2021-02-03

The researcher Toolkit: A preventative, peer-support approach to postgraduate research student mental health

Homer, Sophie

10.1108/SGPE-06-2020-0039
Studies in Graduate and Postdoctoral Education
Emerald

The Researcher Toolkit: A preventative, peer-support approach to postgraduate research student mental health

Sophie R. Homer*,

Linda M. Solbrig,

Despina Djama,

Jon May

School of Psychology, University of Plymouth,

Sarah Kearns

Doctoral College, University of Plymouth

Anne Bentley

Student Wellbeing Services, University of Plymouth

*Corresponding Author: Sophie Homer, sophie.homer@plymouth.ac.uk; School of Psychology, University of Plymouth, Drake Circus, Plymouth, Devon, UK, PL4 8AA

Abstract

Purpose: Rates of mental ill-health among postgraduate research students (PGRs) are alarmingly high. PGRs face unique challenges and stigma around accessing support. We developed The Researcher Toolkit: a novel, open-source, preventative approach to PGR mental health. The Toolkit empowers PGRs and promotes positive research culture. This paper describes and evaluates the Toolkit to encourage adoption across the sector.

Design / methodology / approach: Four workshops were designed by integrating researcher development, critical pedagogy, and psychological knowledge of wellbeing. A diverse group of PGRs co-designed workshops and delivered them to their peers. Workshops engaged 26% of the PGR population (total 116 attendees). PGR Workshop Leaders and attendees submitted anonymous, online feedback after workshops (74 total responses). A mixed-method approach combined quantitative analysis of ratings and qualitative analysis of open-ended comments.

Findings: Feedback was overwhelmingly positive. Workshops were universally appealing, enjoyable, and beneficial, and the peer-support approach was highly valued, strongly supporting adoption of the programme in other universities. Findings are discussed alongside wider systemic factors and recommendations for policy.

Originality: The Researcher Toolkit is a novel PGR wellbeing initiative. Its originality is threefold: its approach is prevention rather than intervention; its content is new and bespoke, created through interdisciplinary collaboration between psychologists, researcher development professionals, and PGR stakeholders; and

support is peer-led and decentralised from student support services. Its evaluation adds to the limited literature on PGR wellbeing and peer-support.

Practical implications: The Toolkit translates readily to other UK institutions and can be adapted for use elsewhere. Recommendations for practice are provided.

Keywords: postgraduate, PhD, student, mental health, researcher, wellbeing

Background

Mental ill-health is an issue of national concern. One in four UK adults experience mental ill-health (McManus et al., 2009) and depression, anxiety, and stress accounted for more than half of lost working days in 2018 (HSE, 2019). Universities are not unaffected: student mental health disclosures are increasing (UUK, 2018). Prevalence rates in postgraduate research degree students (PGRs) are particularly alarming: 32% of PGRs have or may develop a mental health problem, and 50% experience significant symptoms (Levecque et al., 2017). Notably, the prevalence is higher than in defence and emergency services personnel, which is between 10 and 22% (Bennett et al., 2004).

Several facets of the PGR experience are uniquely conducive to mental ill-health. Key factors include the asymmetrical supervisor-student relationship, financial insecurity, the 'publish or perish' mentality, imposter syndrome, high workload, and isolation (Barry et al, 2018; Levecque et al., 2017; Vitae, 2018). Attrition rates for PhD programmes are extremely high and of considerable concern within the sector (HEFCE 2012; Spronken-Smith, Cameron and Quigg, 2018). Early career researchers are leaving academia for the sake of their wellbeing (Vitae, 2016), which is a major threat to the industry.

Only 5% of UK students are PGRs (HESA, 2019), and university mental health provision is primarily undergraduate-oriented. PGRs may therefore believe they cannot access, or would not benefit from, these services (Waight and Giordano, 2018). Moreover, there is considerable stigma for PGRs, who fear that accessing support will reflect badly on their research ability and hinder their careers (Vitae, 2018).

The Researcher Toolkit

PGRs are a particularly at-risk yet neglected group. Mental-health initiatives must recognise the unique experiences of this diverse group and the stigma around accessing support. Initiatives need to be appealing, sustainable, and ideally, preventative. To meet these needs, we developed 'The Researcher Toolkit: An essential guide to PhD life'. The Researcher Toolkit is a series of workshops, created and piloted at the University of Plymouth and designed to be modifiable for adoption by the wider sector. Workshops apply psychological knowledge (e.g. techniques from Cognitive Behavioural Therapy), to the unique challenges of postgraduate research. The Toolkit's approach is one of prevention rather than intervention: it empowers PGRs to notice and act upon early signs of declining wellbeing *before* mental health problems take root.

A Peer-Support Approach

The project used a peer-support model: PGRs in at least their second year of study were recruited and trained to become Workshop Leaders and deliver sessions to their peers (primarily new starters who stand to benefit most from a preventative approach). Sufyan and Ali Ghouri (2020) identify four dimensions of peer-support: Informational support is the provision of advice (Thoits, 2011). Emotional support is the exchange of empathy, care, and encouragement (Cohen & Wills, 1985). Instrumental support is assistance with particular tasks (Thoits, 2011). Social companionship is mutual engagement in enjoyable activities (Cohen & Wills, 1985). We argue that these dimensions are not mutually exclusive: the Researcher Toolkit was designed to combine practical advice with fun and enjoyment in a welcoming, encouraging, emotionally uplifting environment.

We chose this model for several reasons. Firstly, meaningful social interaction is key to wellbeing (Baumeister & Leary, 1995), but many PGRs feel isolated (Vitae, 2018). The Toolkit facilitates peer-integration and the development of ongoing social support networks. Sufyan and Ali Ghouri (2020) posit that peer-support is not just social connection, but the exchange of psychological resources between peers. The Toolkit is a platform for this exchange. The efficacy of peer-support in improving mental health is well established (Repper and Carter, 2011), but the literature on PGR peer-support is limited and often concerns academic progress (Kumar & Aitchison, 2018; Meschitti, 2019) or specific cohorts (e.g. international: Lee, 2017; or online: Berry, 2017). Graduates report that peer-support not only aids progress (Martinsuo and Turkulainen, 2011) but is integral to a positive experience (Devenish et al., 2009, Nolan, 2018).

Secondly, this model facilitates effective communication of delicate messages. Informal, social learning from peers can be less threatening than official communications from staff (Devenish et al., 2009). Moreover, discussions initiated by peers normalise and destigmatise wellbeing.

Thirdly, supporting roles have positive effects on wellbeing (e.g. Schwartz & Sendor, 1999). Therefore, we expected the Toolkit would benefit PGR Workshop Leaders as well as attendees. However, literature on the experiences of peer-supporters at doctoral level is limited, and the format of the Researcher Toolkit is novel. Therefore, we did not communicate this expectation to Leaders in advance, and we mitigated risk of burdening Leaders by limiting their hours, allocating them to small, supportive teams, and providing ongoing supervision.

Finally, and pragmatically, peer-support is a cost-effective and sustainable solution. The programme self-perpetuates: each cohort of Leaders trains the next, overseen by professional services staff.

Recruiting Workshop Leaders

Twenty PGRs were recruited to become Leaders, including male and female, international, self-funded, and part-time students of varying ages, disciplines, and stages of study. Leaders responded to an advertisement posted online and emailed to PGRs. Leaders had at least one year's experience of postgraduate research. They provided a CV, statement, and supervisor reference before attending a short interview with SH. Leaders received £15.90 per hour.

Leaders received 12 hours' induction, designed by SH with critical input from AB and JM. Induction increased Leaders' confidence by facilitating team-bonding and covering necessary generic skills including: mental health awareness; confidentiality; compassionate communication; self-awareness; support and signposting. Most Leaders also completed a Mental Health First Aid course.

Designing the Researcher Toolkit

Workshops were designed by SH, who was then a PGR in Clinical Psychology. The project team reviewed the literature and drew on personal and professional experience to identify key PGR issues as: working practice and work-life balance; the supervisory relationship; and time-management (informed by Vitae, 2018). The latter issues were allocated one workshop each: 'How to get the most out of your supervisor', and 'How to finish your PhD on time'. Working practice was addressed across two workshops, 'What next? Starting a project and maintaining momentum', and 'How to maximise your productivity'.

SH identified learning aims for each workshop and designed relevant interactive, engaging activities by applying psychological knowledge to PGR study. For example, CBT's cognitive triangle (Beck, 1979) explains the cyclical interaction between thoughts, feelings, and behaviours. Leaders explained that thoughts such as "I am not making any progress" could cause feelings of anxiety or stress and drive behaviours such as working late. Insufficient rest further increases anxiety, stress, and negative thoughts, continuing the cycle. Students learned how to break negative cycles by challenging unhelpful thoughts and behaviours. Additionally, the Wellness Recovery Action Plan framework (Copeland, 2002) identifies early signs of declining wellbeing. It was adapted into a 'reflective researcher' exercise: PGRs identified signs that their research is going well (e.g. meeting targets), and not so well (e.g. avoiding work), and that they personally are doing well (e.g. sleeping well) and not so well (e.g. avoiding social contact). Students saw the link between work and wellbeing and learnt techniques to act upon negative signs (including accessing support services).

A pertinent criticism of psychotherapy is that it implies problems with individual minds, but social factors (e.g. poverty) are major causes of mental ill-health (Read & Bentall, 2012). We cannot focus entirely on individual PGRs and ignore institutional and systemic factors such as funding, research culture, and workload. The Toolkit therefore balances psychotherapeutic techniques alongside critical pedagogy. For example, PGRs critically evaluate working habits, learn to identify when criticism is unfair, and practice communicating concerns assertively.

Workshops were finalised with Leaders during training sessions. See Table I for workshop outlines with supporting rationale.

Table I: Workshop content

Workshop title and aims	Activities	Rationale
1. What next? Starting a project and maintaining momentum Aims to destigmatise and initiate dialogues around wellbeing, promote self-reflection and encourage good working practice.	Students share expectations and anxieties around PhD with at least several others, Leaders provide advice and reassurance.	Destigmatises and familiarises concern sharing, making students more likely to do so in future. Shows PGRs that others share their anxieties: group identification mitigates stigma and improves self-esteem.[1]
	Leaders explain SMART goal theory[2] and apply to common PGR goals and anxieties from previous exercise.	Ensures PGRs set realistic goals and do not fall short of unrealistic standards, which increases anxiety.[3]
	Students consider 3 case studies about managing workload effectively and ineffectively.	Shows PGRs that they have a choice about how to manage workload. Demonstrates objectively the personal costs of overworking or not engaging in meaningful activities. Shows PGRs that it is ok to prioritise wellbeing.
	Students Identify signs that research is going well and not well, and signs that they personally are doing well and not well.	Adapted from Wellness Recovery Action Plan framework.[4] Students identify early warning signs of declining wellbeing.
	Leaders advise on what to do when students notice negative signs and introduce university support services.	Students know how to act on early warning signs and are aware of institutional support.[5]
2. How to get the most out of your supervisor Aims to empower PGRs to communicate concerns, work effectively with supervisors and handle criticism objectively.	Students identify expectations of their supervisor (e.g. how often to meet) and role-play as their supervisor in a worst-case scenario and a more realistic scenario.	Ensures expectations are realistic, builds empathy with supervisor. Shows students that we often worry automatically about the worst-case scenario even if it is unrealistic. Adapted from alternative perspective-taking CBT techniques.[6]
	Leaders explain assertive communication, students apply it to common scenarios.	Students can effectively communicate difficult issues.[7]
	Leaders give tips on managing the supervisory relationship and dealing with multiple supervisors.	Demonstrates a healthy supervisory relationship.

	Students consider how to handle criticism from supervisor.	Students look at criticism objectively and challenge unfair criticism.[7]
	Leaders explain what to do if the supervisory relationship is not working.	Students feel in-control.[8]
3. How to maximise your productivity Aims to enable PGRs to identify and challenge negative, and promote positive, thoughts and behaviours.	Leaders explain interaction between thoughts, feelings, and behaviours, students think of relevant examples.	The cognitive triangle model of CBT[9] applied to the PGR experience.
	Leaders give PGR examples of negative thoughts and how to challenge them, students practice exercises.	Adapted from CBT thought-challenging exercises e.g. thought recording, identifying evidence (or lack thereof), and alternative perspective-taking.[6]
	Leaders give tips on fostering positive thoughts, feelings, and behaviours.	Promotes self-care.
	Students practice applying techniques to hypothetical negative PGR scenarios.	Students are prepared to deal effectively with setbacks.
4. How to finish your PhD on time Aims to challenge PGRs' conceptions of time and the working day, to enable them to plan their time effectively, and to avoid burning-out.	Students consider how they would plan their days if clocks did not exist.	Students know that hunger, tiredness, etc. are important cues about when to take a break.
	Students consider how and when they work best and plan their day accordingly.	Adapted from CBT activity-monitoring records[10]. Gives students control over their working habits.
	Leaders provide practical time-management tips.	Time-management proficiency is linked to self-efficacy.[11]
	Students discuss managing competing priorities (especially wellbeing).	Reminds students that their wellbeing should be a priority.
	Leaders talk about perfectionism, students do a free-writing exercise.	Self-critical perfectionism hinders progress and increases stress in doctoral students.[12]
	Students think of solutions to common PGR distractions and problems.	Students are prepared to deal effectively with setbacks.

[1]Crabtree et al., 2010; [2]Lawlor & Hornyak, 2012; [3]Smith, Vidovic, Sherry, Stewart, & Saklofske, 2018; [4]Copeland, 2002; [5]Vitae, 2018; [6]Beck & Beck, 1995; [7]Duckworth, 2009; [8]Mineka & Kelly, 1989; [9]Beck et al., 1979; [10]Beck, Rush, Shaw & Emery, 1979; [11]Ganguly, Kulkarni, & Gupta, 2017; [12] Moate, Gnilka, West, & Rice, 2019.

Training Workshop Leaders

Leaders received one four-hour training session per workshop. SH and AB delivered workshops to Leaders who provided critical feedback and agreed amendments. For example, Leaders changed a thought-monitoring worksheet exercise to a group discussion and made examples more research-related (e.g. “I’m not good enough” became “I’m not good enough to be a researcher”). Leaders received a PowerPoint presentation, instruction manual, and session plan. In groups of 2-5, Leaders scrutinised these materials, made changes, and allocated work. Materials were adapted to accommodate major, universally agreed changes, though Leaders were encouraged to embrace idiosyncrasy in their delivery. Each training session began by reflecting on Leaders’ experiences. SH maintained email and face-to-face contact with Leaders by way of supervision.

Stakeholder engagement in designing healthcare interventions ensures acceptability, efficacy, and adherence (Millar, chambers, & Giles, 2015). Co-creating the Toolkit with a diverse group of PGRs had several advantages. It ensured activities were appropriately pitched for the target audience (Devenish et al., 2009); that workshops were appealing, engaging, enjoyable, and beneficial; and that Leaders had ownership of the materials they delivered. It also incorporated the unique experiences of PGR sub-groups, including international and part-time students. Therefore, co-creation ensured the Toolkit was universally beneficial.

Packaging and Branding the Researcher Toolkit

Workshops cover research skills including project management, the supervisory relationship, and time management. As such, they were embedded within the institution’s Researcher Development Programme. Existing researcher

development sessions cover these skills, but the Toolkit collates them into one comprehensive package, delivers them in a novel and engaging way, and consciously frames them alongside mental health literacy.

Previous researcher development sessions - titled ‘Coping with stress’ or ‘Dealing with anxiety’ - were poorly attended, likely due to stigma (Vitae, 2018). There is an equipoise between a) maximising engagement by circumventing stigma and b) confronting stigma by openly disclosing our aims. We gave workshops discreet titles, branded them as researcher development, and avoided mention of wellbeing in advertising to maximise engagement. However, we confronted stigma *within* workshops by framing wellbeing as researcher development and encouraging open discussion. Crucially, workshop titles are not misleading but accurately represent their content. This decision fits within a preventative approach and reinforces the message that wellbeing is paramount, universal, and inextricable from daily activities. ‘Stealthy’ approaches to mental health support, including embedding wellbeing within the curriculum, are gaining traction in Higher Education (Advance HE, 2017). Though the practice of combining researcher development and wellbeing support is not new, literature is lacking. Here, we present and evaluate a novel, stakeholder-led, open-source wellbeing initiative for PGRs.

To summarise, the project aimed to: prevent the development of mental health issues by promoting good working practice and self-care; facilitate early intervention by equipping PGRs to notice early warning signs and act before problems escalate; avoid and reduce stigma by promoting cultural change towards accepting wellbeing as part of researcher development and initiating dialogues; and create networks of social support among PGRs.

Evaluation

Leaders and attendees completed anonymous, online feedback surveys after each Researcher Toolkit workshop. The evaluation's objectives were:

1) To assess the Toolkit's success in being:
    a) Universally appealing to a diverse range of PGRs
    b) Enjoyable
    c) Helpful
    d) Worthwhile: PGRs would recommend workshops to peers and would consider attending another

2) To assess the Toolkit's acceptability for Workshop Leaders, in that Leaders would:
    e) Enjoy delivering the sessions
    f) Feel the sessions were well received by attendees
    g) Feel adequately prepared

3) To investigate Leaders' and attendees' experiences of the Toolkit, including perceived benefits and suggested improvements

Method

Participants

Workshop Leaders: The 20 Leaders included: international (5; 25%), home (12; 60%), and EU (3; 15%); funded (13; 65%), self-funded (3; 15%) and self-funding writing-up (4; 20%); part-time (7; 35%) and full-time (13; 65%) students, mean age = 35.5, SD = 8.13, median = 34, age range = 26-56, 14 females. Leaders were studying: business (5; 25%); biomedical sciences (2; 10%); computing (2; 10%);

health studies (2; 10%); geography (2; 10%); art, media, or performing arts (2; 10%); education, (1; 5%); psychology (1); criminology (1); engineering (1); and marine sciences (1). We received 27 feedback forms from Leaders (34% response rate).

Attendees: We received 47 feedback forms from attendees (30% response rate). Across all workshops, 30 (64%) responses were from females and 17 (36%) from males. Most responses (12; 26%) were from 21-25 year-olds, followed by 26-30 (10; 21%); 31-35 (5; 11%); 36-40 (5; 11%); 46-50 (4; 9%); 60-69 (3; 6%); 51-55 (2; 4%); and 41-45 (1; 2%); one preferred not to say. Nine responses (19%) were from part-time students, 38 (81%) from full-time students. Most responses were from university-funded students (27; 57%), 17 (36%) were from self-funded students (one preferred not to say). Most responses (27; 57%) were from home students, 10 (21%) were from international students and 10 from EU students. Most responses (14; 30%) were from students 1-2 months in, followed by 2-3 months (9; 19%); 1-2 years (9; 19%); 2-3 years (6; 13%); 4-6 months (3; 6%); 6-12 months (2; 4%); 3-4 years (2; 4%); and 4-5 years (2; 4%)[1].

Materials

Workshop attendee questionnaire: Attendees provided demographic information and then rated how much they enjoyed the workshop and explained what they found most and least enjoyable. They then rated how helpful they found the workshop and explained what they found most and least helpful. They rated the degree to which the workshop matched their expectations (based on title and advertising) and explained their rating. Attendees then rated how likely they were to

---

[1] As feedback was anonymous and PGRs could attend up to four workshops, the demographic data may include multiple responses from the 32 PGRs who attended more than one session.

recommend the session to other PGRs, and how likely they were to attend another, and explained each rating. Additional open-ended questions included, ‘What did you gain from the workshop?’, ‘Can you suggest any improvements?’, and ‘Any other comments?’.

Workshop Leader questionnaire: Leaders rated how much they enjoyed delivering the workshop and explained what they found most and least enjoyable. They then rated how well they felt the workshop was received by attendees, and the degree to which they felt prepared to deliver it, and explained each rating. Final questions were, ‘Now that you have delivered this workshop, would you make any changes to your training sessions? Please explain.’, ‘Can you suggest any improvements to the design of this workshop?’, and ‘Any other comments?’.

Procedure

Ethical approval was granted by the University of Plymouth Faculty of Health and Human Sciences Research Ethics Committee.

Each workshop was delivered five times in person and once online. They ran between November 2018 and March 2019. PGRs could sign up to any workshops in any order.

Following each session, Leaders and attendees were emailed an anonymous, online questionnaire. Participation was voluntary. Webinar data is not reported here.

Analysis

Ratings were provided on Likert scales scored 1 (Not at all) to 5 (Extremely) and are presented as percentages.

Qualitative data across all workshops for both groups (Leaders and attendees) were pooled, transcribed then thematically analysed by LS and DD (independently)

using the 6-step approach of Braun and Clarke (2006). Interpretation was data-driven using a realist approach. Each response could have multiple codes.

LS and DD compared their analyses and scrutinised themes based on Patton's (1990) criteria for internal homogeneity and external heterogeneity. Once a clear set of themes and subthemes was reached, transcripts were reviewed by LS, DD, and SH. Themes and subthemes are presented within Table II and summarised and discussed within an analytic narrative.

Reflexivity: Data were obtained anonymously to reduce impact of face-to-face collection. Analysis was data-driven, reducing potential bias resulting from pre-existing theoretical predictions. To minimise the impact of prior assumptions: i) data were collected anonymously; ii) data analysts did not design workshops; iii) two analysts worked independently; iv) analysis was documented for transparency; v) final themes were reviewed by SH, who did not conduct the analysis.

Results

Engagement

Workshops and webinars were attended by 116 individual PGRs, meaning we reached 26% of the PGR population overall. 84 PGRs (72% of total) attended just one session; 21 (18%) attended two; 7 (6%) attended three; 3 (3%) attended all four; and 1 (1%) not only attended all four workshops, but repeated one as a webinar (164 total attendances).

In total, across the 4 classroom workshops, there were 123 attendees. Mean attendance per session was 6.15, SD = 3.48, median 5.5; mean attendance per workshop was 30.75, SD = 12.09, median = 27.

Satisfaction

Attendee ratings were overwhelmingly positive: at least three-quarters answered four of the questions with 4 or 5 (Extremely). The exception was ‘Was the workshop what you expected based on the title and description’, which was answered 4 or 5 by only 55%. Leaders’ ratings were even more positive, with no ratings of 2 or 1, and at least 89% giving ratings of 4 or 5 (figure 1).

Figure 1: Response ratings from Workshop Leaders and attendees

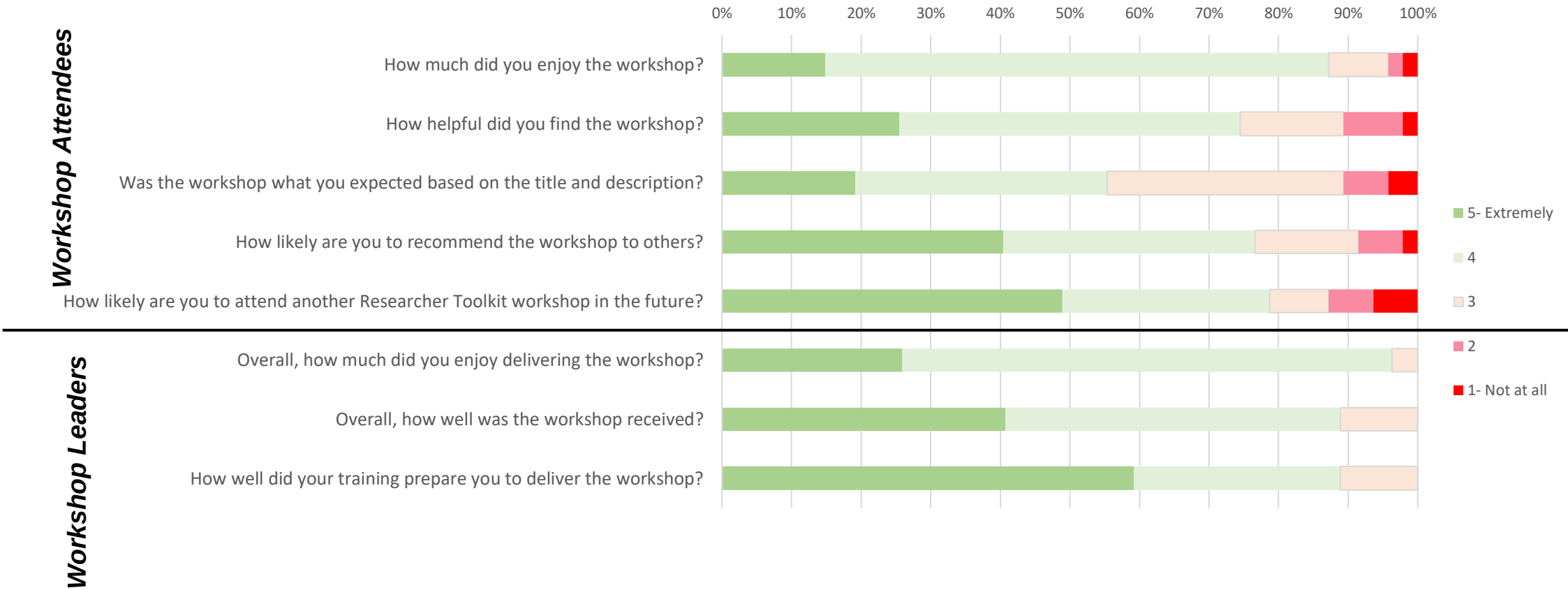

Table II: Themes and subthemes mapped to groups (Workshop Leaders and attendees)

Main themes	Leaders	Attendees	Subthemes	Leaders	Attendees
Meeting new peers	x	x	1.1 Value of exchanging and sharing experiences	x	x
			1.2 'It's not just me'	x	x
			1.3 Providing and facilitating peer meetings is fulfilling	x	
Health and wellbeing benefits	x	x	2.1 It is ok to prioritise health and wellbeing		x
			2.2 Wellbeing improves productivity	x	x
			2.3 It is ok to take a break	x	x
			2.4 Value of embedding mental health within researcher development		x
			2.5 Usefulness of Researcher Toolkit techniques		x
Group sizes	x	x	3.1 Preference for small groups		x
			3.2 Participation anxiety		x
			3.3 Leaders adapt well to small groups	x	x
			3.4 Smaller groups are harder to facilitate	x	
Engagement during workshops	x	x	4.1 Overcoming anxiety		x
			4.2 Value of icebreakers in learning about cultural differences	x	x
			4.3 Lively discussions are positive and enjoyable	x	
Perceived positive changes	x	x	5.1 Motivation	x	x

			5.2 Confidence		x
			5.3 Goal setting		x
Suggestions for improvement	x	x	6.1 Bigger rooms and refreshments	x	x
			6.2 Fewer slides and more spontaneous content		x
			6.3 More universally engaging activities	x	
Value of peer delivery	x	x			
Leader Training	x		8.1 Training in classroom management	x	

Thematic analysis

Theme 1: Meeting new peers

The project aimed to facilitate social support networks. In support, both Leaders and attendees valued peer-integration:

> *Attendee: "…the best thing I enjoyed and that keeps me coming back is to get to know new people, to get to know other students in a good atmosphere…"*

The value of peer-integration lay in the opportunity to share experiences (subtheme 1.1) and in learning that other students face similar challenges (subtheme 1.2). For example, students shared expectations and anxieties in a 'speed dating' exercise (see Table I), which destigmatises concern-sharing:

> *Attendee: "…and I shared the expectations and anxieties with other students, which released my stress…"*

> *Attendee: "I feel less anxious, due to realisation that others share my same fears."*

> *Attendee: "…the open communication and support I get out of these sessions… second to none."*

For Leaders, facilitating peer-integration was fulfilling and rewarding (subtheme 1.3):

> *WL: "Just to have a chance to be part of helping to get together…it is so important and feels good for me as well as them…"*

Theme 2: Health and Wellbeing

Despite our discreet approach, health and wellbeing was a major theme for both groups. Branding sessions as researcher development maximised engagement

but circumvented stigma rather than tackling it directly. We therefore relied upon the workshop content to reduce stigma and normalise wellbeing, for which subthemes 2.2 and 2.4 provide strong support:

> *Attendee: "The subtle and diverse approach in discussing mental health was good."*

Leaders also benefitted from this approach:

> *WL: "I enjoyed delivering the content on thoughts, feelings and behaviours. It was also good to see a lot of techniques worked when I tried them out on myself, for my own productiveness and benefit…"*

Workshops were as expected, based on titles and advertising, for only 55% of attendees. Some students found wellbeing-related content surprising yet beneficial, indicating that this is not a negative finding:

> *Attendee: "…all the tips to avoid negative thoughts were a surprising, but useful, well-integrated part of the session."*

Crucially, no students complained about it. In fact, the usefulness of the Toolkit techniques formed subtheme 2.5:

> *Attendee: "Good refresher on key principles of CBT and behaviour modification which I have since tried to use a bit more consciously… very useful for my wellbeing."*

The project aimed to prevent the onset of problems by promoting self-care. Accordingly, PGRs felt empowered to prioritise wellbeing (subtheme 2.1) and self-

care (subthemes 2.3 and 2.5). Workshops were successful in encouraging critical evaluation of harmful working practice, and this was reassuring for PGRs:

Attendee: "…that working 3-5 hours highly productively with recreation and rest breaks is much better than 7-8 hours pure slog. It seems obvious, but it's nice to know that's not expected of you here or that it is seen as a good way to work… it's not."

Theme 3: Group sizes

Attendees preferred smaller groups as they allow more in-depth discussion (subtheme 3.1). They particularly valued Leaders' own insights within these intimate settings (subtheme 3.3).

Attendee: "…being in this smaller group, it really helps to discuss things on a real personal level, to open up about things…"

The majority of students found discussions extremely valuable (theme 1), but anxiety made participation challenging for some (subtheme 3.2). It is therefore worthwhile to run webinars for students who may prefer this format.

Attendee: "…opening up in a small group about my feelings and issues was really not easy for someone with anxiety."

Leaders reported having to work harder with smaller groups (subtheme 3.4), partly due to difficulty in managing the dynamic when Leaders outnumbered attendees.

WL: "I think the small number of attendees made wider discussion and reflection on the exercises difficult although we had 3 students to 4 workshop

leaders so it was a demanding balancing act to get the interaction levels right."

Theme 4: Engagement during workshops

Workshops were designed to be engaging: activities were interactive and encouraged PGRs to reflect upon, and apply learning to, their own circumstances and experiences. Attendees engaged well with Toolkit activities. For Leaders, this was evidenced in lively discussion (subtheme 4.3):

WL: "Students engaged well in the activities and lively discussions indicating they enjoyed it."

Both groups valued learning about different social and research cultures, particularly through ice-breakers (subtheme 4.2):

Attendee: "Icebreaker exercises were helpful to learn about students and their cultures…"

However, some attendees found ice-breakers challenging (subtheme 4.1):

Attendee: "Ice-breaker exercise (speed dating) was challenging for one with anxiety."

For others, the speed-dating exercise was particularly beneficial in *relieving* anxiety (theme 1). Offering both classroom and online delivery allows students to choose how to engage.

Theme 5: Perceived positive changes

It is crucial that students apply learning to their wider experiences. Both groups spontaneously remarked upon positive changes, including increased motivation (subtheme 5.1), improved confidence (subtheme 5.2), and more effective goal-setting (subtheme 5.3).

Attendee: "I feel reactivated and motivated"

Attendee: "I really feel like I have more confidence in approaching my supervisor, even with perhaps delicate issues."

Attendee: "…trying to apply SMART goals in my own PhD experience was fun and effective. I will continue to apply these techniques."

Theme 6: Suggestions for improvement

Suggestions for improvement predominantly involved larger rooms and refreshments (subtheme 6.1). Reflecting the value of group discussion seen across themes, some attendees suggested reducing reliance on PowerPoint slides to allow more spontaneously generated content:

Attendee: "Less slides, content to be created by the hosts… flexibly, it gives more time to talk and get to know each-other, share experiences, rather than having to cover what is in the presentation."

One Leader commented:

WL: "… for the same reason (different backgrounds) I felt some of the activities didn't really apply to all the participants, so it was a bit more difficult to deliver the content making sure that was relevant for all of them. So, maybe in the future we can be more inclusive across tasks?"

The Toolkit is not discipline specific and covers the general PGR experience. Inclusivity was at the forefront of design and was part of the rationale for co-creation with diverse PGR stakeholders. It would be impossible for every activity to apply to everyone equally at one point in time. Activities apply to most PGRs and are adaptable. Moreover, they are beneficial throughout PGR study and beyond, so their

utility may increase as time progresses. This comment reinforces the need to support a diverse range of Leaders in flexible delivery.

Theme 7: Value of peer delivery

Value of peer delivery was identified as a separate theme to *Meeting new peers* (Theme 1) because some respondents placed particular importance on peers not only being present but *leading* the session. This is of particular interest because peers can meet in any typical researcher development session: the Toolkit is unique in that it is peer-delivered. We employed peer delivery to create a non-threatening environment in which to discuss delicate and stigmatised topics. In support, both groups emphasised the value of peer delivery in building trust and rapport:

> *Attendee: "…great to have the opportunity to discuss PhD challenges and ways to overcome them with other PhD students delivering… they can understand where I am coming from."*

> *WL: "We had a lot of immediate good feedback after the session… it shows how they trust us and want to hear fellow student perspectives."*

Theme 8: Workshop Leader Training

Given the positive effects of supporting roles, we expected that Leaders would benefit from the programme. Nonetheless, we mitigated risk of burdening Leaders by providing comprehensive training. All Leaders felt well prepared:

> *WL: "The training was well delivered and prepared us well; when delivering the workshops, the material felt familiar."*

However, some negative comments centred around classroom management (subtheme 8.1). One PGR attended all four workshops and was consistently disruptive and disengaged, frequently challenging Leaders.

> *WL: "…some more on how to handle students who think they are better at this than us and try to take over, or simply ignore us and then talking loudly to people next to them."*

One comment indicated that Leaders would benefit from discussing and considering the wider context and limitations of the Toolkit (discussed further below):

> *WL: "One of the attendees… said that what we were saying was a mere 'sticking plaster' and did not deal with the deep-rooted problems associated with being a PhD student such as lack of time etc… I felt a bit unprepared for such remarks…"*

Discussion

Attendees found the workshops enjoyable, helpful, and worthwhile (objective 1). Leaders overwhelmingly enjoyed delivering workshops, felt they were well received, and felt adequately prepared to deliver them (objective 2). Objective 3 concerned the experiences of Leaders and attendees. The qualitative analysis thereof supported the project's wider aims: to prioritise wellbeing and self-care, act on early warning signs before problems develop, and reduce stigma around mental health. Health and wellbeing was a major theme, and PGRs spontaneously mentioned employing and benefitting from positive working practices and Toolkit

techniques, such as taking breaks and setting realistic goals. Overall, the programme aimed to foster a positive and supportive research culture. Though only short-term outcomes can be assessed at this stage, these overwhelmingly positive results are highly encouraging.

The Researcher Toolkit is universally appealing to a diverse range of PGRs. Sessions were voluntary yet engaged 26% of the PGR population, and 28% of attendees attended more than one session. Compared to previous, less discreet wellbeing workshops (e.g. ‘Coping with anxiety’), the Toolkit was extremely well attended. This finding supports the hypothesis that more discreet branding would maximise engagement. Though the sessions were only as expected for 55% of attendees, the otherwise positive ratings and comments suggest that this is not a negative finding. Crucially, the Toolkit was successful in initiating dialogues around wellbeing and encouraging PGRs to reflect upon their own wellbeing, because the peer-model facilitated open discussion of delicate topics (Devenish, 2009). No PGRs complained about the wellbeing-related content.

In accordance with the literature, PGRs particularly valued the peer-support approach (Devenish, 2009; Nolan, 2018). Previous research demonstrates its value in international and online cohorts (Berry, 2017; Lee, 2017), and in furthering progress (Kumar & Aitchison, 2019; Meschitti, 2019). We extend these findings to the diverse PGR body as a whole, and to improving mental health literacy and general PGR experience. The approach provided social companionship to mitigate isolation (Vitae, 2018), alongside informational, emotional, and instrumental support to help PGRs navigate the practical and emotional challenges of study (Sufyan & Ali Ghouri, 2020).

PGRs found the sessions appealing, enjoyable, and beneficial, which speaks to the success of stakeholder co-creation (Millar et al., 2015). Leaders benefitted, and were not burdened, in accordance with the finding that supporting roles increase wellbeing (Schwartz & Sendor, 1999). Literature around peer supporters is limited, particularly at doctoral level. This evaluation shows that Leaders found their work meaningful and shared the psychological benefits experienced by attendees. An in-depth exploration of Leaders' experiences will be published separately.

To summarise, we present here a novel, engaging, successful and sustainable initiative to empower PGRs, improve their experience, and reduce the negative impacts of PGR study on mental health and wellbeing. We hope to support other universities in utilising and building upon our work. The Toolkit will readily translate to other UK institutions and can be adapted for use elsewhere (for example, to account for differences in social or research cultures).

Recommendations for practice

The final Researcher Toolkit training and workshop resources, incorporating PGR stakeholder feedback, are available open-source: https://www.plymouth.ac.uk/student-life/your-studies/research-degrees/toolkit/resources

Our evaluation yielded the following recommendations for practice:

- Adopt our discreet approach to branding the Toolkit to maximise PGR engagement
- Aim for groups of 5-10 PGRs, facilitated by 2 Leaders

- Host sessions in rooms large enough for groups to move around comfortably
- Offer webinars to increase inclusivity

The materials are designed to be tweaked, adapted, and updated. Diverse PGR Leaders should contribute their own unique insights and embrace idiosyncrasies in teaching style. Delivery should be flexible and should accommodate spontaneous discussion. Institutions can contribute to the evolution of the Toolkit by conducting in-house evaluations, responding to feedback, and sharing findings. As the programme evolves, we hope it initiates discussions around the wider, systemic issues with PGR study outlined below.

Limitations and wider implications

Response rates were only around 30%, though a diverse range of PGRs were represented in the data. The Kirkpatrick model of evaluating training has four levels (Kirkpatrick & Kirkpatrick, 2006). Due to the project's timescale, this analysis addressed only the first, in which participants' initial reactions are measured. The higher levels concern the degree to which learning was internalised, resulting behaviour change, and institution-level impacts. The qualitative analysis suggested that participants internalised learning and changed their behaviours because they spontaneously mentioned positive changes in their habits and wellbeing. However, the higher levels of Kirkpatrick's model and the project's longer-term outcomes were not assessed directly here. Relatedly, we did not conduct pre-post measures of wellbeing because i) the Toolkit is preventative rather than an intervention, and so state wellbeing would not necessarily change during workshops; ii) to increase engagement, the Toolkit is branded as researcher development rather than as a

wellbeing intervention. Wellbeing measures would have seemed incongruous and could have confounded our analysis by influencing attendees' expectations and experiences of the Toolkit. However, longer-term projects could compare institution-level rates of mental ill-health in PGRs before and after introducing the Toolkit, and / or compare wellbeing in PGRs who did and did not choose to engage with the Toolkit upon commencing study. A larger evaluation conducted across multiple institutions would strengthen our conclusions.

The nature of the analysis meant that we could not follow-up on individual comments for clarity or expansion, though focus groups with Leaders were conducted and will be published separately. Provision of online support to increase accessibility is increasingly important. Toolkit webinars were a valuable alternative to classroom workshops and will be evaluated separately.

Our results have several implications for policy and practice. The amount PGRs gained from peer-delivery suggests that, at institution and sector-level, peer-integration should be a priority. Our findings also show that PGRs feel empowered when reassured that their institution prioritises wellbeing and work-life balance. These messages were successfully modelled by Leaders, but an institution's research culture is dependent upon the experiences of its staff as a whole.

It is pertinent to address the remark, "…what we were saying was a mere 'sticking plaster' and did not deal with the proper deep-rooted problems associated with being a PhD student…". A major criticism of psychotherapy in general is that it implies problems with individual minds, rather than the systems and environments they exist within (e.g. Read & Bentall, 2012). While the Toolkit empowered PGRs to

criticise harmful practice, interventions targeted at individual PGRs are only half the battle.

Wellbeing in academia is poor (Guthrie et al., 2018): one third of academics are dissatisfied with their work-life balance and do not believe that their institution promotes health and wellbeing at work (Vitae, 2019). The problems identified by Vitae (2018); particularly high workload, pressure to publish, and imposter syndrome; are synonymous with academia and represent deep-rooted, systemic failings within the sector. For PGRs, add to this the 'supervisory lottery'; limited and time-bound funding (if any); the career uncertainty caused by overwhelming (and ever-increasing) competition; and the best-case-scenario of perpetual short-term contracts. We do not pretend that the Researcher Toolkit is in any way a solution to these issues. While it is important to help individuals, the wider context of their distress cannot be overlooked. Interventions that enable or encourage individuals to function within flawed systems serve only those systems. Researcher Toolkit workshops empower PGRs to think critically about working practices and confront unfairness, but hosting institutions *must* do the same.

It is not enough to try to change individual PGRs: it is the system of postgraduate researcher funding and support that must change.

References

Barry, K.M., Woods, M., Warnecke, E., Stirling, C. and Martin, A., 2018. Psychological health of doctoral candidates, study-related challenges and perceived performance. Higher Education Research & Development, 37(3), pp.468-483.

Baumeister, R.F. and Leary, M.R., 1995. The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological bulletin*, *117*(3), p.497.

Beck, A.T. & Beck J.S. (1995). *Cognitive Therapy: Basics and Beyond*. New York: Guilford.

Beck, A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford.

Bennett, P., Williams, Y., Page, N., Hood, K. and Woollard, M., 2004. Levels of mental health problems among UK emergency ambulance workers. Emergency medicine journal, 21(2), pp.235-236.

Berry, S., 2017. Student support networks in online doctoral programs: Exploring nested communities. *International Journal of Doctoral Studies*, *12*, p.33.

Copeland, M. E. (2002). Wellness Recovery Action Plan: A system for monitoring, reducing and eliminating uncomfortable or dangerous physical symptoms and emotional feelings. *Occupational Therapy in Mental Health*, *17*(3-4), 127-150.

Crabtree, J.W., Haslam, S.A., Postmes, T. and Haslam, C., 2010. Mental health support groups, stigma, and self-esteem: Positive and negative implications of group identification. *Journal of Social Issues*, *66*(3), pp.553-569.

Devenish, R., Dyer, S., Jefferson, T., Lord, L., van Leeuwen, S. and Fazakerley, V., 2009. Peer to peer support: The disappearing work in the doctoral student experience. Higher Education Research & Development, 28(1), pp.59-70.

Duckworth, M. P. (2009). Assertiveness skills and the management of related factors in O'Donohue, W. T., Fisher, J. E., & Hayes, S. C. (Eds.). (2004). *Cognitive behavior therapy: Applying empirically supported techniques in your practice*. John Wiley & Sons.

Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: an experimental investigation of gratitude and subjective well-being in daily life. *Journal of personality and social psychology*, 84(2), 377.

Ganguly, S., Kulkarni, M. and Gupta, M., 2017. Predictors of academic performance among Indian students. *Social Psychology of Education*, *20*(1), pp.139-157.

Guthrie, S., Lichten, C.A., Van Belle, J., Ball, S., Knack, A. and Hofman, J., 2018. Understanding mental health in the research environment: A rapid evidence assessment. Rand health quarterly, 7(3).

HEFCE 2012, Rates of qualification from postgraduate research degrees, HEFCE, viewed 17th June 2020 <http://www.ukcge.ac.uk/media/Download.aspx?MediaId=1314>

HESA 2019, Higher Education Student Statistics: UK, 2017/18; Student numbers and characteristics, HESA, viewed 29th May 2020 <https://www.hesa.ac.uk/news/17-01-2019/sb252-higher-education-student-statistics/numbers>

HSE 2019, Work-related stress, anxiety or depression statistics in Great Britain, 2019, Health and Safety Executive, National Statistics, viewed 29th May 2020, <https://www.hse.gov.uk/statistics/causdis/stress.pdf>

Kirkpatrick, D. and Kirkpatrick, J., 2006. *Evaluating training programs: The four levels*. Berrett-Koehler Publishers.

Kumar, V. and Aitchison, C., 2018. Peer facilitated writing groups: a programmatic approach to doctoral student writing. *Teaching in Higher Education*, *23*(3), pp.360-373.

Lawlor, K.B., 2012. Smart goals: How the application of smart goals can contribute to achievement of student learning outcomes. In *Developments in business simulation and experiential learning: Proceedings of the annual ABSEL conference* (Vol. 39).

Lee, S., 2017. Peer support for international doctoral students in managing supervision relationships. Journal of International Students, 7(4), pp.1096-1103.

Levecque, K., Anseel, F., De Beuckelaer, A., Van der Heyden, J. and Gisle, L., 2017. Work organization and mental health problems in PhD students. Research Policy, 46(4), pp.868-879.

Martinsuo, M. and Turkulainen, V., 2011. Personal commitment, support and progress in doctoral studies. Studies in Higher Education, 36(1), pp.103-120.

McManus, S., Meltzer, H., Brugha, T. S., Bebbington, P. E., & Jenkins, R., 2009, *Adult psychiatric morbidity in England, 2007: results of a household survey*, The NHS Information Centre for health and social care, viewed 2nd June 2020, < https://digital.nhs.uk/data-and-information/publications/statistical/adult-psychiatric-morbidity-survey/adult-psychiatric-morbidity-in-england-2007-results-of-a-household-survey>

Meschitti, V., 2019. Can peer learning support doctoral education? Evidence from an ethnography of a research team. *Studies in Higher Education*, *44*(7), pp.1209-1221.

Mineka, S., & Kelly, K. A. (1989). *The relationship between anxiety, lack of control and loss of control.* In A. Steptoe & A. Appels (Eds.), *Stress, personal control and health* (p. 163–191). John Wiley & Sons.

Moate, R.M., Gnilka, P.B., West, E.M. and Rice, K.G., 2019. Doctoral student perfectionism and emotional well-being. *Measurement and Evaluation in Counseling and Development*, *52*(3), pp.145-155.

Nolan, A.W., 2018. The Importance of a Successful Peer Support Group. *Women Scholars: Navigating the Doctoral Journey*, p.59.

Repper, J. and Carter, T., 2011. A review of the literature on peer support in mental health services. Journal of mental health, 20(4), pp.392-411.

Smith, M.M., Vidovic, V., Sherry, S.B., Stewart, S.H. and Saklofske, D.H., 2018. Are perfectionism dimensions risk factors for anxiety symptoms? A meta-analysis of 11 longitudinal studies. *Anxiety, Stress, & Coping*, *31*(1), pp.4-20.

Spronken-Smith, R., Cameron, C. and Quigg, R., 2018. Factors contributing to high PhD completion rates: a case study in a research-intensive university in New Zealand. Assessment & Evaluation in Higher Education, 43(1), pp.94-109.

Sufyan, M. and Ali Ghouri, A., 2020. Why Fit in When You Were Born to Stand Out? The Role of Peer Support in Preventing and Mitigating Research-Related Stress among Doctoral Researchers. *Social Epistemology*, *34*(1), pp.12-30.

Schwartz, C.E. and Sendor, R.M., 1999. Helping others helps oneself: response shift effects in peer support. *Social science & medicine*, *48*(11), pp.1563-1575.

Thoits, P.A., 2011. Mechanisms linking social ties and support to physical and mental health. *Journal of health and social behavior*, *52*(2), pp.145-161.

UUK 2018, Minding our Future, Universities UK, viewed 29th May 2020, <https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2018/minding-our-future-starting-conversation-student-mental-health.pdf>

UUK 2019, Higher Education in Facts and Figures, Universities UK, viewed 25th June 2020, <https://universitiesuk.ac.uk/facts-and-stats/data-and-analysis/Documents/higher-education-facts-and-figures-2019.pdf>

Vitae 2016, What do research staff do next?, Vitae, viewed 17th June 2020, <https://www.vitae.ac.uk/vitae-publications/reports/vitae-what-do-research-staff-do-next-2016.pdf>

Vitae 2018, Exploring wellbeing and mental health and associated support services for postgraduate researchers, Vitae, viewed 29th May 2020, <https://re.ukri.org/documents/2018/mental-health-report/>

Vitae 2019, Careers in Research Online Survey 2019, Vitae, viewed 17th June 2020, < https://www.vitae.ac.uk/impact-and-evaluation/cros>

Waight, E. and Giordano, A., 2018. Doctoral students' access to non-academic support for mental health. Journal of Higher Education Policy and Management, 40(4), pp.390-412.