Understanding wellbeing, burnout and self-efficacy of postgraduate research students in the UK

By Michael Sanders[1], Emma Stockdale[2] and Shibeal O'Flaherty[3]

June 2023

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[1] What Works Centre for Wellbeing and King's College London
[2] PhD Candidate, King's College London and NEST
[3] King's College London

About the authors

Michael Sanders is an Evidence Associate at What Works Centre for Wellbeing and a Professor of Public Policy at The Policy Institute, King's College London. He has previously served as the Founding Chief Executive of What Works for Children's Social Care, and Chief Scientist at the Behavioural Insights Team.

Emma Stockdale is a final year PhD Candidate at the Department of Political Economy, King's College London and works as a Research Lead at Nest Insight. She has a master's in Occupational Psychology and a BSc (Hons) in Psychology.

Shibeal O'Flaherty is a PhD Candidate in Public Policy at King's College London. Her research is focused on designing behavioural interventions to motivate and retain public-sector employees, and testing the effectiveness of these interventions using field experiments with organisations.

About The Policy Institute, King's College London

The Policy Institute at King's College London works to solve society's challenges with evidence and expertise. Its research draws on many disciplines and methods, making use of the skills, expertise and resources of not only the institute, but also the university and its wider network.

About the What Works Centre for Wellbeing

We are an independent collaborating centre and the aim of our work is to improve wellbeing and reduce misery in the UK. We believe that this is the ultimate goal of effective policy and community action. By accelerating research and democratising access to wellbeing evidence, we develop and share robust evidence for governments, businesses, communities and people to improve wellbeing across the UK.

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Introduction

The last thirty years have seen dramatic increases in the number of people attending university, from 19% in 1990[4] to 38% in 2021[5]. At the same time, the number of people employed to teach this growing student body has also risen. This necessitated a rise in postgraduate research students - those studying for a doctorate. The doctoral student is an unusual and little studied creature. They are the non-newtonian fluid of university life - neither fully one thing, nor the other. PhD students are expected to be able to conduct independent research and, in many cases, to take on teaching responsibilities. In the UK they are mostly paid stipends to conduct research, and a wage for the time they spend teaching.

At the same time, they remain students. We do not expect them to be fully formed researchers. They work towards a qualification, and are expected to learn through a combination of direct instruction, and through an apprenticeship to one or more senior academics in the form of their supervisors. They must pass examinations in order to succeed.

Doctoral students matter a great deal for improving the diversity of higher education. They are an important gate through which most must pass on their way to academic jobs and the professoriate. Typically, the well-funded professionalised efforts to widen participation are focused on undergraduates and taught postgraduate students.

If we can diversify our doctoral cohort, and ensure that students at this level thrive, we can diversify the more senior levels of academia. This has knock-on effects on the shape of future research fields, and for the ability of undergraduate and masters students to see themselves represented in their lecturers.

In this short paper we report the results of a survey administered to 108 doctoral students in the UK between June and September 2023, which aimed to understand the lived experience and wellbeing of doctoral students.

[4] https://researchbriefings.files.parliament.uk/documents/SN04252/SN04252.pdf
[5] https://commonslibrary.parliament.uk/research-briefings/cbp-7857/

Survey design

We collected data on students' subjective wellbeing, self-efficacy and burnout using standardised survey instruments. In addition, we captured variables relating to students' demographics, as well as free text responses to questions about their experience of their PhD.

Participant characteristics

There were 108 valid responses to the survey. The demographics and socio-economic status of participants for most of these participants are shown in table 1. Participants were recruited via convenience sampling and via direct communication from the authors or from their doctoral training partnerships.

Table 1: demographics and socio-economic status of participants

Characteristic	Number	% of sample
Female	33	61.17
Male	63	32.04
Trans/non-binary/Other	7	6.80
Age 21-25	16	15.69
Age 25+	86	84.32
Parents have no degree	32	29.63
Parents have undergraduate degree	32	29.63
Parents have masters degree or above	38	35.19
Other parental qualification	6	5.56

Quantitative Results

Subjective wellbeing

We used the ONS4, four standardised questions which assess happiness, life satisfaction, sense that life is worthwhile, and anxiety. We can look at these variables either in terms of their raw scores, or the proportion of these scores that fall into the ONS' defined bins of "high" or "low". Table 2 shows the average score in our sample for each of these variables, the proportion scoring high and low, and how this compares to the sample of undergraduate and taught postgraduate students analysed by Sanders (2023).

Table 2: Wellbeing among doctoral students in our sample, and undergraduate and taught postgraduate students from the Student Academic Experience Survey (SAES)

Metric	Score	Proportion Low	Proportion High
	Our sample (SAES)		
Satisfaction	6.6 (6.8)	0.2 (0.08)	0.64 (0.72)
Worthwhileness	6.85 (6.93)	0.18 (0.08)	0.69 (0.71)
Happy	6.25 (6.5)	0.19 (0.14)	0.55 (0.64)
Anxious	5.2 (4.3)	0.40 (0.38)	0.37 (0.42)

Overall, the wellbeing of doctoral students is lower than that of more junior students. Doctoral students are less diverse in terms of their social class background than undergraduate students, which in Sanders (2023) is identified as a risk factor for wellbeing.

Postgraduate research students in our sample are more than twice as likely to have low life satisfaction and sense of worthwhileness, and 35% more likely to have low happiness than their peers. They are also between two and nine percentage points less likely to have 'high' scores for their wellbeing. We note that postgraduate research students are marginally more likely to have low anxiety and less likely to have high anxiety, suggesting that however else their lives differ from other students, they are not more anxious.

We are not only interested in the wellbeing of the sample as a whole, but also how wellbeing varies according to the characteristics of participants. Below, we report how each of the four wellbeing scores vary with age, Year of PhD, sex and parents' highest levels of education.

Sex and wellbeing

In the sample, we see that male postgraduate research students are more likely to experience high anxiety scores and less likely to experience low anxiety scores (figure 1). They also have lower levels of high wellbeing on the other three measures and higher levels of low wellbeing.

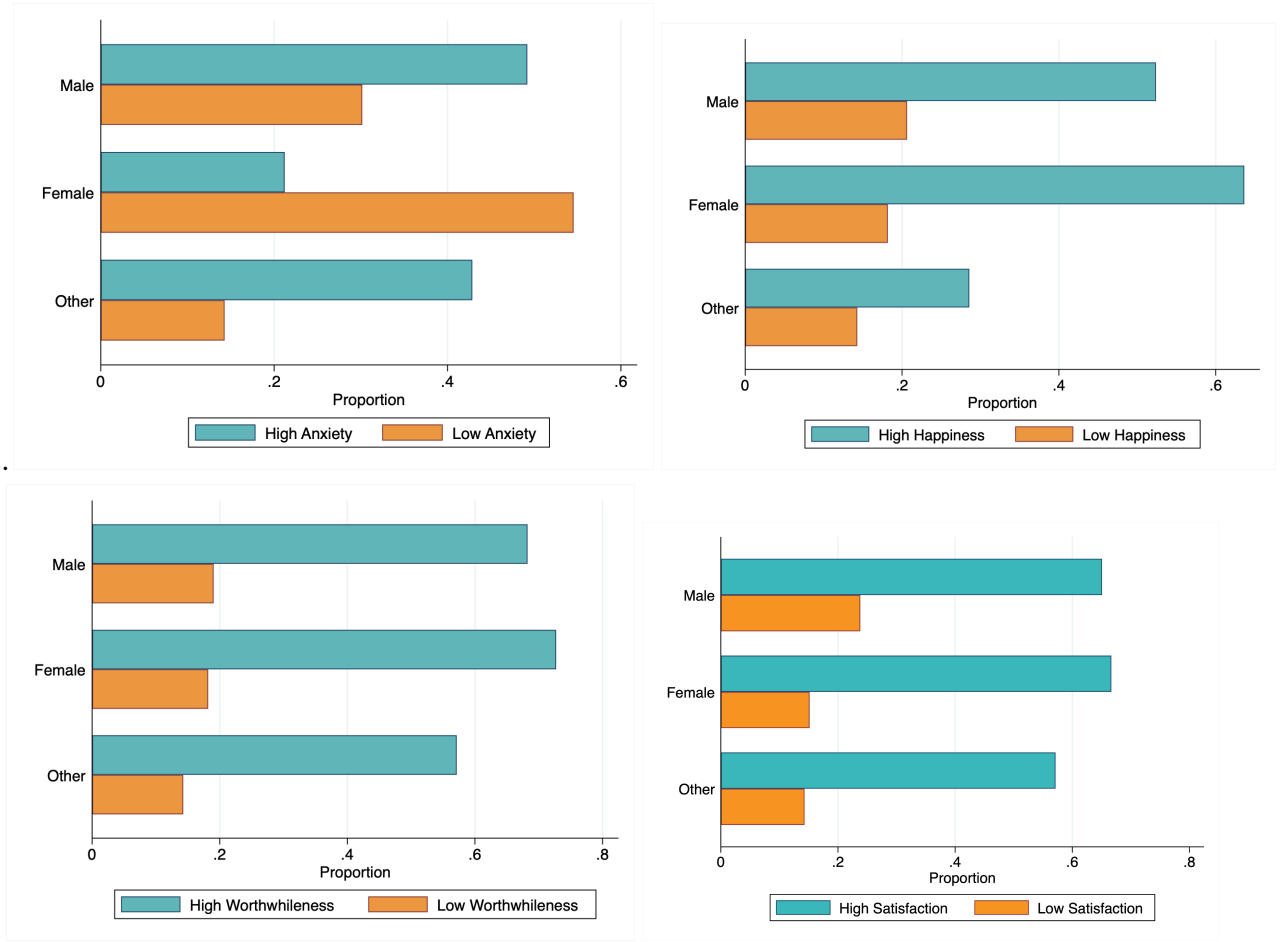

Fig. 1: proportions of high and low responses on ONS4 by sex

Age and wellbeing

Negative scores (low wellbeing, high anxiety) are generally in decline as participants get older, with a slight rise in the mid twenties in some cases. High wellbeing scores are in general on the rise over the same time period (figures 2a and 2b). Overall, older students have higher wellbeing and lower anxiety than younger students.

For high worthwhileness and satisfaction, small numbers of observations mean that high wellbeing scores reach 100% after approximately age 50.

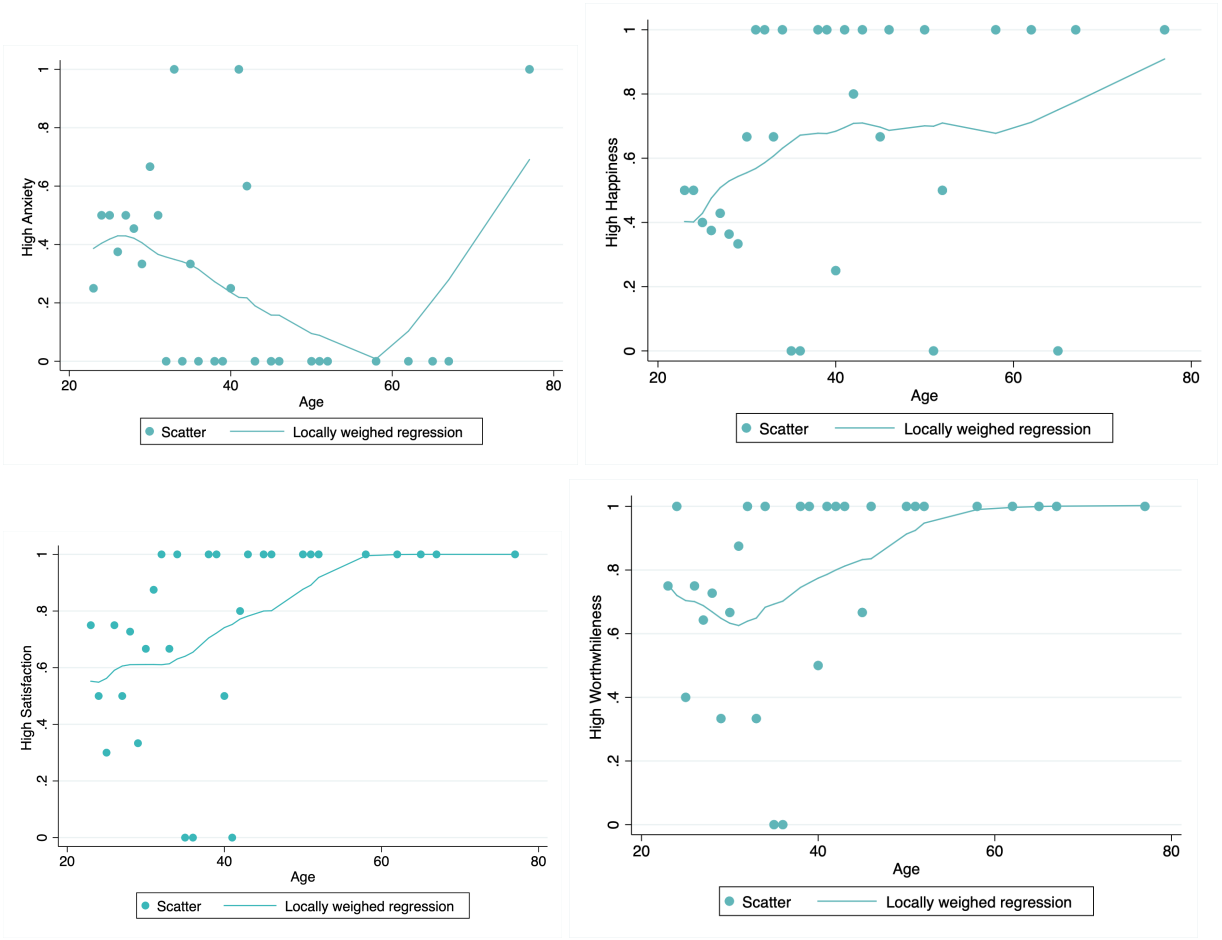

Fig. 2a: locally weighted regression estimates (Lowess) graphs for high scores on ONS4 by age.

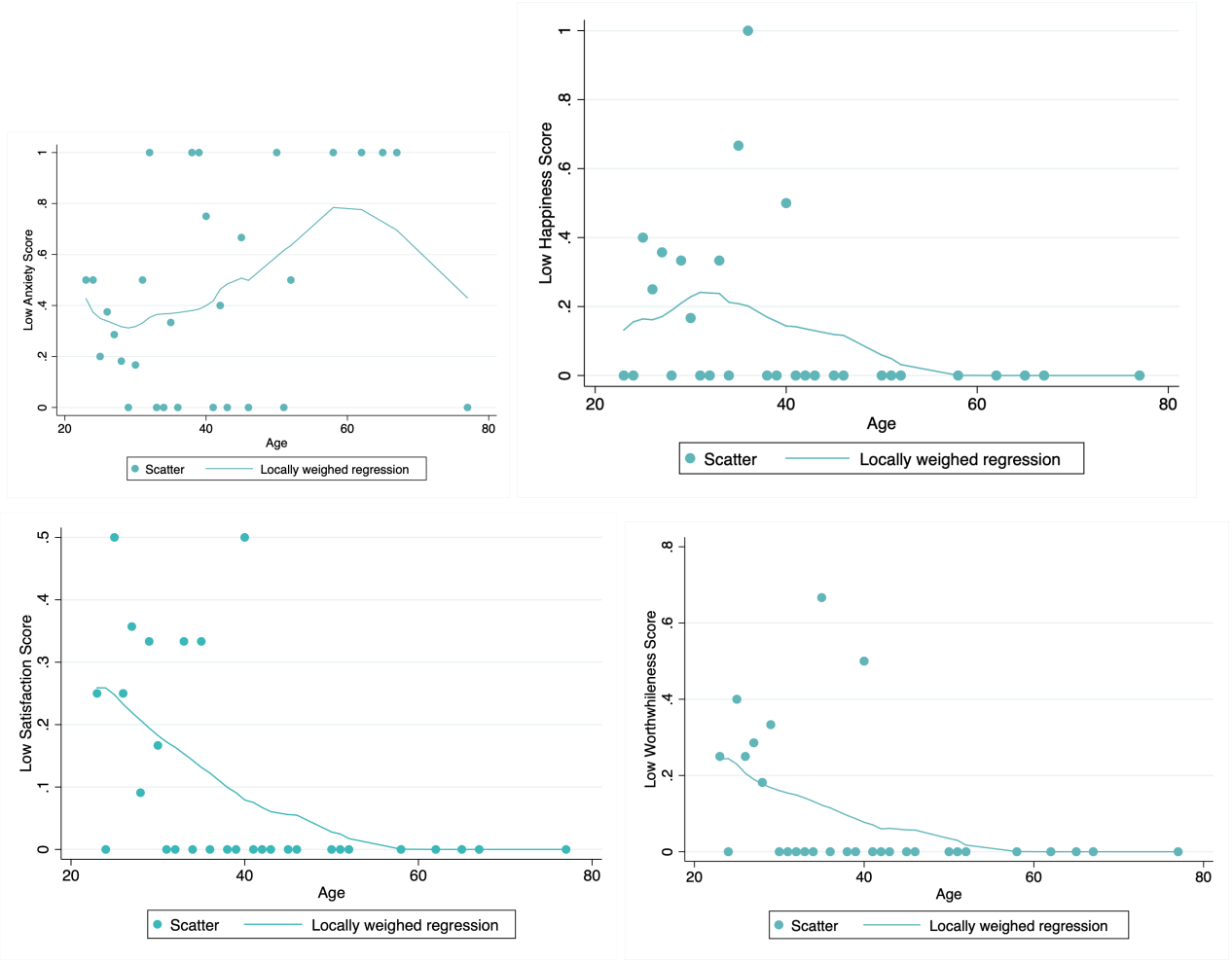

Fig. 2b: locally weighted regression estimates (Lowess) graphs for low scores on ONS4 by age.

Parents' Education and wellbeing

Parents' education takes four values:

1. No degree
2. Undergraduate degree
3. Master degree or higher
4. Other - a free text response field, which is mostly populated by respondents whose parents have professional qualifications like a Postgraduate Certificate of Education (PGCE)

Parents' qualifications are a crude proxy for two things:

1. The socio-economic status of the respondent, on the basis that parents' qualification both predicts household income of the respondent growing up, and is predicted by the social status of their grandparents.
2. A measure of social distance between the student and higher education in general and a PhD in particular.

As such, we expected student wellbeing to be higher, the higher was the qualification level of their parents.

Instead, these relationships run counter to our intuition. We find a pattern whereby students whose parents did not attend university have systematically higher chances of having high wellbeing, and lower chances of low wellbeing, than their peers whose parents had undergraduate degrees (figure 3). Students whose parents did not attend university also have same-or-better scores than students whose parents have a master degree or higher (figure 3). These findings may be a result of the relatively modest sample associated with our survey, but it warrants further investigation as it suggests that socio-economic status and social distance may be less protective of doctoral students' wellbeing than is widely supposed.

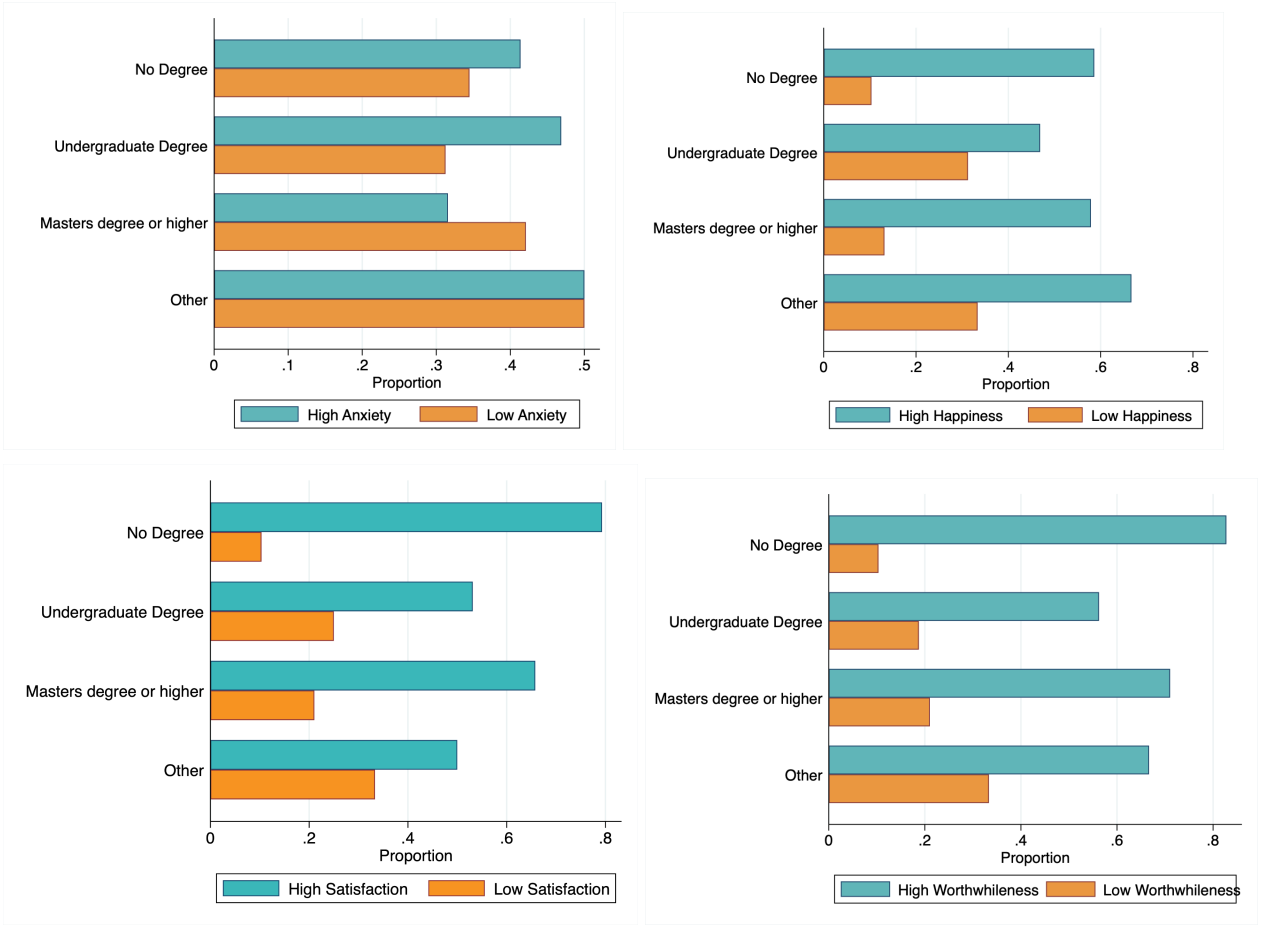

Fig. 3: proportions of high and low responses on ONS4 by parents' education

Year of PhD and wellbeing

We consider a students' progress through their PhD and how that affects their wellbeing (figure 4).

Student wellbeing scores start high, with around 80% of first year students reporting high happiness, life satisfaction and sense of worthwhile, and 70% reporting low anxiety scores. These then decline over time, with fewer than half reporting high happiness and satisfaction scores, or low anxiety scores, by their fourth year of study.

Low wellbeing scores rise, albeit less sharply, over the same time period. High anxiety scores spike in a student's second year of study, with 60% experiencing high anxiety, and then decline thereafter, albeit to a level double that seen in the first year.

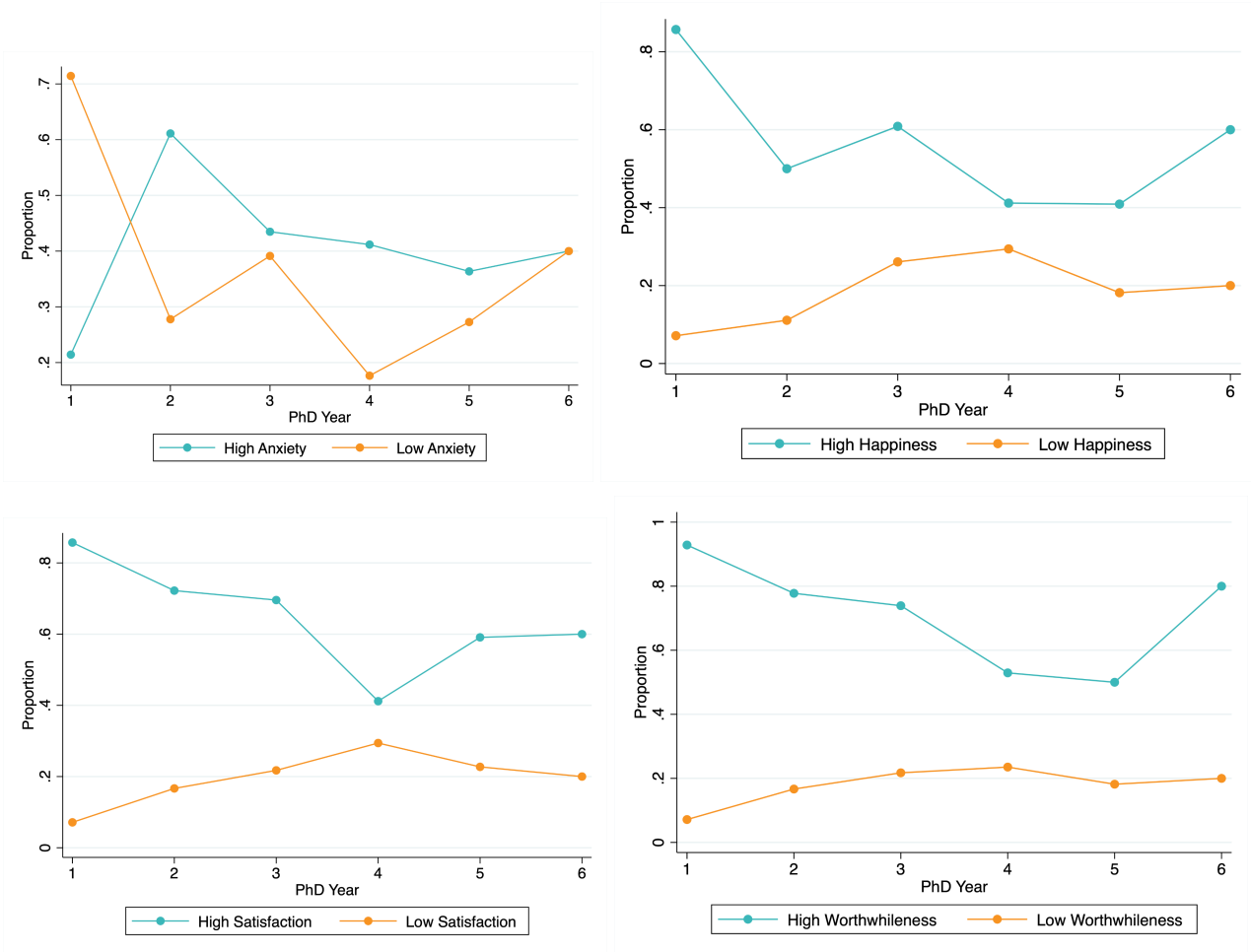

Fig. 4: Proportion of high and low response on ONS4 over PhD Year

Burnout and wellbeing

Burnout is an occupational phenomenon where workplace stress becomes chronic and is not managed. It is characterised by emotional exhaustion, increased cynicism or distance, and reduced personal accomplishment[6].

We asked a series of nine questions relating to postgraduate research student burnout[7]. We collapsed these into a single indicator of burnout taking values from one to seven, where seven is high burnout and one is no burnout.

For burnout, we see a similar pattern to wellbeing. Burnout shows a pattern of decline over student age (figure 5), and male students report higher burnout than female students on average (figure 6). Parents' educational background does not seem to be a major factor in determining the level of students' burnout (figure 7). Burnout steadily increases over the course of a students' studies, from a score of less than three in their first year to over four in their fourth year (figure 8).

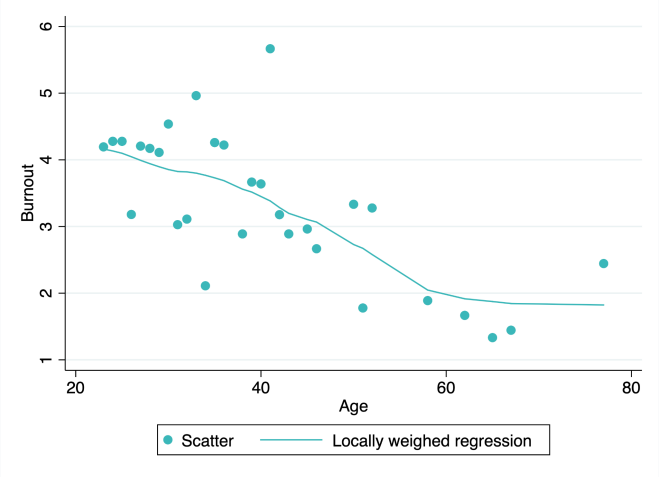

Fig. 5: level of burnout by age

[6] World Health Organisation classification 2019 https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases

[7] See the separate appendix for the full set of survey questions.

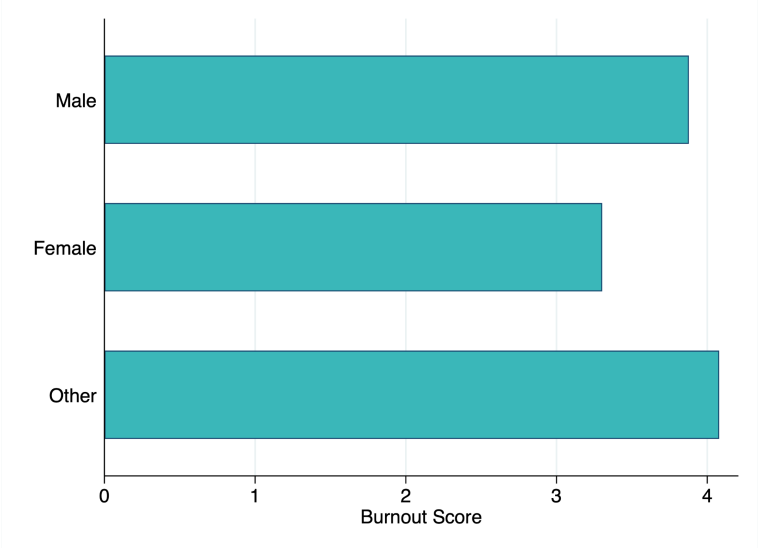

Fig. 6: level of burnout by sex

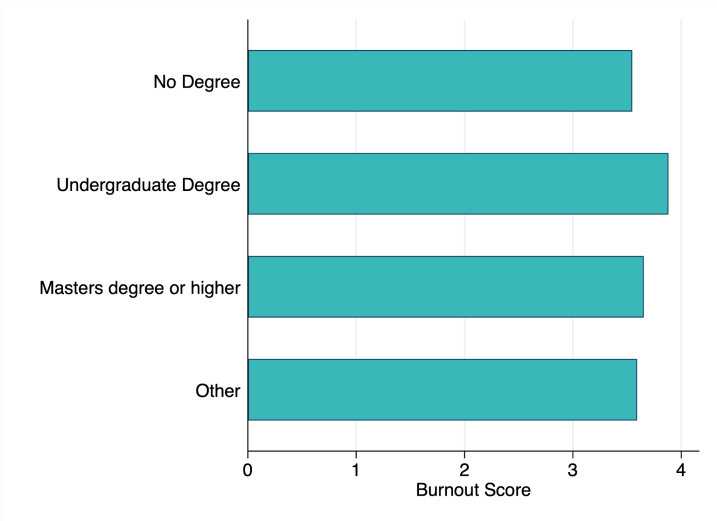

Fig. 7: level of burnout by parents' education

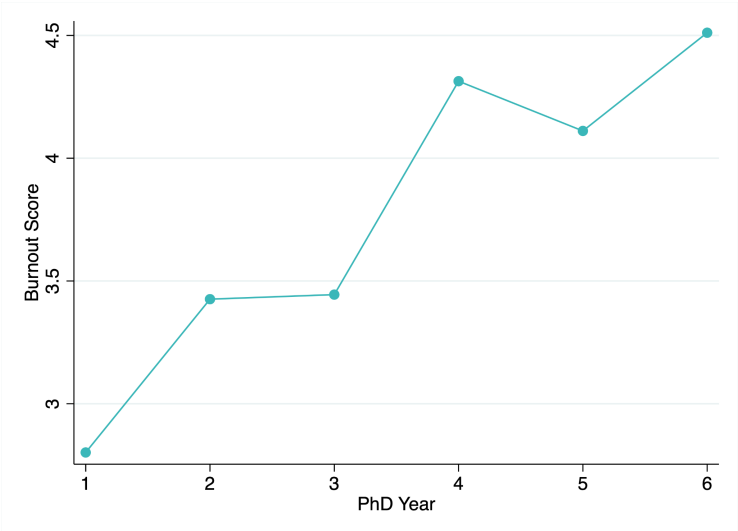

Fig. 8: level of burnout over time

Self-efficacy and wellbeing

Finally, we look at students' perceived self-efficacy - the extent to which they feel they are able to have an impact on the world, and that they feel capable, competent and useful. We asked three questions relating respondents' feelings of self-efficacy in the context of their PhD[8]. This is denominated on a one to seven scale, where one is no self-efficacy and seven is very high self-efficacy.

As we have seen with the other measures, female students appear to fare better, with generally higher self-efficacy scores (figure 10), as do older students (figure 9). Students who are the first in their family to attend university have higher self-efficacy than their peers (figure 11), and self-efficacy starts high but declines rapidly, and seemingly permanently, into the second year and beyond (figure 12).

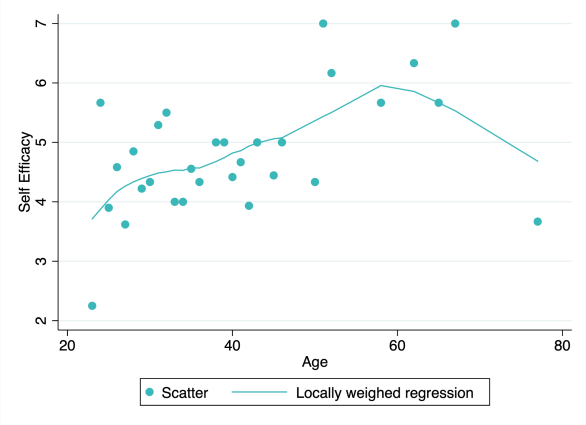

Fig. 9: level of self-efficacy by age

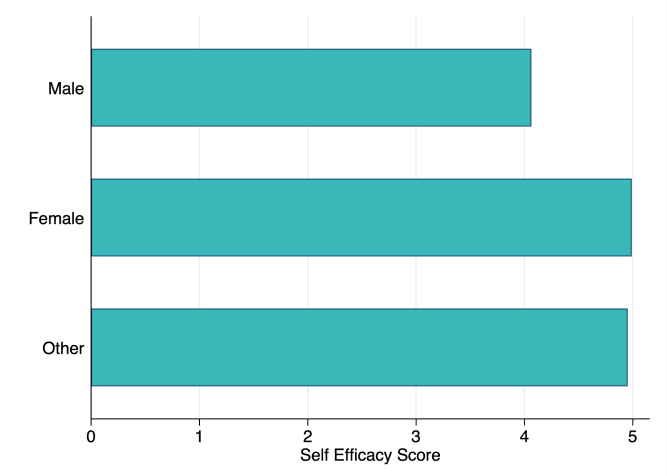

Fig. 10: level of self-efficacy by sex

[8] See the separate appendix for the full set of survey questions.

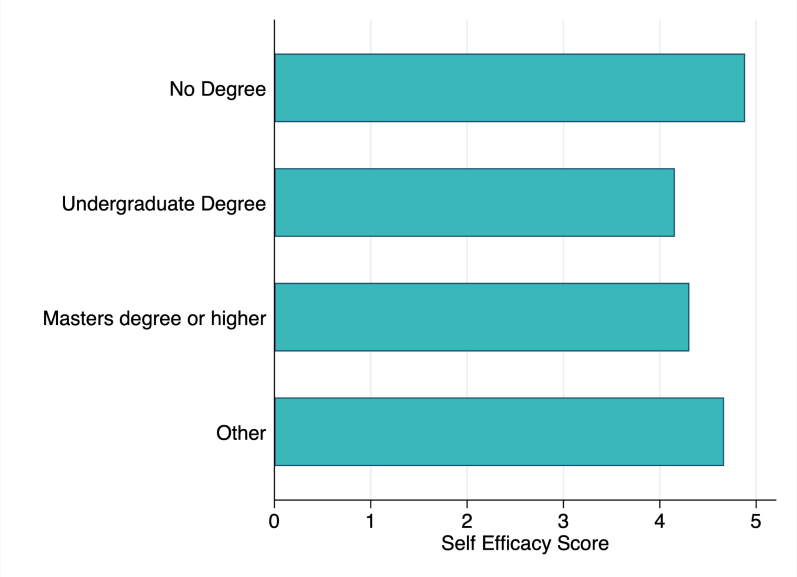

Fig. 11: level of self-efficacy by parents' education

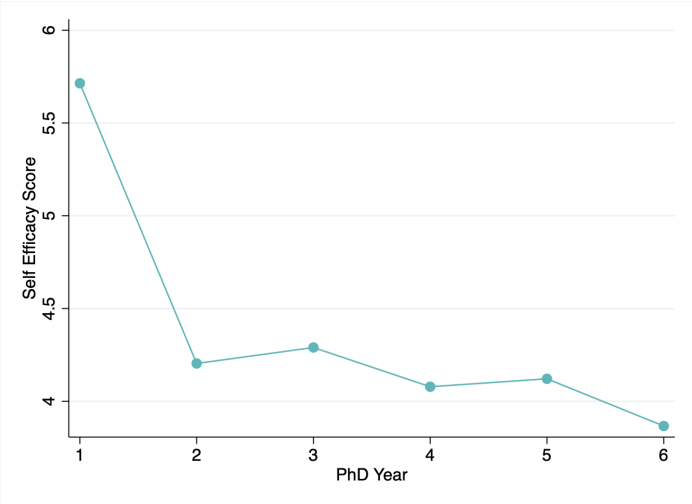

Fig. 12: level of self-efficacy over time

Qualitative results

In addition to our quantitative survey, we also asked students qualitative questions about their experience as doctoral students. Below, we identify themes that emerged from these questions.

Finance

A common theme among survey respondents was that financial struggles were a factor in their life as a doctoral student. Many feel that their stipends are not sufficient, particularly in London). This has prompted them to take on additional work, which some students reported feeling guilty about.

> *"The financial costs of a PhD, even when fully funded, the grant is not enough to live on in London."*

> *"The stipend is very low, especially as someone who is mid-career and not particularly young."*

> *"The UKRI studentship stipend for funded students is not enough to live on - especially in London, even with the London weighting."*

> *"Financial pressures have led to a lot of stress and chronic health issues."*

Supervision

The most frequent issue raised by respondents was around the quantity and quality of supervision. Several reported challenges in getting time to meet with their supervisors; supervisors having time management issues; and supervisors not being experts in their particular area of research.

> *"My previous supervisor was horrible to work with."*

> *"I've not had a supervisor meeting for the first 18 months of my PhD."*

> *"I was neglected by my supervisors and had to make a formal complaint."*

> *"I only received two supervision meetings in the whole of my third year."*

> *"They will not agree to meet with me and keep missing meetings."*

As well as these comments, there is also a sense that the incentives and priorities of students and supervisors are not aligned, and that supervisors see doctoral students as a means to their own career progression, rather than a meaningful pursuit.

> *"He just wanted to pad his CV."*
>
> *"[They] don't always have the students' best interest at heart."*

Dichotomy of a PhD

Many respondents commented on the dichotomy of a PhD - that they are neither a full member of the faculty, nor a student in the way that that word is widely understood. Responses highlighted the difficulty of balancing a PhD with their wider responsibilities.

> *"Finding the right balance between part time work and research, finding the right balance between PhD and non-PhD research."*
>
> *"I've had to work freelance to support myself."*
>
> *"Finding time amongst the demands of family, work etc is the real challenge."*
>
> *"It can be hard to explain to others."*
>
> *"The permanent feeling of guilt for not spending enough time on my PhD."*

Positives

Alongside the challenges of a PhD, there were a number of positives mentioned by respondents. These include finding friends and co-authors among their PhD cohort, being able to research something that they were passionate about, and good supervisory relationships.

> *"It's satisfying to delve deeply into a subject you're really interested in."*
> *"We all help each other out and this makes it an enjoyable and less stressful experience."*
> *"Making friends with students based across the University."*
> *"The two supervisors are literally the best role models ever and you feel the passion and get more motivated."*

Discussion

In this paper we have reported the results of a survey of postgraduate research (PhD/DPhil) students at various stages in their studies.

We have presented a mixture of findings:

- Postgraduate research students have worse wellbeing in general than their peers in taught programmes.
- Postgraduate research students have fairly high burnout scores.
- Age appears to be a protective factor for postgraduate research student wellbeing.
- Parents' highest level of education was a poor predictor of wellbeing, burnout and efficacy.

That students with the lowest socio-economic status / highest social distance from Higher Education (those whose parents did not attend higher education), had the most positive scores for these measures may be an artefact of our relatively small sample size. It suggests that further research is needed to create a more representative picture of the wellbeing of doctoral students and, if our findings are confirmed in a larger sample, to address the challenge of low wellbeing.

Given their responsibilities of research and teaching, it would also be interesting to understand postgraduate research students' wellbeing in the context of occupational data.

The negative change in all of our variables over the course of a PhD is something of serious note. Students in their second year and beyond have substantially lower wellbeing and self-efficacy, and higher anxiety and burnout than those in their first year. Second year students in particular have especially high anxiety scores, despite the fact that students who are older generally have higher wellbeing.

This aligns with existing evidence indicating qualifications can improve life satisfaction and happiness up to masters level but that over-qualification can also lead to reduced wellbeing in the job market and "frustrated achievers"[9].

While additional research is clearly needed, there is also a pressing need for supervisors, institutions and funders to do more to support students beyond their first year.

[9] https://whatworkswellbeing.org/resources/beyond-the-averages-higher-education-and-wellbeing/