Promoting psychological wellbeing in doctoral students: A qualitative study adopting a positive psychology perspective

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Abstract

Purpose: Concerns about psychological wellbeing in doctoral students has grown in recent years. The aim of this study was to explore qualitatively doctoral students' perceptions of factors that promoted their psychological wellbeing during the doctoral journey.

Design: Nine recent doctoral graduates at an English university participated in the study. Participants recalled their experience and psychological wellbeing during the doctoral journey via a life grid and semi-structured interview. The life grids were visually inspected to identify high points in psychological wellbeing, while the interview data were analysed thematically.

Findings: Our analysis produced seven themes representing factors that participants described during periods of better psychological wellbeing: accomplishments; intrinsic rewards; self-efficacy; comprehension and understanding; supervisor support; wider support network; and self-care and lifestyle.

Originality/value: By adopting a positive psychology approach and exploring qualitatively factors that promoted psychological wellbeing in doctoral students, this article demonstrates the utility of approaching research on doctoral students' psychological wellbeing from a positive psychology perspective. Findings are discussed in relation to the extant literature, and future directions for research are outlined.

Keywords: mental health; postgraduate research; higher education; doctoral education; PhD; life grid; supervisor; self-efficacy.

Introduction

In recent years, psychological wellbeing (PWB) in doctoral students has attracted considerable international attention in the media (e.g., Woolston, 2019) and across the higher education sector (e.g., Metcalfe *et al.*, 2018). This growth in interest is reflective of recent evidence indicating substantive concerns with PWB in doctoral students (e.g., Evans *et al.*, 2018; Levecque *et al.*, 2017). Results from a large-scale study in Belgium (Levecque *et al.*, 2017), for example, found that 51% of doctoral students ($N = 3,659$) were categorised as being at risk of experiencing psychological distress. Furthermore, research in graduate students in the USA ($N = 2,279$; 90% doctoral students) indicated that the graduate students were six times more likely to experience anxiety and depression compared to the general population. Given that poor PWB has previously been linked to increased likelihood of dropout and interruption of studies (Anttila *et al.*, 2015; Pyhältö *et al.*, 2012), understanding how to promote doctoral students' PWB is key. Within this context, the current study sought to add to the doctoral education literature by exploring qualitatively doctoral students' perceptions of factors that promoted PWB during the doctoral journey.

Psychological Wellbeing

The term wellbeing has been defined heterogeneously across the doctoral education literature (Schmidt and Hansson, 2018), but in the current study, PWB was defined as the presence of markers of psychological adjustment, such as positive affect, improved functioning, and high self-esteem, as well as the absence of indicators of psychological maladjustment, such as negative affect and psychopathological sequelae (Houben *et al.*, 2015). Psychological wellbeing has been conceptualised in a variety of ways, with alternative theoretical perspectives placing different levels of emphasis on hedonic (i.e., affective) and eudaemonic (i.e., human functioning) aspects of wellbeing (Deci and Ryan, 2008). The

model of psychological wellbeing developed by Ryff (1989) emphasised positive psychological functioning and, therefore, adopted a eudaemonic perspective. According to Ryff (1989), psychological wellbeing consisted of six components: autonomy; environmental mastery; self-acceptance; relationships; life purpose; and personal growth. Together, these six dimensions are theorised to constitute PWB (Ryff, 1989). Using a similar eudaemonic approach, Ryan and Deci's (2001) basic psychological needs theory posited that wellbeing is a function of satisfying the three basic needs of autonomy, competence, and relatedness. Drawing on both hedonic and eudaemonic perspectives, Seligman (2011) proposed the PERMA model as a framework consisting of five components, which, when combined, constitute overall wellbeing and facilitate human flourishing. The PERMA model consisted of: positive emotions; engagement; positive relationships; meaning; and accomplishment. Although the eudaemonic and hedonic dimensions of wellbeing contrast and the emphasis on these dimensions varies across different conceptual models, evidence indicates that the combination of these dimensions is associated with greatest wellbeing (Huta and Ryan, 2010).

Psychological Wellbeing in Doctoral Students

Researchers have examined PWB in doctoral students across several continents and at different stages of the doctoral journey (e.g., Barry *et al.*, 2018; Cornwall *et al.*, 2019; Levecque *et al.*, 2017). Upon evaluating this body of evidence and comparing it to our definition of PWB (Houben *et al.*, 2015), it appears that although a number of recent studies have used measures of psychological *adjustment* (e.g., mental wellbeing - Byrom *et al.*, 2020; Marais *et al.*, 2018), much of the research on PWB in doctoral students has investigated indicators of psychological *maladjustment* (e.g., stress, anxiety). That is, research has centred primarily on understanding negative symptoms of PWB and placed less

1 focus on its positive indicators (see Hazell *et al.*, 2020; Jackman *et al.*, 2021 for systematic
2 reviews). For instance, substantive evidence has accumulated in doctoral students on:
3 anxiety (e.g., Pyhältö *et al.*, 2012); burnout (e.g., Broc *et al.*, 2020); depression (e.g., Barry *et*
4 *al.*, 2018); distress (e.g., Levecque *et al.*, 2017); exhaustion (e.g., McAlpine *et al.*, 2020); and
5 stress (e.g., Anttila *et al.*, 2015). Arguably, this focus on indicators of psychological
6 maladjustment in doctoral students is consistent with much of the discourse surrounding
7 doctoral education, with references often made to the ‘hardships’ of doctoral study
8 (Mantai, 2017, p. 642) and the importance of ‘surviving’ (Karp, 2009).

9 Although some evidence suggests doctoral students might be at greater risk of lower
10 PWB compared to general population samples (Evans *et al.*, 2018; Levecque *et al.*, 2017),
11 positive experiences and “ups” have also been reported during the doctoral journey
12 (Schmidt and Umans, 2014). Furthermore, researchers have highlighted the need for
13 additional studies on positive aspects of the doctoral education experience (Beasy *et al.*,
14 2019), which have received less attention to date. Therefore, while we acknowledge that
15 examining doctoral student PWB by focusing on signs of psychological maladjustment is
16 important, we suggest that it is equally valuable to understand what promotes *higher* PWB
17 in doctoral study to develop a more holistic understanding of PWB in doctoral students.

18 Previous studies on doctoral students have reported that PWB is positively
19 associated with: viewing the academic community as a source of empowerment (Stubb *et*
20 *al.*, 2011); work engagement (Caesens *et al.*, 2014); being an active agent in the scholarly
21 community (Pyhalto and Keskinen, 2012); viewing the thesis as a process (Stubb *et al.*,
22 2012); receiving sufficient feedback (Anttila *et al.*, 2015); and social support and interactions
23 (Cornér *et al.*, 2017; Cornwall *et al.*, 2019). However, most of these studies appear to have
24 operationalised PWB by using measures of psychological maladjustment (e.g., less stress).

1 The assumption that lower psychological maladjustment alone equates to better PWB may
2 be problematic, however, as the absence of psychological distress does not necessarily infer
3 the presence of positive indicators of PWB (du Plooy *et al.*, 2019). Thus, factors inversely
4 associated with indicators of psychological maladjustment in doctoral students might not be
5 identical to those that are indicative of psychological adjustment. Relatedly, although
6 evidence has accumulated on stressors (Cornwall *et al.*, 2019) and challenges during
7 doctoral study (Barry *et al.*, 2018; Pyhältö *et al.*, 2012), the mitigation of these “risk” factors
8 in isolation might not necessarily lead to improved PWB. Therefore, to generate a deeper
9 and more holistic understanding of PWB in doctoral students, understanding what
10 contributes to the presence of markers of psychological adjustment *and* absence of
11 indicators of psychological maladjustment could be valuable.

12 **The Current Study**

13 The field of positive psychology emerged at the turn of the millennium with the goal
14 of triggering a shift away from focusing on repairing the negatives in life and towards
15 understanding the positive qualities that allow individuals, communities, and societies to
16 flourish and thrive (Seligman and Csikszentmihalyi, 2000). Thus, from a positive psychology
17 perspective, research on PWB should attempt to understand factors that promote greater
18 PWB (Seligman, 2011), and, therefore, consider indicators of psychological maladjustment
19 *and* psychological adjustment (Houbens *et al.*, 2015). Given the potential benefits of positive
20 psychology in higher education (Williams *et al.*, 2018), approaching the study of PWB in
21 doctoral students from this perspective could help to advance understanding in this area.
22 Therefore, the aim of this study was to explore qualitatively doctoral students’ perceptions
23 of factors that promoted their PWB during the doctoral journey.

Method

Design and Approach

This qualitative study was approached from a post-positivist perspective. This philosophical perspective adheres to the view that some form of objective social reality exists, but the methods used to understand that world are unavoidably value-laden, theory-laden, and context-dependent, thus preventing that reality from being fully understood (Fox, 2008). To generate insights into experiences of PWB in doctoral students in the context of the doctoral journey, we adopted an integrated qualitative approach (Chamberlain *et al.*, 2011), which involved combining the life grid method and in-depth, semi-structured interviews to elucidate doctoral students' perceptions about factors that promoted their PWB over time. Prior to recruiting participants, we piloted the life grid method by interviewing one another. This process enabled us to critically evaluate the method in advance of data collection and allowed us to engage in reflexive thinking to understand how our own identities and experiences could impact the research process (Lazard and McEvoy, 2020). As doctoral graduates and current doctoral supervisors, we shared some "insider" knowledge insofar as we understood the process of doctoral education but remained aware of the need to ensure that our own experiences were not amalgamated with those of the participants.

Participants and Sampling

Nine recent doctoral graduates aged 27-54 (female $n = 5$, male $n = 4$; M age = 36.33 years) from a single university in England (M time since completion = 14 months) took part. The sample comprised full-time (M timeframe = 49 months) and part-time (M timeframe = 90 months) social sciences graduates. All participants completed their doctorate by submitting a thesis and passing a viva voce examination (viva), with five participants

successfully transferring from being registered as Master of Philosophy (MPhil) to Doctor of Philosophy (PhD) students during their journeys (Figure 1). The transfer from MPhil to PhD is an internal examination process (i.e., written submission and viva) that allows doctoral students initially enrolled on an MPhil degree to upgrade to a PhD degree by satisfying the requirements at that stage. Eight participants completed research doctorates (PhD), while one participant (Participant 8) completed their thesis as part of a professional doctorate. The research doctoral programme requires students to conduct a research project with supervision and compose a thesis, with this process typically taking 3-4 years and 6-8 years for full-time and part-time students, respectively. To align with other participants, only data pertaining to the thesis phase of the professional doctoral graduate's programme were reported. The decision to include this graduate was taken on the basis that the thesis phase for this participant was comparable to the other participants, as they were required to undertake an independent research project, produce a thesis, and complete a viva, which together took four years to complete.

Procedure

Ethical approval was obtained from a university research ethics committee. Two methods were used to circulate information about the study: social media posts and posters on a university campus. All participants became aware of the study via social media posts. The inclusion criteria required participants to have received confirmation of their doctoral degree at the university within two years of data collection to aid recall. After contacting the research team, face-to-face interviews were organised with the first author. Participants provided informed consent prior to commencing the interview. Interviews lasted 81 minutes on average (range = 61-101 minutes), were digitally recorded, and were transcribed verbatim. Each interview concluded with a debrief, where participants were provided with

1 mental health helpline information. All participants received a £10 voucher as compensation
2 for their time.

3 **Data Collection**

4 Data were collected through a combination of the life grid method (LGM) and semi-
5 structured interviews. The LGM involves soliciting information about events that have
6 occurred over one's lifetime and inserting this into a visual grid (Harrison *et al.*, 2011).
7 Initially used in research on chronic diseases (Blane, 1996), the LGM can enrich qualitative
8 interview data by: enhancing participant recall (Berney and Blaine, 1997); improving
9 participant-researcher rapport and participant engagement (Parry *et al.*, 1999); and
10 increasing participant control over the information shared, and the pace at which they
11 disclose sensitive issues if they wish to do so (Wilson *et al.*, 2007).

12 ***Life Grid***

13 The life grid was printed on an A3 sheet that contained three horizontal rows: (i)
14 doctoral journey; (ii) personal journey; and (iii) PWB. To give the participants control over
15 the information shared (Parry *et al.*, 1999) and minimise issues with disclosing sensitive
16 information (Wilson *et al.*, 2007), the life grid was completed by the participants. First, the
17 life grid was introduced at the start of the interview and participants were asked to create a
18 timeline of key milestones (e.g., submission) and other relevant doctorate-related events
19 that occurred from the beginning to the end of their doctoral journey. Second, participants
20 added information about any personal circumstances they felt were relevant to their PWB
21 during this time. Finally, participants rated their PWB throughout their doctoral journey on a
22 continuum that ranged from 'low' to 'high' by drawing a free-hand line. Consistent with
23 extant literature (e.g., Houbens *et al.*, 2015), PWB was defined as a combination of feeling

good and functioning effectively. Participants could also add other relevant information during the interview. The life grid ratings of PWB were digitised using WebPlotDigitizer.

Interview Guide

A semi-structured interview approach was adopted. Initially, participants were asked to describe their thoughts and feelings across their entire doctoral journey. Using the ratings of PWB on the life grid as a reference, questions were then asked to develop an understanding of factors they perceived contributed to the 'high points' in PWB depicted in the life grids (e.g., 'Can you describe what contributed to your PWB at these points?'). In addition to structured questions, probing questions were used to acquire further information on important areas that arose.

Data Analysis

A team approach, involving both authors, was utilised to guide the analysis. Initially, we analysed the data prior to synthesising our interpretations (see Trustworthiness). The analysis involved continual iterations between the life grid and interview data to develop a more comprehensive understanding of the participants' PWB at high points in their doctoral journey, in line with recommendations for integrated qualitative research (Chamberlain *et al.*, 2011). Initially, we each familiarized ourselves with the data through the process of indwelling by reading each transcript twice (Maykut and Morehouse, 2002). This was followed by a visual inspection of the life grids to identify high points in each participant's doctoral journey. We then analysed the transcripts using thematic analysis (Braun and Clarke, 2019). Initially, we engaged with the data to identify quotes that described factors that promoted PWB to form *codes*. Once data for each participant were analysed, we met to discuss our interpretations. Next, we collated and sorted similar codes to form more abstract *higher-order themes*. Whilst repeating this process to generate the final *themes*, we

drew on abductive thinking (Danermark *et al.*, 2019). Therefore, rather than setting aside our pre-existing theoretical knowledge, our knowledge of different theoretical perspectives on PWB (e.g., Ryan and Deci, 2001; Ryff, 1989; Seligman, 2011) contributed to the final analysis (Timmermans and Tavory, 2012). Finally, the findings were integrated and developed into a written account.

Trustworthiness

Trustworthiness is a term employed by qualitative researchers to describe steps taken to improve the rigor and quality of their work (Jones *et al.*, 2013). To improve trustworthiness, we used several strategies. As life grids can help to enhance recall (Parry *et al.*, 1999), the integration of this tool sought to help participants to chronologically recall their doctoral journey experience. Additionally, we engaged in peer debriefing throughout the process of data analysis through formal meetings and informal discussions (Creswell and Miller, 2000). The aim of this process was to encourage us to critically evaluate and challenge each other's interpretations of the data, which led to further refinement of our analysis.

Findings

This study aimed to explore qualitatively doctoral students' perceptions of factors that promoted their PWB during the doctoral journey. All participants experienced 'highs' and 'lows' during the doctoral journey, with the high points - the focus of the current study - typically reported during the early and latter stages of the doctoral journey for most participants (Figure 1). We generated seven themes to capture perceived factors that helped to promote PWB in the participants in their doctoral journey (Table 1). Each of these themes are presented in the following sub-sections, with *higher-order themes* italicised in text. Participant quotes are used to facilitate the voice of participants. Where relevant, the

stage at which participants reported highs in their PWB is included in the narrative to add context and permit integration of the interview and life grid data.

[INSERT FIGURE 1 HERE]

[INSERT TABLE 1 HERE]

Accomplishments

Highs in PWB coincided with successes along the doctoral journey. *Positive outcomes and experiences* typically included: receiving positive feedback from supervisors; passing the transfer viva; submitting the thesis; and passing the viva. Such instances were articulated by several participants:

It peaked again around submission. I was happy with what I'd done and that was always important to me. I was happy with what I was submitting...it was more buoyant at that stage. (Participant 8)

When I went for the viva and I passed, all those things [worries] disappeared and I was now on a high, looking forward to the graduation day. (Participant 1)

For participants who completed a transfer viva during the early stages of their programme, receiving *positive feedback from other academics* helped to promote positive PWB changes. Obtaining positive feedback from academics beyond their supervisory team was closely tied to another theme, self-efficacy, as outlined by Participant 7:

There was some sort of validation that what you'd already done was along the right lines. It gave me confidence at the time; confidence in [knowing] that what I'd previously done was right, and confidence in terms of my ability to be able to justify why and how, and to do that in a more academic setting with other academics.

Participant 3 explained how highs in the early and middle stages of their journey were related to *making progress*:

My data collection went really well. I organised focus groups and everyone turned up. I didn't really have any issues in the data collection phase, which, quite often, a lot of people face. I was really lucky at that point because there were a number of things that I identified that could go wrong, but things went quite smoothly at that point, which then gave me a head start on the rest of it.

Similarly, participants highlighted the importance of *building and maintaining momentum*.

This finding was expressed most saliently by part-time students, who often found it more difficult to build momentum. Nonetheless, finding ways to generate momentum through consistent work patterns was helpful for PWB. For instance, Participant 5 described their experience during the high in the middle of their journey:

We talk about momentum and when you hit that point, it's almost like so many other things started to come together. I think that was, in part, what was happening with the research. It had got to a point where things were moving, I was getting to grips with it, and I was starting to fit it into my routine better, and my work-life [balance] was okay.

Before finishing, however, it should be noted that progress did not *always* produce greater PWB. For instance, at a later stage in their journey, Participant 5 also said:

Strangely, although my lowest points were at this [later] stage, there was still an awful lot of progress and an awful lot of work completed, which might not make much sense, because you tend to think that [because] mood was low, I couldn't work. But I think at that point I was almost like "I have got to carry on regardless".

1 Similar lows in PWB were also reported during the later writing stage for more than half of
2 the participants. This highlights the importance of guarding against the assumption that
3 progress always promotes PWB and underlines how PWB should be conceptualised as
4 functioning effectively while also feeling good (Deci and Ryan, 2008).

5 **Intrinsic Rewards**

6 The satisfaction of intrinsic motives and, subsequently, the realisation of intrinsic
7 rewards was also reported during positive phases of PWB. When asked what contributed to
8 a high in their PWB, Participant 9 explained that they were *enjoying the process*: “This high?
9 [points to early stage] I was really enjoying it. I like people and I was really enjoying meeting
10 people and hearing their stories and feeling that I could do something with them that could
11 have an impact”. Additionally, participants articulated how they felt *engaged with the work*
12 and a sense of *autonomy* during positive periods. For example, Participant 2 commented on
13 this in the opening period of their doctoral journey:

14 I was enjoying the work. I was quite engaged with it. Things were fine during those
15 times...I really enjoyed the fact that I was free to get on with my own research; I was
16 free to do my own thing and I was free to explore a new area and take that forward
17 by myself. I found that really good, healthy, and positive.

18 Overall, this theme demonstrates the value of intrinsic rewards for PWB.

19 **Comprehension and Understanding**

20 Several participants explained that upturns in PWB were connected to moments
21 when participants reached a new level of comprehension and started to feel that their
22 research was “making sense”. For example, at the midpoint of their journey, Participant 5
23 outlined that their initial approach to data analysis was not yielding the desired outcomes,
24 but that a changed perspective helped them feel that *suddenly things made sense*: “I started

1 looking into my data again and realised that something wasn't adding up. That's when I
2 started speaking to other people...it was almost a bit of a light bulb, eureka-type moment of
3 going, '*that makes sense*'. During a similar point in their journey, Participant 9 explained
4 how the increase in their PWB happened when they came across a new piece of literature,
5 which helped them in *finding a new lens to understand their work*: "I found a little reference
6 and opened a Pandora's box in terms of new ideas and ways of thinking about the world
7 that helped me to understand all of this stuff in the field". Additionally, participants
8 explained that having *clear expectations*, for example, about what progress they needed to
9 make ahead of assessment points, helped to protect their PWB. In describing their PhD
10 experience, Participant 7 remarked:

11 I think it was a very structured process and I think that that structure helped...I knew
12 what I had to do. I knew what [goals] I had to hit. I knew what I had to write up and I
13 think that structure helped me to do it.

14 Thus, clarifying expectations in the doctoral journey helped to protect against ambiguity
15 and, therefore, promoted PWB.

16 **Self-Efficacy**

17 Upturns and highs in PWB often coincided with improvements in participants' belief
18 about their abilities. During such periods, participants described *feeling confident in their*
19 *ability*. In some instances, this confidence referred to the participant's belief in themselves
20 as researchers, as Participant 1 pointed out: "In the first phase when I started, I had a good
21 supervisory team, and I was happy. I had just finished an MPhil and I was quite confident".
22 Additionally, this feeling of confidence could cohere around perceptions of their ability to
23 successfully complete their degree. Participant 4 explained that the positive shift in their
24 PWB towards the end of their journey stemmed from receiving positive feedback from their

supervisor, which helped them to believe PhD success was achievable: “When they said ‘it was good’, I was like, ‘oh, I really didn’t think it was good.’ Then I suddenly I thought, ‘it is possible, and I can do it’”. Although examination points (i.e., transfer viva and viva) faced by participants were often described as more stressful in nature, PWB was generally higher in those who reported *confidence at assessments points*. In describing the closing stages of their journey, Participant 7 stated:

I don’t think I felt particularly stressed about writing, finishing up, or going into the viva, because I think I was quite confident that throughout the whole PhD process, there was a reason behind everything that I’d done and I could justify everything I did.

Overall, knowledge of competency and trust in one’s decision making were important sources of confidence, which promoted PWB during the doctoral journey.

Supervisor Support

A clear feature throughout the participant accounts was the importance of supervisors to navigate the challenges of the doctoral journey. Highs in PWB were underpinned by support from supervisors. This support could range from *esteem support*, which was characterised by words of encouragement that built confidence, to acts of *emotional support*, which helped participants to manage dips in their PWB. For example, Participant 7 explained the importance of this support at a difficult time in their personal life:

At this point [final low point], it [PWB] was probably as low as it could be. I mean that was obviously nothing to do with the PhD that caused that, but at this point, I would praise my supervisors highly because they never put any pressure on me to do the PhD at this point. They were very supportive and clear that I should deal with the

1 personal issues before coming back and doing the PhD. That was really good, how
2 supportive they were and how open and willing they were to respond to my issues...I
3 think their response to that definitely helped me at the time.

4 Furthermore, participants outlined that *responsive and accessible supervisors* were
5 instrumental for their PWB, as this allowed participants to sustain their progress: “The
6 feedback came very swiftly, which then meant my momentum kept going. There wasn’t this
7 drop in productivity; it meant you could actually stay on top of things” (Participant 5).
8 Hence, a clear finding was the importance of holistic supervisory support.

9 **Wider Support Network**

10 Accessing support from people beyond the supervisory team was reported during
11 periods of heightened PWB. Participant 3 commented that *support from family and friends*
12 was integral to improving their PWB after a dip caused by personal circumstances in the
13 early stage of their journey: “I had a really good support network, so I had really good
14 friends”. More generally, this wider support network was considered to be an important
15 avenue to share one’s experiences, during both the negative and positive times in the
16 journey: “I think friends and family are the most important thing to get you through,
17 because if you're having a bad day, or a good day, or any type of day, they’re the people
18 that you go to tell whatever the news is” (Participant 4). During highs and upturns in PWB,
19 participants described the value of *support from peers* and *identifying with other doctoral*
20 *students*, as exemplified in these quotes:

21 It never occurred to me that I might have something in common with other
22 PhD students. Then I went to a peer group project and that suddenly became
23 really clear. That more positive way of thinking [during the middle phase] was

1 a result of some of that learning and realising that everyone is in the same
2 boat. (Participant 9)

3 Being around other PhD students, that helped me. Even though we may be
4 doing different subjects, we're still roughly going through the same process
5 and, on quite a few occasions, facing similar challenges. Although what we
6 were doing was different, how we felt towards doing it was similar. To share
7 those experiences and to talk about those was helpful. (Participant 7)

8 Thus, forging connections and sharing experiences with other students "like them" helped
9 participants to recognise that the challenges of doctoral study were not unique to their
10 personal experience.

11 **Self-Care and Lifestyle**

12 A final key factor described during positive periods of PWB was self-care and lifestyle
13 management. A salient finding across all students, especially part-time students, was the
14 value of maintaining a *good work-life balance*. Participants spoke about the importance of
15 preserving time for other areas and individuals in their life: "I would try to keep my
16 weekends free because I didn't feel it was fair on my children. I would always have a chunk
17 of time in the summer as well where I would take my leave" (Participant 8). Similarly, by
18 consistently protecting time to work on their doctoral research, Participant 6 explained how
19 *managing their workload effectively* helped throughout their journey:

20 I liked project-managing my week to ensure that everything was done as efficiently
21 as possible, so that it didn't compromise my work-life balance...I dedicated one day a
22 week, every single week, to my PhD for six years and that's how I did my PhD.
23 Nothing changed. I had no evening or weekend work.

1 The importance of being allowed to adopt a *flexible approach* to doctoral study also
2 facilitated better PWB, as outlined by Participant 3: “I was flexible with where I worked, so it
3 was really good. I could go on holiday when I wanted. I could manage my data collection
4 around life events that fitted with my life”. To prevent their studies from becoming all-
5 consuming, participants explained that *pursuing other interests* offered a welcome release
6 from studying: “Being able to step away from the PhD regularly definitely helped me. Being
7 able to participate in sport allowed me to forget about the PhD for a while” (Participant 7).
8 Additionally, *taking breaks* appeared to offer respite from the demands of doctoral study:
9 “This one [high] was a holiday, it was a very nice holiday and a chance to get away...I don’t
10 think we had particularly good Wi-Fi, so I didn’t go on my laptop. I didn’t even turn on my
11 laptop actually. That felt good” (Participant 4). Likewise, Participant 6 explained that the rise
12 in their PWB during the middle phase of their journey stemmed from taking a break away
13 from their research:

14 I needed six months just to reflect and not do anything on it, just give yourself a
15 brain-break from it because it can be quite intensive, doing a PhD...Sometimes
16 you’re stuck in your PhD and you don’t realise that you need a space to reflect and
17 move away from it for it to be better in the long run...You’re training your mind,
18 you’re filling it with knowledge, you’re filling it with words, filling it with reading, but
19 you need to take a step back and somehow create a bit of space in your grey matter
20 for reflecting and thinking, “is that right?” or “is that what I want to be doing?”

21 Therefore, this example suggests that although taking a break was not necessarily helpful
22 for making academic progress in the short-term, being able to take time away from the PhD
23 was beneficial in the long-term, both in terms of academic progress and PWB. Finally, the

only self-funded student (Participant 1) reported having *no financial worries* during the early stage of their doctoral journey, which was characterised by heightened PWB.

Discussion

The aim of the study was to explore qualitatively doctoral students' perceptions of factors that promoted their PWB during the doctoral journey. By adopting a positive psychology perspective and collecting data through the LGM and interviews, our findings extend understanding of PWB in doctoral students by focusing on positive aspects of the doctoral student experience and offering rich accounts of factors perceived to promote PWB. Therefore, findings of the current study can help to develop a more holistic understanding of PWB in doctoral students and, in doing so, begin to answer calls for researchers to direct further attention towards positive aspects of the doctoral student experience (Beasy *et al.*, 2019).

Consistent with conceptualisations of PWB (Ryan and Deci, 2001; Ryff, 1989; Seligman, 2011), positive relationships within the academic community appeared to be instrumental to doctoral students' PWB. As regard relationships with supervisors, the findings reinforce the importance of pastoral care - alongside intellectual support - in research supervision (Lee, 2008), and highlight the benefits of this for doctoral students' PWB. Our evidence suggests that supervisors should strive to be accessible, offer timely and constructive feedback, and provide holistic support. Research has previously labelled supervision in doctoral education as a: stressor (Cornwall *et al.*, 2019); challenge (Barry *et al.*, 2018); or problem (Pyhältö *et al.*, 2012). Findings in the current study, however, reinforce evidence demonstrating the benefits of positive supervisory relationships for PWB in doctoral students (e.g., Al Makhamreh and Stockley, 2019; Hazell *et al.*, 2020; Hunter and Devine, 2016). Therefore, policies that encourage the development of supportive doctoral

1 supervisor-student relationships could be valuable. For instance, universities could educate
2 supervisors on the characteristics of a supportive supervisory relationship and ensure that
3 supervisors have adequate time and skills to support doctoral students.

4 Furthermore, the present study indicates that it is important for doctoral students to
5 have access to a wider support network to improve and maintain their PWB. Current
6 findings extend past work on the potential role of peer support for stress reduction (Sufyan
7 and Ali Ghouri, 2020) by suggesting that support from peers also promotes PWB, thus
8 reinforcing recent work highlighting the potential benefits of peer support networks for
9 doctoral students (Homer *et al.*, 2021; Panayidou and Priest, 2021). Another noteworthy
10 peer-related finding concerned the value participants placed on having something in
11 common with other doctoral students. This idea appears to resonate with the concept of
12 social identity, which is defined as the sense of self people have of themselves based on
13 their group memberships (Tajfel, 1978). Although the social identity approach has received
14 limited attention in research on doctoral students' PWB to date, evidence from
15 organisational contexts indicates that social identity is positively related to PWB (Steffens *et*
16 *al.*, 2017). As such, further research that adopts a social identity approach to investigate
17 PWB in doctoral students is warranted.

18 The participants explained that accomplishments and self-efficacy were helpful for
19 promoting their PWB. Thus, our findings share theoretical intersections with
20 conceptualisations of PWB on the basis that previous models have included dimensions such
21 as accomplishment (Seligman, 2011), environmental mastery (Ryff, 1989), and competence
22 (Ryan and Deci, 2001). A recent large-scale, cross-sectional questionnaire study reported
23 significant, moderate, and inverse relationships between self-efficacy and depression,
24 stress, and illness symptoms in doctoral students (Sverdlik and Hall, 2020). While the

current study findings are drawn from a small sample using qualitative methods, our evidence extends that previous work, which focused on symptoms of psychological maladjustment, by suggesting that self-efficacy could also be associated with the presence of positive indicators of PWB. To build on these promising insights, further research that quantitatively tests these findings could be beneficial.

Finally, the current study demonstrates the importance of engagement in self-care practices and lifestyle management. The benefits of self-care revealed in our cohort of doctoral students are consistent with previous quantitative research in students on clinical psychology doctoral programmes, which found that self-care practices were significantly associated with lower stress and negative affect, as well as higher flourishing and positive affect (Zahniser *et al.*, 2017). Given that self-care is considered to be the responsibility of both doctoral students and their institutions (Kumar and Cavallaro, 2018), the implications of findings in the current study are two-fold: first, doctoral students should be aware of the importance of self-care and develop strategies to protect and maintain their psychological well-being, and second, institutions could develop initiatives that promote a culture of self-care and support doctoral students to proactively manage their PWB. In line with calls for early intervention approaches to improve PWB in doctoral students (Metcalf *et al.*, 2018), we suggest that the transition period at the beginning of doctoral programmes could offer a prime opportunity for institutions to intervene and encourage the adoption of such self-care practices. In turn, this could potentially help doctoral students to mitigate issues with PWB *before* rather than *after* they arise. Furthermore, the development of self-care support mechanisms could be tailored for part-time doctoral students given the unique challenges (e.g., managing work alongside study) faced by this cohort.

Strengths, Limitations, and Future Directions

Strengths of this study include: the novel methodological approach; use of trustworthiness strategies; adoption of a positive psychology approach; and defining PWB as a construct that incorporates both the presence of psychological adjustment *and* the absence of psychological maladjustment. Despite these strengths, however, several limitations should be noted. First, as the sample consisted of doctoral graduates at a single institution, the findings might not reflect the experiences of all doctoral students. Second, as ratings of PWB were provided through freehand drawings in relation to estimated timelines, these ratings could lack precision. Furthermore, the participants' recollection of their PWB was based on reconstructions of experiences that occurred several years previously, rather than assessments of their ongoing experiences. Thus, it is possible that their recollection of those experiences may have changed over time. Third, participants in the current study were successfully awarded a PhD and their experience, as well as perceptions of their PWB, could differ from those who did not complete their studies. Finally, as the participants volunteered to take part, the findings could be susceptible to self-selection bias.

Based on the current findings, several future research avenues are suggested. First, studies should recruit a more diverse sample by including doctoral students from multiple: institutions; disciplines; enrolment statuses; funding models; and doctoral programmes. Moreover, future studies might only consider exploring social-cultural factors that may work to support - or impede - doctoral student experiences of PWB. Second, future studies using a similar methodology should seek to further refine the life grid tool to increase the precision of participant annotations and ratings. Third, longitudinal studies should obtain real-time data on PWB in doctoral students across their journey. Finally, researchers should

sample former doctoral students who withdrew from their studies to explore their PWB during the doctoral journey.

Conclusions

This study offers novel, in-depth insights into factors related to heightened PWB in nine recent doctoral graduates. The illustrations of PWB captured through the life grids illustrates that our participants generally perceived highs and lows in their PWB when reflecting back on their doctoral journey. Findings in the current study remind us that researchers should continue to place emphasis on factors that enhance PWB in this cohort. By doing so, this can help students, supervisors, and institutions to better understand how to support doctoral students more effectively.

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1 **Table 1**

2 *Factors perceived to promote psychological wellbeing in the sample.*

3

Example raw-data codes	Higher-order theme	Theme
Submitting the thesis; passing the viva	Positive outcomes and experiences	Accomplishments
Getting positive feedback from other academics; positive feedback from examiners	Positive feedback from others	
Momentum picked up; constantly chipping away at it	Building and maintaining momentum	
Making progress with reading; data collection went well	Making progress	
Enjoyed the field work; enjoying the PhD	Enjoying the process	Intrinsic rewards
Feeling engaged; doing something I want to	Engaged with the work	
I felt autonomous; they allowed me to control the PhD	Feeling autonomous	
It clicked in my head; a bit of an epiphany	Suddenly things made sense	Comprehension and understanding
It gave me a whole new perspective; I found something new	Finding a new lens to understand my work	
Clear idea of what was going on; feeling clear about expectations	Clear expectations	
Believing I could do it; you feel “you’ve got this”	Feeling confident in ability	Self-efficacy
Feeling ready for the viva; realising I can do it	Feeling confident at assessment points	
They made me believe I could do it; reassurance from supervisor	Esteem support from supervisors	Supervisor support
Provided support when upset; offered support after setback	Emotional support from supervisors	
Gave quick, efficient feedback; easy to access supervisors	Responsive and accessible supervisors	
Encouragement from family; one of my friends helped me to break things down	Family and friends support	Wider support network
Training events were a support network; everyone was always really supportive	Social support from peers	
Realising that you are not alone in the PhD; I connected with peers doing similar research	Identifying with other doctoral students	
Taking a break from the PhD; taking holidays	Taking a break	Self-care and lifestyle
Staying on top of things; I had enough time for everything	Managing the workload effectively	
Not working to strict deadlines; flexible working arrangements	Flexible approach	
Good balance in family life; the right balance with work and the PhD	Good work-life balance	
I didn't have a problem tuition fees in the first year	No financial worries	
Taking part in sport and exercise; going to social events	Pursuing other interests	

Note: PhD = doctor of philosophy.

1 **Figure 1**

2 *Illustrations of psychological wellbeing in the doctoral journey.*