September 2020.

After registering, participants were invited to complete pre-workshop and post-workshop surveys. Open-ended survey questions included: "What are your hopes for the workshop series? What are your feelings towards the online trial you took part in? How many of the workshops did you attend? Were you active in group participation? Did you contribute significantly to your group? Do you feel the workshop content had practical value in your life? If yes, where will you apply this knowledge? Was the instructor responsive and sensitive to your needs, as well as the groups'? Do you have any concerns regarding the software used for the activities? If the course trial were to be expanded, what additional concepts should be covered? If the trial were to be made shorter, what areas could be omitted? What improvements would you recommend for this trial?" The participants were given an identifier code to link their responses to the surveys.

Participants were then invited to attend focus groups after completing the workshops. To evaluate the 3 interventions, 3 focus groups took place in January 2021. The focus groups were hosted via Microsoft Teams and were around an hour in duration. The focus groups were recorded and transcribed verbatim, but all identifiable details such as names and geographical locations were anonymized before data analysis.

2.2. Interventions

The 3 novel interventions were tested between September and December 2020: project planning, mentoring, and mindfulness. The interventions consisted of 3 series of online workshops. The series of workshops were designed based on the understanding of the existing literature and the results of a survey and interviews conducted with students from the university in 2019 (published elsewhere). The series of workshops were co-produced by the lead author (CC) and the workshop facilitators (ST, OH, and JH) with the support of an advisory group of doctoral students studying at the university at the time.

The project-planning intervention was co-designed and delivered by an academic with previous experience in project management (OH) who had recently graduated from their doctoral degree at the university. The live online course was delivered over four weeks between September and October 2020. The weekly workshops were one hour long and focused on helping a group of doctoral students to plan their time and mentally prepare for the challenges of doctoral research.

The first project-planning workshop of the series concentrated on the supervisory relationship and how to get the most out of doctoral supervision. The second week was centered around designing project plans and better understanding the research journey. The third workshop taught attendees about time management strategies and common pitfalls, such as procrastination. The final workshop was based on understanding oneself, recognizing impostor syndrome, and challenging negative self-talk.

The mentoring intervention was designed and delivered by an academic and mental health professional (ST). As academic mentorship is already provided by doctoral supervisors, the sessions focused on the psychosocial aspect of mentorship [29]. The live 4-week online course took place in October 2020. The series of workshops were hosted once a week and lasted one hour. The facilitator provided self-reflection resources for the participants to complete between the sessions.

The first workshop in the series explored the participants' understanding of mental health and well-being. The second week focused on identifying and coping with stress. The third workshop taught participants about problem-solving. The final week looked at maintaining mental health and well-being while at university.

The mindfulness intervention was designed and delivered by a current doctoral student at the university, who is a professional mindfulness trainer (JH). The 6-week live online series of workshops commenced in October and ended in November 2020.

Each workshop included a guided mindfulness exercise led by the facilitator. The first workshop in the series introduced mindfulness and a simple breathing exercise. The second week moved on to exploring the stressors of the doctoral degree. The third and fourth weeks introduced new techniques including bodily mindfulness and guided visualization. The fifth week included discussions of resilience to change and how mindfulness can offer support as a stress-reduction strategy. The final workshop explored motivation and the benefits of the long-term implementation of mindfulness.

2.3. Participants

In practice, sample sizes for qualitative feasibility or pilot studies typically range from 5 to 20 participants [25]. However, sample sizes within qualitative pilot studies are dependent on contextual factors such as resources. In this study, there were ten spaces allocated for each workshop series to ensure a manageable number of participants for the workshop facilitators via online delivery.

This research recruited a purposive sample, seeking only doctoral students from one post-92 university in the south of England. Undergraduate- or postgraduate-taught students were excluded from this study. To recruit participants, a poster was disseminated online via social media. In terms of recruitment rates, 26 doctoral students from the university signed up to take part in the workshops, representing 4.38% of the cohort. Table 1 demonstrates the demographics of the participants who registered for the workshops. The diversity of samples is more important than sample size within such qualitative pilot

studies [25] to ensure that balanced, diverse views are gathered. The sample in the current study was female-biased, and most participants were from the health and social sciences disciplines. However, the sample included a balance of international students and domestic students, with participants from a range of research stages.

Table 1. Demographics of registered participants.

Demographics	Freq	%
Gender		
Male	8	30.8
Female	18	69.2
Discipline		
Health and social sciences	13	50.0
Media and communication	5	19.2
Science and technology	5	19.2
Business and economics	3	11.5
Mode of study		
Part-time	6	23.1
Full-time	20	76.9
Staff	5	19.2
Research stage		
Taught phase	6	23.1
Pre-Major Review	10	38.5
Post-Major Review	7	26.9
Writing thesis	3	11.5
Ethnicity		
White UK/Ireland	11	42.3
White European	3	11.5
Other White background	1	3.8
Pakistani	1	3.8
Chinese	3	11.5
Other Asian background	2	7.7
Other Black background	1	3.8
Arab	3	11.5
Other	1	3.8
Domicile		
International students	14	53.8

Note: The total number of participants was 26. The mean age of the sample was 37.23 (10.11). Table displays frequencies and percentages. Freq = frequency. % = percentage.

2.4. Ethical Considerations

Ethical approval for this phase of the research was granted by the university in August 2020 (Ethics ID 32854). Participant's names were replaced by pseudonyms to protect their anonymity within the research outputs.

2.5. Data Analysis

The data collected from the three focus groups were aggregated with the qualitative feedback from the surveys. The qualitative analysis had a deductive framework, with the researcher seeking to evaluate certain aspects of the interventions. To ensure the trustworthiness of the findings, the steps of thematic analysis [30] were followed rigorously.

3. Results

Of the 26 participants who registered to take part in the workshops, 20 attended the workshops (77%). Of the 20 participants that attended the workshops, 13 (65%) completed the post-workshop survey, and 8 (40%) agreed to participate in the follow-up focus groups. The weekly attendance rates for the project planning, mentoring, and mindfulness workshops are demonstrated in Table 2.

Table 2. Workshop attendance.

Intervention	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Attendance Rate (%)
Project Planning	5	7	9	7	-	-	77
Mentoring	6	6	6	6	-	-	100
Mindfulness	5	2	3	1	1	2	47

Note: Table displays frequencies and percentages. n = number of participants.

3.1. Project Planning

Of the 10 participants who registered for the project-planning group, only 7 attended the workshops. Of these participants, five completed the pre- and post-workshop surveys. In addition, three participants took part in a focus group to evaluate the workshops, sharing positive feedback and making recommendations. Themes generated from the survey and focus group data included delivery and building resilience.

The first theme to be identified was delivery. The focus group members identified many benefits to the project-planning course being delivered online, meaning it was more accessible for those who work or live further away from campus and with other work or caring responsibilities:

“With things coming online, in my experience, it has been greatly beneficial. I have more opportunities.” Focus group participant 1

However, one survey respondent commented that the one-hour sessions were not long enough to allow participants to discuss complex concepts with the group or facilitator:

“The discussion points were meaningful to some participants which could have benefited from more time. Trouble shooting doctoral students’ issues should be given more attention . . . You can’t fix what’s broken, but you can give a helping hand.” Survey respondent 2

The second theme was building resilience. Within this theme, there were discussions around uncertainty and feeling unprepared and how this impacted resilience. The participants credited the workshops for helping them to understand the doctoral research journey and what to expect. This reduced uncertainty and helped them to take more control over their projects:

“If I’m ever stressed or I feel like I can’t cope it’s usually because I’m not sure what I’m supposed to do . . . Now I know my roadmap, it’s just building something out of Lego.” Focus group participant 2

However, for those at the start of their research projects, discussions of project planning made them feel overwhelmed by the enormity of the project ahead of them. Two participants used the metaphor of running:

“It’s really a race combined with a marathon! . . . you just want to sit in the corner and start crying, but you don’t have time to do that.” Focus group participant 3

The participants discussed the importance of the workshop content during COVID-19 and considering the economic and societal changes that were happening at the time of the research:

“Before COVID I think my self-esteem was much higher. It’s really devastating, it slowed my progress . . . maybe it’s psychological, because of the stress.” Focus group participant 3

Although the participants reported that the project-planning course helped them to manage stress during their research degrees, this theme illuminates the emotional impacts of the struggles doctoral students were facing at the time. It is important that the evaluation of this workshop series is considered in the context of the COVID-19 pandemic.

3.2. Mentoring

Of the nine participants who registered for the mentoring group, five completed the pre- and the post-workshop surveys and two took part in a focus group to evaluate the workshops. Control and social support were the overarching themes taken from the survey and focus group data.

The control theme encompassed discussions of uncertainty and lack of control, as well as how the workshops made participants feel more able to cope with challenges:

“It has helped reflect on the way that I would cope . . . My stress when it comes to this whole PhD journey is the fact that I have no idea what’s expected.” Focus group participant 4

One participant expressed that the workshops encouraged them to think about focusing about things they can control, helping to manage stress:

“One of the key things I got out of the sessions and that is really solidified, is that this is all in my control. Even though I can’t control certain situations that I’m in, there’s still a choice there whether I enter into these situations.” Focus group participant 5

The facilitator encouraged participants to reflect on their ways of coping, encouraging more adaptive techniques:

“The main thing I learnt about myself is that I could deal with work stress more proactively rather than ‘just getting through it’. For example, I could make plans to reduce the stress rather than accepting it.” Survey respondent 4

The second theme, social support, summarized the value of having support from an academic outside of the supervisory team. Although they acknowledged that supervisors were key sources of support, they were often busy and not always accessible. Also, many doctoral students have professional student–tutor relationships with their supervisors, meaning that they may not feel comfortable discussing personal issues with them. In addition, there are the complexities of power balances within the supervisory relationship:

“I’m still in that phase of, like, they’re my professors . . . there’s still this hierarchy in my head . . . It’s not that they’re intimidating. It’s just I am intimidated by them.” Focus group participant 4

Beyond the usefulness of the workshop content, a key benefit of the mentoring intervention was the engagement with the other group members. This likely contributed to the high adherence within this intervention:

“What I found really helpful was the peers . . . We got to know each other really well . . . Especially at this time where there is no interaction really with anybody, it was quite nice to have this small group of people.” Focus group participant 4

Although the group discussed building a good rapport with the other group members, only emerging relationships could be built within this limited timeframe:

“I think for me, if it’s once a week for a short period of time, that only does the very short-term job . . . I think there is even more value to be got from those sessions.” Focus group participant 5

3.3. Mindfulness

Of the seven participants who registered for the mindfulness group, only five attended the workshops. All the attendees completed the pre-workshop survey and three completed the post-workshop survey. From the mindfulness group, three participants agreed to take

part in the follow-up focus group. Despite poorer attendance in this intervention, the participants found it valuable and useful, as outlined in the findings.

The themes established from the evaluation were engagement and implementation. The first theme, engagement, amalgamated the conversations around the potential barriers to recruitment in the mindfulness intervention. The participants discussed the negative perceptions of the concept of mindfulness and how this could explain recruitment challenges:

"I'm aware of people thinking mindfulness is another one of those airy-fairy things that hippie-type people do." Focus group participant 6

The group also explored the issue of stigma, and how, in some cultures, mindfulness is used as a treatment for mental ill-health, medicalizing the use of mindfulness. This could create barriers for engagement in some international students:

"We're all generally from different cultures and have different exposures to the idea of mindfulness . . . it might have a negative connotation for some people." Focus group participant 7

Further, two members of the group expressed how they were hesitant to designate their working hours to workshops relating to mental health and well-being, opting to spend time on skills-based training with a direct benefit for their research:

"You can't give yourself permission to undertake something that's about your wellbeing. I don't know why that is, but it seems like you can't justify it to yourself." Focus group participant 7

In the second theme, implementation, participants discussed how they embedded mindfulness into their lives and the long-term benefits. Some focus group members discussed how mindfulness helped them to regulate their emotions and cope with stress:

"I used to watch TV shows to relax myself, but I found that this mindfulness class is another way to ease my pressure." Focus group participant 8

However, some found difficulty integrating mindfulness in their daily lives beyond the course of workshops:

"I didn't experience any significant benefits; I think that is less to do with the workshop content and more to do with still exploring ways to begin to integrate the new behaviour into my life." Survey respondent 3

For some, the barriers to engagement were a lack of time and distractions. Due to COVID-19 restrictions enforcing home working and schooling across the UK, finding a quiet place to practice mindfulness was not always possible for the participants:

"Every time that I managed to engage there were distractions and it was hard to give 100% to the actual activities." Focus group participant 6

This is an issue that may be less pertinent post-pandemic, so the findings should be interpreted considering this.

4. Discussion

A range of novel interventions were developed and tested within this research to support the mental health and well-being of doctoral students at one UK university. The three series of workshops were evaluated using qualitative data collected from surveys and focus groups. These interventions sought to target an array of known factors that affect the mental health of doctoral students, including individual capacity for coping with stress and social support availability.

Overall, the mentoring intervention had the most consistent attendance (100%) and a range of reported benefits, providing doctoral students with tools to handle further stressful situations. Self-reflection appeared to be an effective mechanism of change, encouraging participants to consider their work–life balance and ways of coping with stress. This aligns with the literature, as reflection can help to build resilience [31]. The group format was also

effective in building relationships with peers, creating an additional benefit. Research has identified the issue of loneliness in doctoral studies [9], conveying the need for more social opportunities. This intervention, although aimed at helping the individuals cope better with stress, simultaneously provided the doctoral students with social support from their academic community.

It is understood that for doctoral students studying in the UK, stronger identification with peers and the academic community is associated with positive psychological outcomes [5,6]. Therefore, it could be recommended that more social opportunities are factored into training or induction processes for doctoral students to encourage attendance. However, the success of social events is reliant on the characteristics and dynamics of the group. Within the mentoring intervention, the format of the workshops and how the mentor encouraged and supported interaction between peers contributed to the success. This, in turn, widened the doctoral students' social networks at the university and gave them access to support from outside of their supervisory team. This was especially pertinent during the COVID-19 lockdowns, when social contact was limited. Therefore, it is difficult to estimate the success of the intervention were it to be replicated in a different group of individuals or within a different context or point in time.

However, despite the issues of loneliness and isolation in doctoral research, recruitment and engagement was a challenge across the interventions. Paradoxically, despite offering further social support, there was low uptake for these group workshops. One explanation is that engaging with the academic community can be viewed by doctoral students as time-intensive and burdensome [32,33]. It is also evidenced that a high workload limits the time available to engage in social opportunities, and doctoral students experience guilt when spending working hours at social events [9,34]. This was reiterated in the findings of this study.

In addition to the mentoring intervention, the project-planning workshops were well received, with good attendance throughout. Participants reported that the intervention taught them practical skills and helped them to further understand the expectations of the doctoral journey. Again, the group format created an additional benefit to taking part in the workshops, at a time where face-to-face socializing was not possible. Other perceived benefits of the intervention were an increased sense of control and an understanding of expectations. Doctoral research can be uncertain [35,36], but the project-planning intervention helped participants to better understand the experience and approach the journey with realistic expectations. This further identifies the need for universities and supervisors to normalize talking about uncertainty in research and the toll this can take on mental health [36] in order to create a safe space for discussion and to manage expectations [9]. If doctoral students are taught to expect uncertainty and are given training to help them cope with uncertainty, this may be protective of mental health.

The mindfulness intervention garnered positive feedback from participants, but had the poorest recruitment rates. In this study, attendance was poor and dwindled throughout the course. One explanation could be the timing of the study during COVID-19 lockdowns, where doctoral students were likely experiencing poorer mental health [16]. The ability and capacity to engage in self-care, such as mindfulness practice, during lockdown may have been limited. For instance, some participants reported struggling to access a quiet space to practice their mindfulness activities due to living in shared accommodation or alongside home-schooling.

Despite a strong evidence base to support its effectiveness in improving the mental health and resilience of higher education students [17,37], there was poor uptake of the intervention. An experimental longitudinal study by Galante and colleagues [38–40] demonstrated how mindfulness can be a feasible and effective mechanism to support good mental health within higher education populations. This research provides evidence that mindfulness may be an effective component of a strategy for overall student mental health in the UK. Likewise, Barry and colleagues presented the results of a mindfulness-based intervention conducted with doctoral students in Australian universities to promote mental

health and well-being [41]. The findings demonstrated significant increases in positive psychological resources such as resilience, hope, and self-efficacy.

However, the results of the current study are contradictory, and the barriers to recruitment in mindfulness interventions require further investigation. Recruitment challenges may include negative connotations related to mindfulness practice. Firstly, mindfulness is becoming increasingly commercialized in the UK and the West; this has been referred to as “McMindfulness” [42]. A recent systematic review identified 605 available apps based on mindfulness practice, yet only 7 had been tested for efficacy in randomized controlled trials [43]. Within this, most apps were deemed to be of low quality. This negative perception of mindfulness tools may contribute to poorer participation in mindfulness-based interventions.

In addition, international students who took part in this study discussed how there may be stigma relating to engaging in mindfulness practice due to its use in the treatment of mental health problems [44]. It was suggested that it could be seen as an admission of needing mental health support. Barry et al. [41] reported sample bias in their intervention, skewed towards domestic Australian students. It may be that mindfulness-based interventions are not appealing to individuals from certain cultural backgrounds. In higher education, research reports mistrust of campus mental health services and culturally-based negative attitudes towards seeking therapy or counseling in students of color [45] and Asian students [46]. Therefore, it is important that these insights are considered and inform change in university mental health support. Further research is needed to understand how to tailor mental health support services to be more culturally appropriate. By working with students from different cultural backgrounds, university mental health services, research, or initiatives should strive to further understand external and personal perceptions of mental health stigma.

Limitations

In terms of the methods of the current research, there were several limitations. Mainly, the small sample size, although expected in a qualitative pilot study [25], means that the results must be evaluated with caution. Additionally, no control group was used within this study. Although control groups are not commonly used in preliminary testing of interventions [47,48], this means that the study is especially susceptible to bias. Participants had the choice of registering for whichever workshops they were interested in attending, introducing further bias. This allowed participants to choose the well-being activities that most appealed to them and their interests, but created methodological limitations. In addition, the group format of the workshops allowed for informal peer support during the intervention period, providing an additional benefit. However, this meant that the researchers were unable to understand to what extent the benefits discussed by the participants were attributable to the workshop content or generated from the peer support of the group members. As a result of these limitations, the researchers are unable to draw conclusions or comparisons about the psychological benefits of each workshop intervention.

In addition, there were limitations related to the recruitment strategy. There were a high number of participants from health and social sciences backgrounds. Those with lower mental health literacy or with educational backgrounds outside of health could experience larger benefits from engaging. Additionally, there was a low number of men who took part in the interventions; this is a central issue. This could be due to the connotations of mental health and well-being, as research indicates that men are less likely to engage in mental health research or seek mental health support [49,50]. It is especially important that a diversity of views is included in pilot studies; therefore, further efforts should be made to diversify samples in future work so that they accurately reflect the wider doctoral student body. It is also important to consider the results within the context of the university geographically. The university where this study was based is situated in an affluent area in the south of England. Inequities have been demonstrated in doctoral student experience in the UK [51,52], with first-generation students and those from ethnic minority backgrounds

disproportionately experiencing mental health problems and difficulties transitioning into doctoral study. The results from this study should be generalized with caution due to the make-up of the current sample and the diversity in student bodies across the UK and internationally.

Within this study, attrition was an issue, especially within the mindfulness intervention. Reviews have documented how mindfulness-related randomized controlled trials suffer from relatively high attrition rates and higher drop-out rates than control counterparts [53]. One explanation could be the time-intensive nature of mindfulness-based interventions in comparison to passive control activities. It is unclear in this study why there was less uptake of this series of workshops in comparison to the other interventions, as those who did not attend also did not take part in the evaluation. Therefore, this affects the reliability of the findings, as only those who engaged throughout completed the evaluation. It is unknown whether the interventions had the same benefits for the engaged and non-engaged users. Those with poorer well-being are likely to benefit most from the mindfulness interventions [40]; however, these individuals are most likely to attrite [54]. This is a consideration for future researchers, reflecting on how to encourage the least engaged or those who did not complete the intervention to be involved in feedback and evaluation.

5. Conclusions

This article reports the piloting and qualitative evaluation of a range of novel interventions within a group of doctoral students from one UK university. These interventions sought to target an array of known factors that affect the mental health of doctoral students, including resilience to stress and social support availability. The participants reported several perceived benefits, including increased social support, clearer expectations, increased feelings of control, and improved coping strategies. The key challenges of recruitment, engagement, and attendance were discussed by the participants during the focus groups and qualitative surveys. This research provides evidence to support the development of larger-scale interventions to promote the mental health of doctoral students nationally. It also presents considerations and recommendations for supervisors, doctoral schools, and universities to support mentally healthy and successful doctoral research communities within UK higher education and beyond.

Author Contributions: Investigation, C.C.; writing—original draft preparation, C.C.; writing—review and editing, S.T., J.T., F.K., M.P., O.H. and J.H.; supervision, S.T., J.T. and F.K.; intervention delivery, S.T., O.H. and J.H. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board at Bournemouth University (Ethics ID 32854).

Informed Consent Statement: Informed consent was obtained from all participants in this study.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Hazell, C.M.; Niven, J.E.; Chapman, L.; Roberts, P.E.; Cartwright-Hatton, S.; Valeix, S.; Berry, C. Nationwide assessment of the mental health of UK Doctoral Researchers. *Humanit. Soc. Sci. Commun.* **2021**, *8*, 305. [[CrossRef](#)]
2. Metcalfe, J.; Day, E.; de Pury, J.; Dicks, A. *Catalyst Fund. Supporting Mental Health and Wellbeing for Postgraduate Research Students. Programme Evaluation*; Vitae and Universities UK: London, UK, 2020.
3. Levecque, K.; Anseel, F.; De Beuckelaer, A.; Van der Heyden, J.; Gisle, L. Work organization and mental health problems in PhD students. *Res. Policy* **2017**, *46*, 868–879. [[CrossRef](#)]
4. Evans, T.M.; Bira, L.; Gastelum, J.B.; Weiss, L.T.; Vanderford, N.L. Evidence for a mental health crisis in graduate education. *Nat. Biotechnol.* **2018**, *36*, 282. [[CrossRef](#)]

5. Byrom, N.; Dinu, L.; Kirkman, A.; Hughes, G. Predicting stress and mental wellbeing among doctoral researchers. *J. Ment. Health* **2020**, *31*, 783–791. [[CrossRef](#)] [[PubMed](#)]
6. Jackman, P.C.; Slater, M.J.; Carter, E.E.; Sisson, K.; Bird, M.D. Social support, social identification, mental wellbeing, and psychological distress in doctoral students: A person-centred analysis. *J. Furth. High. Educ.* **2022**, *47*, 45–58. [[CrossRef](#)]
7. Moss, R.A.; Gorczyński, P.; Sims-Schouten, W.; Heard-Laureote, K.; Creaton, J. Mental health and wellbeing of postgraduate researchers: Exploring the relationship between mental health literacy, help-seeking behaviour, psychological distress, and wellbeing. *High. Educ. Res. Dev.* **2022**, *41*, 1168–1183. [[CrossRef](#)]
8. Berry, C.; Niven, J.E.; Hazell, C.M. Personal, social and relational predictors of UK postgraduate researcher mental health problems. *BJPsych Open* **2021**, *7*, e205. [[CrossRef](#)]
9. Casey, C.; Harvey, O.; Taylor, J.; Knight, F.; Trenoweth, S. Exploring the wellbeing and resilience of postgraduate researchers. *J. Furth. High. Educ.* **2022**, *46*, 850–867. [[CrossRef](#)]
10. Gooding, P.; Crook, R.; Westwood, M.; Faichnie, C.; Peters, S. Social support resilience as a protective mental health factor in postgraduate researchers' experiences: A longitudinal analysis. *Stud. Grad. Postdr. Educ.* **2023**, *14*, 245–258. [[CrossRef](#)]
11. Milicev, J.; McCann, M.; Simpson, S.A.; Biello, S.M.; Gardani, M. Evaluating mental health and wellbeing of postgraduate researchers: Prevalence and contributing factors. *Curr. Psychol.* **2021**, *42*, 12267–12280. [[CrossRef](#)]
12. Berry, C.; Niven, J.E.; Hazell, C.M. Predictors of UK postgraduate researcher attendance behaviours and mental health-related attrition intention. *Curr. Psychol.* **2022**, *42*, 30521–30534. [[CrossRef](#)]
13. Casey, C.; Taylor, J.; Knight, F.; Trenoweth, S. Understanding the Mental Health of Doctoral Students. *Encyclopedia* **2023**, *3*, 1523–1536. [[CrossRef](#)]
14. Jackman, P.C.; Sanderson, R.; Haughey, T.J.; Brett, C.E.; White, N.; Zile, A.; Tyrrell, K.; Byrom, N.C. The impact of the first COVID-19 lockdown in the UK for doctoral and early career researchers. *High. Educ.* **2022**, *84*, 705–722. [[CrossRef](#)]
15. Dutta, S.; Roy, A.; Ghosh, S. An Observational Study to Assess the Impact of COVID-19 on the Factors Affecting the Mental Well-being of Doctoral Students. *Trends Psychol.* **2022**, *27*, 1–16. [[CrossRef](#)]
16. Byrom, N. COVID-19 and the Research Community: The challenges of lockdown for early-career researchers. *eLife* **2020**, *9*, e59634. [[CrossRef](#)]
17. Worsley, J.; Pennington, A.; Corcoran, R. *What Interventions Improve College and University Students' Mental Health and Wellbeing? A Review of Review-Level Evidence*; What Works Centre for Wellbeing: London, UK, 2020.
18. Hutchings, M. Improving doctoral support through group supervision: Analysing face-to-face and technology-mediated strategies for nurturing and sustaining scholarship. *Stud. High. Educ.* **2017**, *42*, 533–550. [[CrossRef](#)]
19. Lech, A.M.; van Nieuwerburgh, C.; Jalloul, S. Understanding the experience of PhD students who received coaching: An interpretative phenomenological analysis. *Coach. Int. J. Theory Res. Pract.* **2018**, *11*, 60–73. [[CrossRef](#)]
20. Marchand, T. Action learning in postgraduate research training. *Action Learn. Res. Pract.* **2017**, *14*, 83–95. [[CrossRef](#)]
21. Lane, L.G.; De Wilde, J. The impact of coaching doctoral students at a university in London. *Int. J. Evid. Based Coach. Mentor.* **2018**, *16*, 55–68. [[CrossRef](#)]
22. Panayidou, F.; Priest, B. Enhancing postgraduate researcher wellbeing through support groups. *Stud. Grad. Postdr. Educ.* **2021**; *ahead-of-print*. [[CrossRef](#)]
23. Mason, A.; Hickman, J. Students supporting students on the PhD journey: An evaluation of a mentoring scheme for international doctoral students. *Innov. Educ. Teach. Int.* **2019**, *56*, 88–98. [[CrossRef](#)]
24. Homer, S.R.; Solbrig, L.; Djama, D.; Bentley, A.; Kearns, S.; May, J. The Researcher Toolkit: A preventative, peer-support approach to postgraduate research student mental health. *Stud. Grad. Postdr. Educ.* **2021**, *20*, 398–468. [[CrossRef](#)]
25. O' Cathain, A.; Hoddinott, P.; Lewin, S.; Thomas, K.J.; Young, B.; Adamson, J.; Jansen, Y.J.F.M.; Mills, N.; Moore, G.; Donovan, J.L. Maximising the impact of qualitative research in feasibility studies for randomised controlled trials: Guidance for researchers. *Pilot Feasibility Stud.* **2015**, *1*, 32. [[CrossRef](#)] [[PubMed](#)]
26. Pearson, N.; Naylor, P.-J.; Ashe, M.C.; Fernandez, M.; Yoong, S.L.; Wolfenden, L. Guidance for conducting feasibility and pilot studies for implementation trials. *Pilot Feasibility Stud.* **2020**, *6*, 167. [[CrossRef](#)] [[PubMed](#)]
27. Parker, A.; Tritter, J. Focus group method and methodology: Current practice and recent debate. *Int. J. Res. Method Educ.* **2006**, *29*, 23–37. [[CrossRef](#)]
28. Braun, V.; Clarke, V.; Boulton, E.; Davey, L.; McEvoy, C. The online survey as a qualitative research tool. *Int. J. Soc. Res. Methodol.* **2021**, *24*, 641–654. [[CrossRef](#)]
29. Kram, K.E. *Mentoring at Work: Developmental Relationships in Organizational Life*; University Press of America: Glenview, IL, USA, 1985.
30. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [[CrossRef](#)]
31. Rajan-Rankin, S. Self-identity, embodiment and the development of emotional resilience. *Br. J. Soc. Work.* **2014**, *44*, 2426–2442. [[CrossRef](#)]
32. Stubb, J.; Pyhältö, K.; Lonka, K. Balancing between inspiration and exhaustion: PhD students' experienced socio-psychological well-being. *Stud. Contin. Educ.* **2011**, *33*, 33–50. [[CrossRef](#)]
33. Cornwall, J.; Mayland, E.C.; van der Meer, J.; Spronken-Smith, R.A.; Tustin, C.; Blyth, P. Stressors in early-stage doctoral students. *Stud. Contin. Educ.* **2019**, *41*, 363–380. [[CrossRef](#)]
34. Lahenius, K. Communities of practice supporting doctoral studies. *Int. J. Manag. Educ.* **2012**, *10*, 29–38. [[CrossRef](#)]

35. Butler-Rees, A.; Robinson, N. Encountering precarity, uncertainty and everyday anxiety as part of the postgraduate research journey. *Emot. Space Soc.* **2020**, *37*, 100743. [[CrossRef](#)]
36. Albertyn, R.; Bennett, K. Containing and harnessing uncertainty during postgraduate research supervision. *High. Educ. Res. Dev.* **2021**, *40*, 661–675. [[CrossRef](#)]
37. Dawson, A.F.; Brown, W.W.; Anderson, J.; Datta, B.; Donald, J.N.; Hong, K.; Allan, S.; Mole, T.B.; Jones, P.B.; Galante, J. Mindfulness-Based Interventions for University Students: A Systematic Review and Meta-Analysis of Randomised Controlled Trials. *Appl. Psychol. Health Well-Being* **2019**, *12*, 384–410. [[CrossRef](#)]
38. Galante, J.; Dufour, G.; Benton, A.; Howarth, E.; Vainre, M.; Croudace, T.J.; Wagner, A.P.; Stochl, J.; Jones, P.B. Protocol for the Mindful Student Study: A randomised controlled trial of the provision of a mindfulness intervention to support university students' well-being and resilience to stress. *BMJ Open* **2016**, *6*, e012300. [[CrossRef](#)] [[PubMed](#)]
39. Galante, J.; Dufour, G.; Vainre, M.; Wagner, A.P.; Stochl, J.; Benton, A.; Lathia, N.; Howarth, E.; Jones, P.B. A mindfulness-based intervention to increase resilience to stress in university students (the Mindful Student Study): A pragmatic randomised controlled trial. *Lancet Public Health* **2018**, *3*, e72–e81. [[CrossRef](#)]
40. Galante, J.; Stochl, J.; Dufour, G.; Vainre, M.; Wagner, A.P.; Jones, P.B. Effectiveness of providing university students with a mindfulness-based intervention to increase resilience to stress: 1-year follow-up of a pragmatic randomised controlled trial. *J. Epidemiol. Community Health* **2021**, *75*, 151–160. [[CrossRef](#)] [[PubMed](#)]
41. Barry, K.; Woods, M.; Martin, A.; Stirling, C.; Warnecke, E. A randomized controlled trial of the effects of mindfulness practice on doctoral candidate psychological status. *J. Am. Coll. Health* **2019**, *67*, 299–307. [[CrossRef](#)]
42. Kabat-Zinn, J. Mindfulness has huge health potential—but McMindfulness is no panacea. *Guardian* **2015**, *20*, 15.
43. Schultchen, D.; Terhorst, Y.; Holderied, T.; Stach, M.; Messner, E.-M.; Baumeister, H.; Sander, L.B. Stay present with your phone: A systematic review and standardized rating of mindfulness apps in european app stores. *Int. J. Behav. Med.* **2021**, *28*, 552–560. [[CrossRef](#)]
44. Kirmayer, L.J. Mindfulness in cultural context. *Transcult. Psychiatry* **2015**, *52*, 447–469. [[CrossRef](#)] [[PubMed](#)]
45. McSpadden, E. I'm Not Crazy or Anything: Exploring Culture, Mental Health Stigma, and Mental Health Service Use among Urban Community College Students. *Community Coll. J. Res. Pract.* **2022**, *46*, 202–214. [[CrossRef](#)]
46. Maeshima, L.S.; Parent, M.C. Mental health stigma and professional help-seeking behaviors among Asian American and Asian international students. *J. Am. Coll. Health* **2022**, *70*, 1761–1767. [[CrossRef](#)] [[PubMed](#)]
47. Craig, P.; Dieppe, P.; Macintyre, S.; Michie, S.; Nazareth, I.; Petticrew, M. *Developing and Evaluating Complex Interventions*; Medical Research Council: Swindon, UK, 2011.
48. Eldridge, S.M.; Chan, C.L.; Campbell, M.J.; Bond, C.M.; Hopewell, S.; Thabane, L.; Lancaster, G.A. CONSORT 2010 statement: Extension to randomised pilot and feasibility trials. *Pilot Feasibility Stud.* **2016**, *2*, 64. [[CrossRef](#)]
49. Choi, I.; Milne, D.N.; Glozier, N.; Peters, D.; Harvey, S.B.; Calvo, R.A. Using different Facebook advertisements to recruit men for an online mental health study: Engagement and selection bias. *Internet Interv.* **2017**, *8*, 27–34. [[CrossRef](#)] [[PubMed](#)]
50. Oliffe, J.L.; Rossnagel, E.; Seidler, Z.E.; Kealy, D.; Ogrodniczuk, J.S.; Rice, S.M. Men's depression and suicide. *Curr. Psychiatry Rep.* **2019**, *21*, 103. [[CrossRef](#)]
51. Arday, J. Understanding mental health: What are the issues for black and ethnic minority students at university? *Soc. Sci.* **2018**, *7*, 196. [[CrossRef](#)]
52. Mateos-González, J.L.; Wakeling, P. Exploring socioeconomic inequalities and access to elite postgraduate education among English graduates. *High. Educ.* **2022**, *83*, 673–694. [[CrossRef](#)]
53. Nam, S.; Toneatto, T. The influence of attrition in evaluating the efficacy and effectiveness of mindfulness-based interventions. *Int. J. Ment. Health Addict.* **2016**, *14*, 969–981. [[CrossRef](#)]
54. Nunan, D.; Aronson, J.; Bankhead, C. Catalogue of bias: Attrition bias. *BMJ Evid.-Based Med.* **2018**, *23*, 21–22. [[CrossRef](#)]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.