

Understanding how doctoral researchers perceive research supervision to impact their mental health and well-being

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Abstract

Background: A number of risk and protective factors have been identified in association with the mental health of doctoral researchers (DRs). One consistent factor noted in the limited available literature is the role of the supervisor. This literature is largely quantitative though, meaning less is known about how DRs experience supervision and its impact on their mental health.

Aim: The aim of this study was to explore how DRs experience research supervision and its impact on their mental health and wellbeing using qualitative methods at scale.

Materials and Methods: We analysed the free-text responses of 1783 UK-based DRs collected as part of the nationwide U-DOC survey.

Results: Using reflexive thematic analysis, we found two superordinate themes capturing how DRs perceive research supervision and its impact on their mental health: (1) supervision as a conduit and (2) supervision as a mirror.

Discussion: Broadly, these themes encapsulate how supervisors can directly trigger, exacerbate or protect against mental health problems in DRs, as well as supervision providing an opportunity for DRs to learn more about themselves and their mental health.

Conclusion: Our findings support the need for compulsory supervisor training on positive supervisory practices as well as understanding and responding compassionately to DRs with mental health difficulties.

KEYWORDS

doctoral researchers, graduate students, mental health, postgraduate researchers, supervision

1 | INTRODUCTION

There are more than 113,000 doctoral researchers (DRs), also known as PhD students or postgraduate researchers, currently enrolled at UK universities (HESA, 2023). Studies outside the UK have found that DRs were more stressed and had poorer psychological well-being than

controls (Barry et al., 2018; Levecque et al., 2017). Our national survey conducted in the UK, the largest of its kind to date, found that compared with working professionals, DRs were more likely to and had more severe symptoms of both clinical depression and generalised anxiety (Hazell, Niven, et al., 2021). Moreover, we found 40% expressed historic and/or future risk for suicidality (Hazell, Berry, et al., 2021).

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The broader literature on risk factors for poor mental health consistently evidences the integral role of social factors (Silva et al., 2016). Having a lack of social connection is associated with many mental health problems (Evans & Fisher, 2022; Leigh-Hunt et al., 2017; Rohde et al., 2016), but of equal importance is the quality of social relationships (Stewart-Brown, 2005). Being part of supportive relationships is protective of poor mental health outcomes (Morris & Hays-Grudo, 2023). Conversely, as set out in (Birtchnell et al., 2013) relating theory, negative relationships characterised as cold, intrusive, domineering and/or submissive, for example, are deleterious for mental health (e.g., Birtchnell et al., 1992).

Doctoral researchers are a distinct group of students within the higher education community. Their contact time is almost exclusively in the form of supervision provided by one or a few members of staff. The relationship that DRs have with their supervisor(s) is therefore of great importance. Unlike other forms of teaching, there is no standard qualification or training that DR supervisors must complete to become a supervisor. There are university-specific training courses available on DR supervision, but the content and necessity of these is variable. Of the few nationwide training materials of DR supervision, some make no mention of DR mental health or well-being (The Higher Education Academy, 2014), whilst others make fairly generic comments regarding how to foster a positive supervisory relationship (Vitae, 2024). There is not a 'one-size-fits-all' approach to good PhD supervision, but instead, it is a negotiation of agreeable expectations, roles and boundaries (Parker-Jenkins, 2018). There is an in-built power difference between supervisor and supervisee, which needs to be carefully negotiated to give space for expert guidance alongside collaborative and critical discussions (Hemer, 2012). Where these negotiations fail, supervision can be perceived as abusive, neglectful and/or controlling by the supervisee (Almusaed, 2020).

There is a range of negative sequelae associated with supervision that is experienced as negative by the supervisee. It can impede progression and attainment (Sverdlik et al., 2018), and is associated with a range of deleterious attendance behaviours and intentions, including absenteeism, presenteeism and mental health-related intermission and/or intention to discontinue studies (Berry, Niven, Chapman, et al., 2021). Moreover, some evidence suggests that negative supervision is correlated with increased burnout amongst DRs (Cornér et al., 2017), poorer emotional well-being (Devine & Hunter, 2017; Wollast et al., 2023) and mental health problems (Mackie & Bates, 2019). In our own research, we found poor communion (interpersonal closeness) in the supervisory relationship predicted depression, anxiety and suicidality as measured using clinically relevant scales amongst DRs (Berry, Niven, & Hazell, 2021).

The supervisory relationship is thus a central facet of the experience of completing doctoral research, yet potentially also poses some risks to DR mental health and well-being. The existing evidence base is limited in scope, comprising largely small-scale studies or those that only use quantitative methods. We identified a need to

Implications for practice and policy

- Our findings support the need for a mandatory supervisor training programme that includes instruction on how to foster positive supervisory practices.
- This supervisor training needs to also equip supervisors with the skills to acknowledge, validate and signpost doctoral researchers who are experiencing mental health difficulties.
- Negative supervisory practices are prevalent but doctoral researchers lack effective means of reporting such practice. Universities have a responsibility for challenging negative supervisory practices and producing robust reporting procedures that protect doctoral researchers.
- University policies need to be introduced so that when negative supervisory practices are reported they are addressed to prevent future doctoral researchers from similarly negative experiences.

understand the impact of supervision on the mental health of DRs using qualitative methods at scale. Qualitative methods allow the exploration of the mechanisms by which supervision influences mental health, making a space for DRs to be the narrators of their own experiences—the latter seems particularly important in the context of their lower status position within the supervisory relationship. This study uses the qualitative data from a large-scale survey on DR mental health (the U-DOC survey) to answer the research question: How do DRs perceive research supervision to impact their mental health?

2 | METHOD

2.1 | Design

This study used a qualitative design drawing on data from the online self-report UK national 'Understanding the mental health of Doctoral Researchers (U-DOC)' survey (2018–2019). The U-DOC survey used a mixed methods approach to collect data on measures of mental health symptomology and hypothesised risk and protective factors. This study makes use of a subset of free-text response data.

2.2 | Data

After completing the Questionnaire on Supervisor-Doctoral student Interaction (QSDI) (Mainhard et al., 2009), which measures DRs' perceptions of their relationship with their research supervisor, survey participants were asked to elaborate on the responses they gave using a free-text box. Specifically, participants were asked as follows: (a) How do your PhD studies or the conditions of your PhD

studies affect your relationship with your supervisor? (b) How does your relationship with your supervisor affect your PhD studies? (c) How does your relationship with your supervisor affect your well-being? And (d) how does your well-being affect your relationship with your supervisor?

2.3 | Participants

The U-DOC survey was open to anyone studying for their PhD at a UK university at the time of recruitment. We contacted every doctoral school in the UK ($N=162$) to share details of the survey with their PhD cohorts and promoted the survey via social media, Prolific and paid Facebook adverts. We encouraged snowball recruitment within our debrief materials.

2.4 | Procedure

Upon clicking on the weblink provided in the promotional materials, prospective participants were presented with the information sheet followed by the consent form. Those participants who progressed through the eligibility assessment were then asked to complete a demographics form followed by a series of questionnaires assessing mental health symptoms or risk and protective factors thereof. These measures were followed by free-text boxes, so participants could elaborate on their questionnaire responses. At the end of the survey, participants were presented with a debrief statement and given the opportunity to enter a prize draw to win a computer tablet.

2.5 | Analysis

The sample was restricted to only participants who provided qualitative data on the question of interest. Subsample participant characteristics were summarised using descriptive statistics. The free-text responses were analysed using reflexive thematic analysis (RTA) from a critical realist perspective (Clarke & Braun, 2013; Danermark & Ekström, 2002). A critical realist perspective combines a realist ontology (an objective reality exists) with a relativist ontology (our perception is subjective and imperfect). In this analysis, we were thus interested in prioritising meaning-making in the context of complex phenomena and identifying the broader social structures which may give rise to individuals' experiences of these phenomena. Reflexive thematic analysis involves six steps, from familiarisation with the data and initial coding to the clustering and generation of themes that represent patterns in the data. Both RTA and critical realism align in the acknowledgement that the researcher is an active participant in the analysis and that their past experiences and worldview thus impact the analysis and its products (Braun & Clarke, 2020). The initial coding and development of themes were jointly led by the two co-primary authors,

with CB writing the first draft of the thematic structure in consultation with CH. The thematic structure was reviewed by all authors and refinements made.

2.6 | Trustworthiness and credibility

In keeping with our epistemic stance and analytic method, we did not strive for a sense of 'reliability', but instead for trustworthiness and credibility. We approached the analysis collaboratively. The two co-primary authors coded the same 10% of the data set independently and discussed their reflections, and then proceeded to code a further 20% individually. The second author (DH) coded an additional 6% of the data and used this perspective to comment on the draft thematic structure. All authors reflected on the face validity of the thematic structure and contributed to its final refinement. We ensured that we grounded the analysis presentation in verbatim data from participants. We conducted and reported the analysis in line with the quality assessment checklist developed by Braun and Clarke (2020).

2.7 | Reflexivity

Most authors have completed a research and clinical practice-based (JB) or research (CH, CB and JM) doctorate or are currently studying for one (DH). All authors have experience in higher education student supervision, and most were either supervising (CH, CB, JM and JB) or in receipt of doctoral supervision (DH) at the time of writing. JN was additionally a Dean of Doctoral Studies at the time of writing. We have, therefore, experiences in receiving, providing, and providing strategic leadership in doctoral supervision. Our experiences as both providers and receivers of doctoral supervision are variable with respect to perceived quality, support and technical effectiveness. Our team is additionally benefitted by including co-authors who have not provided doctoral supervision, and who have both received and given clinical supervision as mental healthcare professionals. We believe that this diversity of experiences allowed us to helpfully examine the phenomena of supervision and its impacts on mental health and well-being from a variety of insider and outsider perspectives.

2.8 | Ethics

The U-DOC survey received ethics approval from the University of Sussex Sciences and Technology Cross-Schools Research Ethics Committee (reference ER/CH283/9, approved 19/12/2017). Participants completed the survey anonymously and were asked not to include any identifiable information in their free-text responses. All participants provided informed consent for their participation and for verbatim quotes to be included in research publications.

3 | RESULTS

3.1 | Participants

Overall, 3327 DRs participated in the U-DOC survey and 1783 provided qualitative data on supervision. Most participants identified as female, White British, UK citizens without any dependents. Most participants reported having mental health difficulties but did not identify as disabled. The modal type of PhD study was full time, fully funded and without fieldwork (Table 1).

3.2 | Thematic structure

Two higher order themes were identified, with three and four sub-themes, respectively. These are presented below, with illustrative quotes identified by the survey respondent identification number provided in brackets (Table 2).

3.2.1 | Supervision as a conduit

Supervision was positioned as the primary influence ('the most crucial element' [R_d6j8e0aCDGeVSc9]) on DRs' experience of a PhD and its impact on their mental health and well-being: 'Supervisors are...what creates the condition of a PhD and how it is experienced both intellectually and emotionally' (R_3nJL41PT8v4Rees). Three subthemes were identified, describing how positive mental health and well-being is supported by supervision that (1) helps DRs relate positively to their PhD and to wider academia, (2) helps DRs to self-actualise in the stressful conditions of a PhD and (3) balances guidance and freedom to scaffold autonomy development.

Supervision affects well-being through influencing PhD relations

The supervisory relationship affects well-being through shaping how DRs relate to their PhD, through influencing their emotional experience of carrying it out and how they conceptualise their progress. Meetings with a supervisor with whom DRs feel they have a negative relationship were a focus of anxiety and a trigger for feelings of disappointment, disillusionment and self-doubt: 'I am usually anxious in the run up to supervisions, and often dispirited after them. I can find it hard post-supervision to want to pick up my work again' (R_D0R3J1kP0xM6RXj). Conversely, meetings with a supervisor whom the DR perceived they had a positive relationship with were a source of reassurance and motivation: '[My supervisor's] feedback has been very helpful in making me feel like I'm doing good progress – and therefore has positively affected by wellbeing' (R_3O689GFTCQcsy7p).

Supervision additionally functioned as a portal through which the DR was able to experience a sense of belonging in academia, which improved their sense of mental health and well-being. This manifested as, first, the supervisor being able to provide a direct

TABLE 1 Participant characteristics.

	N	M (SD) or n (%)
Sample characteristics		
Age	1777	31.21 (9.53)
Gender		
Male	1783	550 (30.8)
Female		1207 (67.7)
Another gender		17 (1.0)
Prefer not to say		9 (0.5)
Ethnicity		
White British	1783	941 (52.8)
White other		512 (28.7)
Chinese/Chinese British		35 (2.0)
Black/African/Caribbean/Black British		41 (2.3)
Asian/Asian British		101 (5.7)
Mixed ethnicity		67 (3.8)
Prefer not to say		18 (1.0)
Other		68 (3.8)
UK citizen		
Yes	1782	1153 (64.7)
No		629 (35.3)
First language		
English	1782	1232 (69.1)
Other		550 (30.9)
Dependents		
Yes	1783	339 (19.0)
No		1444 (81.0)
Mental health characteristics		
Mental health problem(s) status		
No	1783	719 (40.3)
Yes—I have received a formal diagnosis		586 (32.9)
Yes—I do not have a formal diagnosis		478 (26.8)
Age of mental health problem onset	1040	18.50 (8.61)
Mental health crisis experienced		
No	1711	1540 (90.0)
Yes—emergency care received without hospitalisation		123 (7.2)
Yes—emergency care received and hospitalised		48 (2.8)
Disability status		
None	1782	1407 (79.0)
Yes		316 (17.7)
Prefer not to say		59 (3.3)

TABLE 1 (Continued)

	N	M (SD) or n (%)
PhD characteristics		
Mode of study		
Full time	1782	1443 (81.0)
Part time		339 (19.0)
PhD funding		
Full funding	1783	1144 (64.2)
Part funding		237 (13.3)
Self-funded		402 (22.5)
Year of study		
First	1783	438 (24.6)
Second		503 (28.2)
Third		442 (24.8)
Fourth		249 (14.0)
Fifth		85 (4.8)
Continuation		66 (3.7)
Fieldwork		
No	1782	1159 (65.0)
Yes—completed		462 (25.9)
Yes—not yet completed		161 (9.0)
Area of study		
Arts	1783	161 (9.0)
Biological and Medical Sciences		319 (17.9)
Business and Finance		70 (3.9)
Chemical Sciences		46 (2.6)
Earth Sciences		64 (3.6)
Engineering		77 (4.3)
Humanities		266 (14.9)
Law		39 (2.2)
Maths and Computing		85 (4.8)
Physical Sciences		93 (5.2)
Social Science and Health		477 (26.8)
Others		86 (4.8)

Abbreviations: M, mean; SD, standard deviation.

sense of social connection: 'The relationship with my supervisor does help me a lot when I have wellbeing difficulties...she will be there, and she will take time out of her work for me. That...reduces the feeling of being excluded or alone and makes me feel safe' (R_12MGkMWLAmXwJS). Second, the supervisor functions as the bridge between DRs and wider academia, both with respect to connecting them with colleagues and with a future career in the sector:

...the supervisor's behaviour and directions contribute in large part to their student's mental health. This would be so because they control funding, partially determine graduation/progression and act as a

TABLE 2 Thematic structure.

	Theme	Subtheme
1	Supervision as a conduit	Supervision affects well-being through influencing PhD relations Supervision as a forge for self-actualisation Supporting mental health through scaffolding autonomy
2	Supervision as a mirror	Supervision renders the self worthwhile Perceived role violations cause mental distress Poor mental health undermines engagement in supervision Benefits of supervisor understanding mental distress

connection between the student and the wider academic world. All these converge to make the supervisor the chief locus of competence judgment—the key individual to be impressed, who will determine whether they graduate and provide a professional reference post-graduation.

(R_1pRkv7xuVx7e25e)

Supervision as a forge for self-actualisation

A positive supervisory relationship functioned as a forge—turning the high-pressure experience of the PhD into an opportunity for self-development and growth: 'My relationship with my supervisor has caused me quite a bit of stress at different points, but ultimately I think she will make me into a better writer and researcher' (R_2aQdtxC9XjVeGW3). A necessary condition for this function of supervision was having ambitious yet realistic goals: 'My supervisor gives fair feedback and is realistic about my progress without making me feel like I can't do my research' (R_2wdfRjvyUPHTOOX). Unrealistic goals were perceived as resulting in poor motivation and negative self-construals: '...my supervisors have unrealistic expectations...there have been occasions that I felt that I am not good enough' (R_1fkrnkropzWk6tZ), to the extent that DRs could feel almost incapacitated: 'Pressure... to ensure completion of all PhD studies to be completed in 3 years... This pressure freezes my brain and makes me want to chuck it all in' (R_2VrsGnhnksCiOZR).

A further condition necessary for supervision to function as a forge was the supervisor's ability to inspire hopeful self-agency. Implicit hope-inspiring techniques included offering a sense of genuine collaboration with the DR: '[Supervision provides] an opportunity to check and challenge each other, which ultimately leads to growth and development' (R_YY8HgXurbFfeR3P). Explicit techniques included the supervisor communicating belief in the DR, challenging their negative appraisals and triggering a more positive self-concept. The extract below links this inspiration of

hopeful self-agency to the identification and prioritisation of specific goal-based activities:

Even in the darkest days, [my supervisor] will challenge my negative thinking with evidence of my success (even if for me is impossible to see it) and will make me feel valued. She is realistic and helps me prioritise when I lose focus of what to do next and keeps me on track.

(R_3si7tVt9cahtnna)

Supporting mental health through scaffolding autonomy

Doctoral researcher mental health was supported by supervisors making space for DRs to develop a sense of autonomy. This required supervisors to offer leadership and direction, but whilst genuinely sharing power and not being dictatorial: '[My supervisor] really makes me feel that I can achieve things without helping me too much; he strikes a perfect balance between making me work things out myself but still supporting me' (R_2919bLDF9jJxOTT).

When supervisors were perceived as being unwilling or unable to provide academic or technical guidance, DRs felt unsupported and uncertain. In turn, this undermined their mental health: '...supervisor doesn't know about the subject and doesn't really do much. It is affecting all my life because I constantly thinking of quitting...It has put a lot of pressure on me and made my mental health worst' (R_3kByzx2oS7969LR). Conversely, when supervisors were unwilling to relinquish control, of the PhD itself or wider facets of the DR's life, this was experienced as disempowering and disheartening: '...micro-management...over time has caused the loss of self-esteem and more importantly, constantly doubting my own skills/abilities' (R_3ee3WOS91h94yGN).

[My supervisors] seem to want to control my other work (outside the PhD) and life sometimes, and disapprove of many things I want to do because they fear it will distract me from the PhD. This makes me unhappy, as I am an adult.

(R_3OIDVtqTCETm2v)

Mental health was best supported by supervisors providing expert guidance whilst making space for DRs to empower themselves, with respect to taking ownership of their own PhD work but also in supervisors not becoming paternalistic if DRs disclosed mental health or well-being difficulties:

...my supervisor treats me with respect as an adult at the same time as working with me as a student under his professional care. This helps me to feel empowered to do my work well and feel satisfied about my work-life, which has a positive impact on my life and wellbeing in general as well as in the workplace.

(R_1HbpPcVGaXDFEXR)

My supervisor is aware of my anxiety and has been supportive but not pushy... my supervisor allows me to take lead on contact and meetings, with gentle reminders if I become distant for too long.

(R_2QR4QQt7MXdhObH)

3.2.2 | Supervision as a mirror

Supervision appeared to function as a mirror through which DRs experience themselves, influencing their sense of their own personhood and professional identity: 'My relationship with my supervisor has a huge impact...really my confidence, self-worth, excitement, etc. go up and down based on her changing feedback and level of interest' (R_22yQmXyMVJDYg5t). Four subthemes were identified, which described (1) how supervision influences mental health and well-being through supporting DR self-worth, (2) how perceived role violations in the supervisory relationship can cause mental distress, (3) how DR mental health affects engagement in supervision, and (4) how supervisors conceptualise mental distress and its reflections on DRs following disclosures.

Supervision renders the self worthwhile

A positive supervisory climate was important to DR self-worth. The feeling of being 'known' and of being treated as a human being was beneficial to mental health and well-being. Moreover, DRs' sense of supervisors treating them as a colleague also supported well-being and progress through communicating professional respect: 'My supervisor treats me as a colleague rather than a subordinate and this has a beneficial effect on both my studies and wellbeing' (R_AgPXwHuFkhlxnP3). As the extracts below demonstrate, a lack of supervisor interest and well-being damages well-being through undermining DRs' positive sense of their current and future personal and professional meaning and mattering:

The relationship with my supervisor is the reason I feel hopeless, not satisfied and very demotivated. He is not really interested in our work, he decided our project without giving any thought, never spent a second to teach us anything... he never critically comment[s on] our work, which is a fundamental part of a PhD training... I felt very down, I started being nervous and frustrated...I never felt so bad as during the past few years, I started having troubles sleeping.

(R_2ZPLEzULG0moSzA)

I felt like I was a troublesome project to be pushed over the line rather than a human being...I became angry, anxious, and depressed. This impacted on me personally and my sense of wellbeing; it impacted on my motivation and on my future career aspirations.

(R_bm6Gi7aMKBDpLpf)

Moreover, the supervisor themselves was positioned as a micro-portrayal of the academic life, and, consequently, a reflection of the DRs' possible future self. The extent to which this portrayal reflected an ideal future self, rather than a future self to be avoided, impacted DRs' sense of motivation in the present moment. The excerpt below demonstrates how the consideration of future selves is bound together with concerns regarding mental wellness and illness (and the safety and value of openly discussing well-being concerns) and intersects with issues of gender and power:

[My supervisor] is always supportive...and makes me think I can achieve it. She told me to not worry about deadlines—we just had to sort health out first. But she also is f*cked off with the whole system and institutional normality of facilitating mental illness. She feels complicit in my mental health deterioration because she is part of the “problem” of the structuring of the PhD. I can feel I'm putting her in position of cognitive dissonance when I talk about my depression: she wants to tell me to just jack it all in and do something that makes me happy and healthy again, but she is also invested in my finishing. She said she didn't know any female academic who had not, at one point or another, broken down because of PhD/academia. I know it makes her think about leaving the profession as well.

(R_21u0Vh5skeBlfDR)

Perceived role violations cause mental distress

The supervisory relationship reflected a social contract based on bi-directional implicit and explicit expectations; that is, that those supervising would be engaged and would provide guidance, support and encouragement; that those being supervised would be active participants in their own learning; and that the relationship would be characterised by honesty, respect, authenticity and regular contact. Perceived role violations impacted DRs' mental health and well-being negatively.

One type of role violation described was supervisors who did not seem able or willing to participate in what were considered the normal rituals governing any social relationship, for example, ‘small talk’ or the exchange of pleasantries. The excerpt below shows how the absence of these typical relational cues contributes to a sense of unease and undermines feelings of connection and trust:

He frequently (perhaps without meaning to) creates an atmosphere of fear and intimidation. I am usually very afraid going to supervisions with him, even when they go well, because his mood can suddenly turn, and he can become terse. I do not think he finds small talk easy or pleasant, which means that I can often expect irritated answers if I ask him questions like “How are you?” or “How was your Christmas?” I don't mind keeping the tone strictly professional, but it does put

me on edge that we can't seem to just have a normal conversation. It also means I refuse to tell him anything about myself or my personal life or my wellbeing unless it relates directly to work. I am embarrassed to admit it, but I do think that his behaviour affects my wellbeing hugely.

(R_pg78v7jClchFc1)

Moreover, DRs valued a sense of consistency and interpersonal continuity, a consistent supervisory relationship involving regular contact, with a clear sense of ‘rules’ governing supervision so that they could predict how supervisory meetings would unfold. Experiences of inconsistency and supervisors failing to deliver on promised actions were challenging and created anxiety and self-doubt:

My supervisor can be quite unpredictable. Sometimes he is on my side 100%, loves what I do, has every confidence in me. Then at other times he is contemplative and doesn't say much which can make me uneasy and question what I am doing

(R_DqoCJBAkmNyBgMF)

...my supervisor is not very good at sticking to scheduled meetings and often reschedules or cancels meetings at the last minute. Sometimes I even turn up at his office at a pre-arranged time to find he is not there. This can have a strong effect on my mood and wellbeing, as it makes me feel like I'm not valued by him, reinforces my sense of worthlessness, and further undermines my confidence in myself and my work

(R_ba2lF0nuBbyXvA5)

A final type of role violation reflected supervisors who created a critical or hostile interpersonal environment. Whilst DRs appreciated constructive criticism, they experienced overly or consistently negative feedback from supervisors as demoralising and negatively impactful on their well-being and progress:

...my supervisor was unprofessional (e.g., wanting to be friends with my peers and excluding me as I am the student) and verbally abusive (e.g., remarking, unsolicited, on more than one occasion that a manuscript I was submitting at the time would be ‘f*cking rejected’). ...As such, this relationship has greatly affected my wellbeing and, in turn, my PhD studies.

(R_0VcURKeCedzpzj)

Instances of feeling verbally abused or humiliated by their supervisors were understandably identified as mentally harmful. As the excerpt below describes, DRs feel very powerless to create change in the face of supervision that feels abusive:

I have had a very strained relationship with my supervisor. I would attribute this as the main cause of my depression. ... She would openly criticise me within a shared office space and be verbally abusive towards me. Should I have any problems with an experiment, she would often attribute this to my inadequacies ...I was encouraged to officially complain about her behaviour towards me, this created a much greater strain on my PhD as the complaint was not taken very seriously ...This resulted in me being even more isolated and unsupported. I believe my depression very much developed after this point.

(R_eXS4noKxJTlyuAh)

Poor mental health undermines engagement in supervision

Doctoral researchers reported that mental health or well-being problems impacted their ability to participate in the supervisory relationship. Low mood, anxiety and a tendency towards perfectionism and anticipating negative evaluations from others were described as preventing DRs from feeling able to arrange or attend planned supervisory meetings, or making it difficult for them to participate fully or benefit if they did attend:

...the nature of my anxiety/depression, it often makes me hide away, so I am less likely to set up meetings to see her.

(R_1CpyHQH0P4E9vOL)

My mental health impacts my relationship with my supervisors in that I have a tendency to overthink feedback or supervisions, sometimes worrying about the tone something was said in, or the 'real meaning' behind feedback on my work.

(R_2sdQjXCTw83WKZr)

Doctoral researchers' awareness of their avoidant and pessimistic thoughts and behaviours created a negative feedback loop. They expressed self-criticism and disappointment and described being aware that they had not extruded support and guidance from supervision that could actually improve their progress and well-being: 'I could have an even better relationship with [my supervisor] if I was able to get into uni more but as my anxiety makes that hard, I sometimes feel I don't make the most of having his support' (R_2wdfRjvyUPHTOOX). Doctoral researchers perceived their behaviour as creating or exacerbating issues within the supervisory relationship which, in turn, reinforced their mental distress and thus the cycle continued: 'My wellbeing makes me quite timid around [my supervisor], making my mood worse than usual and it becomes vicious cycle' (R_1BWNydkjpsbSND).

Benefits of supervisor understanding mental distress

Doctoral researchers' beliefs about how their supervisor conceptualised mental health difficulties was important to their view of

supervision as restorative or harmful, and their own beliefs about the meaning of mental health problems for their personal and professional identity. First, DRs reported that it was helpful for supervisors just to be able to 'see' mental distress, that is, to be aware of how mental health or well-being problems might present and the type of conditions that might make DRs more vulnerable to experiencing them. Otherwise, the onus was on DRs to identify and raise these issues themselves, which was considered effortful and unfair:

I have had some really trying times in my PhD studies (poor mental health, a diagnosis with a disability, workplace bullying) and...[my supervisor] is quite detached from my life, he expects me to work constantly and on many different projects at once...when my wellbeing is bad, I feel that my supervisor cannot tell and still makes these demands, and it negatively impacts me a lot.

(R_2wsgTgJfBTPDt9V)

I don't think [my supervisors] truly appreciate that I am worried all the time...If I wasn't explicit about my concerns and anxiety I don't know that I would receive the same support...supervisors seem generally to respond to needs that you tell them about. They generally don't seem so aware or able to pre-empt them. It is asking a lot of potentially vulnerable people to expose themselves emotionally this way in order to get what they need.

(R_216Ttr69EkoK63a)

In addition to awareness of risk factors for and signs of mental health difficulties, DRs found it helpful for their well-being and productivity if supervisors were sensitive to how such problems could impact their performance and sense of self. This sensitivity included the supervisor maintaining a sense of ongoing interpersonal connection and caring, whilst projecting compassionate understanding that mental health difficulties are legitimate but do not eclipse the DR's agency and personhood:

My relationship with my supervisor really aids me to be able to continue my PhD. She is sensitive to the reality of my mental illness and how that impacts my progress but also is honest and pushes me to do my best when I am able to. THIS KIND OF SUPERVISION MAKES ALL THE DIFFERENCE TO THOSE STUDYING WITH MENTAL ILLNESS. [capitals are participant's own emphasis]

(R_eICaNuPSegZDDzP)

My supervisor ...has been unconditionally supportive in all of my struggles through the last year. It was she that picked up on my changes of behaviour, suggested breaks when I work too hard, and knows

exactly how to get me working to my full potential. She is never disappointed in me when I do not meet deadlines, and always supports my own ideas for my research...She has total faith in me and my research, which is the most incredible thing. My supervisor values me as a human being before considering me as a student, which is the best thing I could have asked for this year.

(R_2q8F9tLcrHIYhtF)

4 | DISCUSSION

The aim of this study was to use a large UK-based qualitative survey data set to understand how DRs perceived their supervisory relationship to impact their mental health and well-being. We identified two higher order themes, which described how the supervisor functions as a conduit for the impact of the PhD on DRs' mental health and as a mirror or lens through which DRs experience themselves. The first higher order theme reflected that supervision affects how DRs relate to their PhD and to wider academia. When supervision was functioning positively, it could buffer the high-stress nature of doctoral study to scaffold transformation and growth, whilst supporting mental health and well-being through making space for developing autonomy and self-agency. The second higher order theme described how supervision offered DRs an opportunity to see themselves as professionally and personally worthwhile. The perception of supervisors deviating from their expected roles was very challenging to DRs, and experiences of supervisors being inconsistent, critical, objectifying and humiliating were particularly painful. Doctoral researchers reported that mental health difficulties undermined their capacity for active engagement in their supervision, yet they found it helpful when supervisors could identify that they might be experiencing these problems. In these cases, it was important for supervisors to recognise mental health problems as legitimate, yet to present an ongoing view of the DR as nonetheless capable, valuable, trusted and agentic. Through doing so, DRs reported that the impact of mental health difficulties on their progress and well-being was mitigated.

Present findings are in concordance with the wider literature that the academic achievements of the supervisor are less relevant in determining satisfaction with supervision compared with their perceived supportiveness (Dericks et al., 2019). The combination of supervisors having basic interpersonal and communication skills, coupled with some mental health awareness, was essential to supporting DRs to have a sense of confidence and self-worth, and to maintain this despite challenging circumstances. This aligns with robust wider evidence that having social support (Morris & Hays-Grudo, 2023) and the quality of this support (Stewart-Brown, 2005) is generally important for positive mental health. Our findings are additionally in line with relating theory (Birtchnell et al., 2013) and suggest that DRs make very explicit links between negative (e.g.,

cold, intrusive or domineering) and positive (e.g., friendly, compassionate or respectful) patterns of relating and their own experience of mental health and well-being difficulties.

Present findings complement prior work by our team and others in suggesting that doctoral supervision is a unique and variable experience that can be formative and restorative—or potentially toxic. Current findings triangulate our previous quantitative findings (using data obtained in the same survey sample), which found aspects of interpersonal closeness (i.e., communion: proximity and co-cooperativeness) and balance between providing guidance and space for DR autonomy (i.e., agency: influence and leadership) instrumental in the mental health of DRs. Our prior quantitative work suggested that the former may be more impactful with respect to reducing the risk of DR mental health problems (Berry, Niven, & Hazell, 2021). The present study evidences both facets as important—suggesting that DR mental health and well-being is impacted by both the supervisor's ability to form and maintain an interpersonal bond and to scaffold the DR's sense of autonomy.

Our findings additionally support and extend our prior model of DR mental health as facilitated by a dynamic balance across key tensions that characterise the PhD experience (Berry et al., 2020). The present study expands our knowledge as to how balance in these tensions manifests in the experiential domain of the supervisory relationship. This includes the need for supervision to offer freedom and certainty, to respect the DRs' personhood and autonomy, whilst still offering guidance and direction, and to perform at least some expected behaviours characterising a typical social relationship. The findings of the current paper support the utility of a tension-balance model as a lens through which to understand doctoral supervision and provide further detail as to the mechanisms by which supervision impacts DRs' mental health and well-being.

Moreover, the findings can also be understood using hope theory (Snyder, 2000) and the model of possible selves (Markus & Nurius, 1986). In the former, goal-directed cognitions (self-agency or belief in one's ability to meet their goals and pathways or the ability to identify and pursue specific routes to goals) are developed in the context of supportive relationships. In the latter, what people fear, want and expect to become in future affects their evaluative view of self, motivation and behaviour in the present moment. Current findings identify how supervisors can scaffold hopeful thinking and encourage beliefs in positive future selves through implicit and explicit techniques. Moreover, current findings identify this transmission of positive regard is especially important in the context of emerging or exacerbated DR mental health or well-being problems.

4.1 | Limitations

The U-DOC data afford a breadth of qualitative data from a large multi-disciplinary sample of UK DRs. Our data are nonetheless limited though in terms of depth. Doctoral researchers provided free-text written responses. The qualitative survey methodology meant we were unable to ask any follow-up questions or seek clarification.

Not all of the participants who took part in the U-DOC survey provided qualitative data. It may therefore be that those who provided qualitative data do not believe that their supervision impacts their mental health and vice versa, or potentially would identify different mechanisms by which they perceived it did so, but this cannot be verified from the available data. Finally, we asked participants exclusively about the supervisory relationship, but we know that this is not the only factor that can cause, exacerbate or protect the mental health of DRs. We have explored some of these potential factors in our other publications on the U-DOC data but considering them here was beyond the present scope.

4.2 | Implications

Our findings evidence the relationship between research supervision and DR mental health and well-being as dynamic and multi-faceted, with multiple mechanisms of influence. This association seems to be cyclical, in that the experience of mental distress is perceived by DRs to influence their supervisory relationship, which, in turn, affects their well-being. Key practice implications are that supervisors require training on mental health awareness and fostering supervision practices that are conducive to good mental health and avoiding practices that might trigger or exacerbate poor mental health. These practices include creating a supervision climate that communicates trust and respect, and scaffolds autonomy and hopeful self-agency. Such training should be mandatory, and adherence to the training principles should be monitored on an ongoing basis. This training should not create any expectation that DR supervisors are quasi-therapists but instead help them to support DRs to flourish, whilst being able to respond sensitively to mental health-related disclosures and connect DRs with appropriate sources of support.

Moreover, a significant proportion of DRs reported experiencing supervisory practices that are unprofessional, toxic, and even abusive, yet spoke of feeling ignored or unsupported by institutions if they tried to report this. Institutions must be conscious of regularly reviewing their means by which DRs can report bullying and harassment and the appropriateness and effectiveness of the action that follows. Institutions need to encourage individual and collective responsibility for prioritising DR mental health and well-being, for example, embedding confidential discussions about supervision dynamics as part of DR annual reviews, and mandatory reflections on supervisor practice as part of yearly faculty appraisals.

It is important to note too that rates of mental health problems are additionally high amongst academics themselves (Jayman et al., 2022; Wray & Kinman, 2021) and that this could contribute, at least in part, to some of the more negative supervisory experiences identified in the present data. Thus, future research directions should focus on co-creating, with supervisors, feasible means by which they can improve their mental health awareness and supervisory practices without incurring additional burden that undermines their own well-being.

5 | CONCLUSION

The impact of doctoral supervision on DR mental health is complex and multi-faceted. Two main manifestations are, first, that the supervisory relationship is the conduit through which doctoral researchers experience their PhD, either buffering or increasing the stressful aspects and negating or supporting their emerging autonomous academic identity. Second, supervision functions as a mirror through which doctoral researchers experience their personhood and professional self, offering both opportunities and risks relating to self-concept, mental health and well-being. This is contingent on supervisors acting in accordance with social and professional role expectations and their conceptualisations of the nature and legitimacy of mental health problems. These findings help us to better understand the mechanisms by which doctoral supervision impacts mental health and the necessary conditions to scaffold positive mental health and well-being. Practice implications include the need for doctoral supervisors to be trained in mental health awareness and formative and restorative supervisory practices.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The anonymised data are available upon request from the authors.

PATIENT CONSENT STATEMENT

All individuals who took part in this study provided informed consent to participate and for their data to be used in research reports.

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