A mixed-methods investigation of mental health stigma, absenteeism and presenteeism among UK postgraduate researchers

Berry, C., Niven, J.E., Chapman, L., Valeix, S., Roberts, P.E. and Hazell, C.M.

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Title: A mixed methods investigation of UK Postgraduate Researchers' Experiences of Mental Health Stigma, and its Associations with Absenteeism and Presenteeism

Short title: Postgraduate researcher experiences of mental health stigma

Authors:
Dr Clio Berry (Brighton and Sussex Medical School), Professor Jeremy E Niven (School of Life Sciences, University of Sussex, j.e.niven@sussex.ac.uk); Laura Chapman (School of Psychology, University of Sussex, l.a.chapman@sussex.ac.uk); Dr Sophie Valeix (School of Life Sciences, University of Sussex, s.valeix@sussex.ac.uk); Paul Roberts (Research & Enterprise and Centre for Higher Education and Equity Research, University of Sussex, p.e.roberts@sussex.ac.uk), Dr Cassie M Hazell (Department of Psychology, University of Westminster, c.hazell@westminster.ac.uk).

Corresponding author:
Dr Clio Berry
Lecturer in Healthcare Evaluation and Improvement
Primary Care and Public Health
Brighton and Sussex Medical School (BSMS)
Room 322 Watson Building
University of Brighton
Falmer BN1 9PH
c.berry@bsms.ac.uk

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Abstract

Purpose: Postgraduate researchers (PGRs) appear to be particularly vulnerable to mental health problems. Mental health-related stigma and discrimination may be endemic within universities, creating a threatening environment that undermines PGRs' health and wellbeing. These environmental characteristics may increase PGRs' absenteeism and presenteeism; attendance behaviours that have great personal and institutional consequences. The study of this issue, however, has been limited to date.
Originality/value: We present the first large-scale survey of PGR experiences of mental health-related stigma and discrimination, and their associations with absenteeism and presenteeism.
Methodology: This was a mixed methods psychological study using cross-sectional data provided by 3352 UK-based PGRs. Data were collected in a new national survey (U-DOC) led by a British university in 2018-2019. We used structural equation modelling techniques to test associations between workplace mental health-related stigma and discrimination, presenteeism, absenteeism and demographic characteristics. We analysed qualitative survey data with framework analysis to deductively and inductively explore associations between workplace culture, stigma and discrimination, and attendance behaviours.
Findings: We found that some PGRs report positive perceptions and experiences of the academic mental health-related workplace culture. However, experiences of mental health stigma and discrimination appear widespread. Both our quantitative and qualitative results show that experiences of mental health-related stigma are associated with greater absenteeism and presenteeism. People with mental health problems appear especially vulnerable to experiencing stigma and its impacts.
Practical implications: Key implications include recommendations for universities to improve support for PGR mental health, and to encourage taking annual leave and necessary sickness absences, by providing a more inclusive environment with enhanced mental health service provision and training for faculty and administrative staff.

Background

Mental health problems appear highly prevalent amongst postgraduate researchers (PGRs); exceeding estimates for undergraduate students, and other educated and working populations (Guthrie *et al.*, 2017; Levecque *et al.*, 2017; Hazell *et al.*, 2020). Excessive workloads, job and funding insecurity within an unsupportive, competitive, and a surveillant atmosphere appear to contribute to PGR mental health problems (Guthrie *et al.*, 2017; Levecque *et al.*, 2017; Mackie and Bates, 2019; Morrish, 2019; Berry *et al.*, 2020; Hazell *et al.*, 2020). In turn, mental health problems may undermine engagement in core academic tasks and rituals like fieldwork and networking (Birnie and Grant, 2001; Tucker and Horton, 2012). Nevertheless, disclosure is rare (Equality Challenge Unit, 2014). PGRs frequently report experiencing discrimination and bullying within universities, and most believe reporting such incidences would be professionally unsafe and unlikely to result in positive action (Cornell, 2020). Further work is needed, however, to increase psychological understandings of the nature and impacts of mental health stigma and discrimination in academia specifically. Interestingly, workplace discrimination appears to increase with the educational level of the individual with mental health problems (Brouwers *et al.*, 2016; Yoshimura *et al.*, 2018). As such, academia appears to be an environment in which mental health problems are especially common, but that may be particularly stigmatising and discriminatory, and within which people are unlikely to disclose or seek support (Tucker and Horton, 2012, 2019; Waight and Giordano, 2018; Berry *et al.*, 2020).

Psychological and behavioural impacts of mental health-related stigma are manifestations of how the environment 'gets in' to the individual (Brennan, 2004). In addition to reducing disclosure and help-seeking, workplace mental health-related stigma may increase absenteeism and presenteeism. Absenteeism refers to time off work due to sickness (Johns, 2010). Presenteeism is continuing to work with symptoms of illness (Dietz and Scheel, 2017), when feeling sufficiently unwell that time off could be taken and work performance is impaired (Johns, 2010). Presenteeism should therefore be measured both as the act of presenteeism and extent to which illness affect work productivity (Johns, 2010; Halbesleben *et al.*, 2014). Sickness absence may include absence related to illness but also to stress and distress associated with job demands (Halbesleben, Whitman and Crawford, 2014). Absenteeism, especially when chronic, can lead to poorer health and complete disengagement from the occupation (Johns, 2010). Working when unwell can be beneficial (Dietz and Scheel, 2017), however, presenteeism is associated with exhaustion and depersonalisation (Demerouti *et al.*, 2009), conflict and poor quality work (Attridge, 2008), and negative impact on colleagues (Halbesleben *et al.*, 2014). Presenteeism and absenteeism appear common within academia; with absenteeism precipitated by job stress

and presenteeism by organisational factors and mental health problems (Dietz and Scheel, 2017; Guthrie *et al.*, 2017; Kinman and Wray, 2018). The doctorate has been described as the 'solar plexus' of academia (Elmgren *et al.*, 2016), with PGRs contributing substantially to research economy and outputs (Levecque *et al.*, 2017), and to core university activities and audit frameworks for knowledge exchange, teaching, and research excellence (Elmgren *et al.*, 2016). Therefore, PGR absenteeism and presenteeism have significant institutional as well as personal impacts.

There has been little psychological study of decision-making around attending work, and limited attempt to bring the constructs of absenteeism and presenteeism together; however, recent studies have begun to consider absence practices as socially constructed in order to better understand their complexity (Johns, 2010; Halbesleben *et al.*, 2014). Drawing from social psychology, Inzlicht and colleagues' model (2009) of threatening academic environments has been used to understand women's experiences in male-dominated academic disciplines (Casad *et al.*, 2019), and can offer an explanation as to how mental health-related stigma may result in PGR absenteeism and presenteeism (Inzlicht *et al.*, 2009). The first key variable in this model is that stigmatised groups are aware of their stigmatised status and, consequently, experience uncertainty and hypervigilance in environments within which the stigmatised identity is salient (Inzlicht *et al.*, 2009). Applying this model to the context of mental health stigma, perceived and experienced mental health-related stigma could act as cues for people with mental health problems that they are unwelcome or unvalued, resulting in a sense of 'identity threat' (Murphy *et al.*, 2007). The next key variable is stigma awareness. Awareness of stigma related to their social identity causes an individual to experience social identity threat, which leads to negative self-identity, health and behavioural consequences through mechanisms such as decreased sense of control (Inzlicht *et al.*, 2009). Such an identity threat can lead to avoidance through under-performing, de-valuing or completely disengaging and leaving from the academic environment (Inzlicht *et al.*, 2009; Woodcock *et al.*, 2012; Casad, Petzel and Ingalls, 2019), which we hypothesise would manifest for PGRs as increased absenteeism. Conversely, as people in threatening environments expect stereotypes to be used to evaluate them (Inzlicht *et al.*, 2009), identity threat may engender a motivational state in which people try to disconfirm associated stereotypes (Higgins, 1997). Widespread stigmatising attitudes relating to people with mental health problems in a work context include that mental health problems are not a legitimate 'illness' but nevertheless cause individuals experiencing them to be unpredictable, dangerous and unable/unsuitable to work (Krupa *et al.*, 2009). We hypothesise, therefore, that PGRs use presenteeism as a strategy to guard against such stereotypes of fragility or incompetence. Moreover, the effects of the threatening

environment include emotional arousal and cognitive disruption, including impact on working memory (Inzlicht *et al.*, 2009); therefore, mental health stigma may contribute to presenteeism additionally by reducing productivity when at work.

The application of the model of threatening environments to th et al.,e experiences of women studying in male-dominated disciplines (Casad *et al*., 2019) found that the perception of negative campus climate and identity threat predicted greater psychological disengagement from academic study. Further empirical research supports the theoretical associations between experiencing mental health stigma and greater presenteeism *(Fox et al.*, 2016; Miraglia and Johns, 2016), and between poor institutional support and greater absenteeism and intent to leave academia (Hunter and Devine, 2016; Kinman and Wray, 2018). However, there is a need for further empirical exploration of PGRs' experiences of mental health stigma specifically (Cornell, 2020), including potential impacts, for example behavioural manifestations, and differences across groups. People who have past experiences of stigma and discrimination, such as people with mental health problems or of Black, Asian, and Minority Ethnic (BAME) identification, appear to both anticipate and react to stigma to a greater extent (Inzlicht *et al.*, 2009; Baysu *et al.*, 2011; Casad *et al.*, 2019). Females may experience gender-based stigma in academia (Casad *et al.*, 2019), yet males seem to experience greater mental health-related stigma and appear more likely to disengage academically in response (Pinel *et al*. , 2005).

The present study

We explored experiences of mental health stigma and its associations with absenteeism and presenteeism using a mixed-methods approach. We predicted quantitatively that greater perceptions and experiences of mental health-related stigma would be associated with greater absenteeism and presenteeism amongst PGRs. We predicted that males, people identifying as BAME, and people with a history of mental health problems, would report greater mental health-related stigma and, in turn, greater absenteeism and presenteeism. We deductively applied the following codes to our qualitative data: positive and negative perceptions and experiences of mental health-related attitudes and practices, and influences on absenteeism and presenteeism. We sought novel inductive themes in addition.

Methods

Design

The present study used a mixed-methods cross-sectional survey design. We took a critical realist epistemic stance (Bhaskar, 2014; Fletcher, 2017), exploring quantitative and qualitative perspectives to facilitate a rich, triangulated understanding of the constructs and

their inter-associations to identify potential demi-regularities and contradictions. The quantitative and qualitative methods were connected in a convergent triangulation design (Creswell *et al.*, 2003; Fetters *et al.*, 2013) through their selection at outset, their simultaneous collection in one survey in which they were proximally elicited, and contemporaneous analysis to facilitate iteratively co-evolving understandings. Following quantitative and qualitative analyses described below, we produced a mixed-methods matrix (O'Cathain *et al.*, 2010) to interrogate and present conclusions arising from converging and diverging evidence relating to quantitative and qualitative data.

Participants and procedure

We collected data from 3352 PGRs studying for their PhD within UK institutions. Data were collected from April 2018 to November 2019 in an anonymous online national survey, U-DOC (Understanding the mental health of DOCtoral researchers). This was a new national survey, led by a British university, to collect data relating to PGR mental health problems and putative correlates as part of a larger research programme focused on PGR mental health and wellbeing. PGRs were eligible to participate if currently studying for a PhD qualification at a UK university. In recognition of the sensitivity in asking PGRs about their mental health and workplace experiences, we asked all respondents to read a thorough information sheet and provide informed consent at the start of the online survey. Moreover, all question responses were optional, and participants were provided with details of relevant support services. This study received ethical approval from the *BLINDED* Sciences and Technology Cross-Schools Research Ethics Committee (C-REC; Reference: ER/CH283/9).

The U-DOC survey involved a larger battery of questionnaires and data that were collected from a working professional comparison group comprising UK individuals educated to Master's level working at least 0.6 whole time equivalent; these data are not reported here. Quantitative data were collected from 3352 participants, with missing data exceptions as discussed below and presented in Table I. Overall, 1292 (39%) of the 3352 participants provided free-text qualitative responses pertaining to questions used in the present study.

Measures

There are no known measures of mental health stigma in the academic university environment, or in an occupational context more broadly. We captured perceptions and experiences of inclusive and stigmatising workplace mental health-related practices by adapting the Athena Swan (Advance HE, 2020) workplace culture measure (UKRC-WISE, 2012). The Athena Swan charter and associated measure were developed to capture and improve gender-based stigma, discrimination and inequalities relating to hard-to-measure

institutional cultures and practices (Graves *et al.*, 2019; Rosser *et al.*, 2019). Respondents scored their agreement with the ten items (Table 1) from 1 (strongly agree) to 7 (strongly disagree). Higher scores reflect more positive perceptions and experiences.

Absenteeism and presenteeism were captured using items from the Institute for Medical Technology Assessment Productivity Cost Questionnaire (iMTA PCQ) – Presenteeism Scale (Bouwmans *et al.*, 2015). As both the act and productivity impact of presenteeism are important to measure, the presenteeism scale includes days spent in presenteeism in the past month, and the severity of the presenteeism rated from 0 (unable to do any work on these days) to 10 (able to do as much as normal). Absenteeism is captured as days spent absent in the past month. The iMTA PCQ is a validated, standardised measure considered understandable to the general public (Bouwmans *et al.*, 2015).

Participants were asked to self-report their gender and ethnicity. Participants were asked to self-report lifetime and current prevalence of mental health problems i.e. whether they ever had experienced mental health problems and if yes, whether they were currently experiencing mental health problems. For current purposes, affirmative responses to both questions were coded together creating a binary lifetime prevalence variable (0 no, 1 current or historical prevalence), for we predicted that current or historical experience could arguably increase sensitivity to mental health stigma. Additionally, we asked respondents to provide qualitative reflections on associations between their 'work life', PhD conditions, absenteeism and presenteeism using free-text boxes.

Analysis

Quantitative analysis

Quantitative data analysis was performed using a structural equation modelling approach (Kline, 2011) in Mplus Version 6.0 (Muthén and Muthén, 2010), using full information maximum likelihood methods for missing data. There were some issues with positive skew in absenteeism and presenteeism variables and so robust maximum likelihood estimation was used (Muthén and Muthén, 2010). Good model fit was evidenced by a non-significant Chi-square (χ^2) goodness of fit statistic or an χ^2/degrees of freedom ratio of ≤3, Comparative Fit Index (CFI) >.95, a Root Mean Square Error of Approximation (RMSEA) <.06, Tucker Lewis Index (TLI) >.90, and Standardised Root Mean Square Residual (WRMR) <.08 (Hu and Bentler, 1999; Tabachnick and Fidell, 2007). Nested model iterations were compared using the χ^2 DIFFTEST procedure (Muthén and Muthén, 2010). Further model modifications were guided by modification indices (MIs) (Muthén and Muthén, 2010).

Following cross-validation of the adapted Athena Swan measure using exploratory and confirmatory factor analysis with randomly selected half-samples, we tested the structural model by specifying the stigma factor model as predicting absenteeism and presenteeism and adding demographic covariates. We then tested moderation by mental health problem status using multi-group invariance methods (Gregorich, 2006; Muthén and Muthén, 2010) to sequentially constrain relevant model parameters (e.g. factor loadings) to equality and see if a resulting non-significant DIFFTEST suggested parameter invariance between groups.

Qualitative analysis

Qualitative data were analysed using the five framework analysis stages (Ritchie *et al*., 2002)—familiarisation, identifying a thematic framework, indexing, charting, mapping and interpretation—supported by NVivo (Version 12, 2018). Framework analysis was chosen as an appropriate method for the critical realist stance, the anticipated breadth of qualitative survey data, and facilitating both deductive and inductive analysis (Ritchie, Spencer and Spencer, 2002; Parkinson *et al.*, 2016). Validity was enhanced by the first and final authors reviewing preliminary codes and the final analytic framework. The first author used reflective memos throughout the analysis.

The process of analysis was that the first author familiarised herself with the raw data by reading and re-reading the dataset multiple times, using memos to record initial impressions and reactions. Identifying the thematic framework involved initial deductive coding to identify instances of *a priori* categories of interest in the dataset (positive and negative perceptions and experiences of mental health-related attitudes and practices, and influences on absenteeism and presenteeism). Inductive coding was performed simultaneously to begin to identify categories of potential units of meaning that did not fit within the deductive categories. At this stage, the final author applied the framework to 50 randomly selected data excerpts and changes were made to the framework to accommodate additional novel categories. The first author then applied the resultant framework successively across the entire dataset, again making small changes and corrections to generate the final framework. The final author checked applicability of the final framework to the 50 randomly selected cases. Nodes in NVivo were used for the indexing stage, in which the dataset was coded and organised into the framework categories identified. Due to the large number of participants, summaries by participant were not produced. Instead, charting in the present analysis involved creating summaries for each framework category and highlighting particular cases of interest, for example, cases reflecting divergence of content. Mapping and interpretation involved reading and re-reading all category summaries and considering

shared patterns of meaning across participants to create an interpretation of the thematic content of each category.

Results

Of the 3352 survey respondents, 1978 (59%) reported a history of mental health problems. Most (n= 2205) respondents identified as female, 1102 male, and 27 respondents reporting an alternative gender identity. Most respondents (81%) were full-time PGRs and 60.7% reported full funding. With respect to ethnicity, 2687 respondents stated they were White and 618 PGRs identified as Black, Asian or Minority Ethnic (BAME).

PGRs on average reported the workplace culture was neither positive nor negative with respect to being supportive of people with mental health problems (Table I) and 'somewhat disagreed' that they had experienced unsupportive or uncomfortable language or behaviour, although reasonably large standard deviations suggest experiences were variable. Forty percent of PGRs reported absenteeism and 60% reported presenteeism within the past month. On average, PGRs reported 1 or fewer days absent, with more variable but longer absences for mental compared to physical health problems. There were a reported 5 days spent in presenteeism in the past month, with an approximate perceived 55% reduction in ability to work as normal on these days (Table I). A history of mental health problems was significantly associated with greater missing data across all stigma (18.2% missing) and attendance behaviour (18.7-20.2%) variables, compared to people with no reported history (10.1-12.4%). BAME participants had significantly more missing absenteeism data (19.9%) compared to non-BAME participants (16.5%).

INSERT TABLE ONE HERE

Validation of the adapted Athena Swan measure

Through a process of cross-validation (Table 2), we generated a two-factor model of mental health workplace culture using six Athena Swan scale items. The first factor comprised items 3, 9 and 10 and was termed "positive mental health workplace culture". The second factor, comprising items 5, 7, and 8, was termed "mental health stigma experience". The latter factor was reverse-scored, greater scores reflecting less experienced stigma. The two factors positively covaried ($ß = 0.58$, $p<0.001$).

INSERT TABLE TWO HERE

Associations between stigma, presenteeism and absenteeism

Days spent in absenteeism, days spent in presenteeism, and the severity of presenteeism (all in the past month) were regressed onto the two stigma factors (Figure 1). Experience of mental health-related stigma significantly predicted more days spent in absenteeism, more days spent in presenteeism, and more severe presenteeism (i.e. greater inability to work on days affected by presenteeism). The perceived mental health workplace culture was of more limited significance, but more positive perceptions predicted more days spent in absenteeism to a small extent. More days spent in absenteeism was associated with more days spent in presenteeism, and both were positively related to presenteeism severity. All structural model effects, with exception of the factor covariance, were small.

INSERT FIGURE ONE HERE

Demographic covariates

The fit of the measurement model was acceptable according to multiple indices, both within and across people with and without a history of mental health problems. However, there was metric variance according to the DIFFTEST of equivalence in factor loadings ($\chi 2(4)=12.35(4)$, p=0.002). Modification indices endorsed fitting an additional item covariance in one group only, suggesting the metric invariance actually reflected configural invariance (Joo and Kim, 2019) and precluding any further invariance testing.

Instead, mental health problems (0 none, 1 historical/current) was entered as a model covariate with ethnicity (0 BAME, 1 White) and gender (0 not male, 1 male). Lifetime prevalence of mental health problems was associated with perceiving a less positive mental health workplace culture (*ß*= -0.15, *p*<0.001) and greater mental health-related stigma experiences (*ß*= -0.23, *p*<0.001), and with greater absenteeism (*ß*= 0.07, *p*<0.001), and increased days (*ß*= 0.27, *p*<0.001) and severity of presenteeism (*ß*= 0.09, *p*= 0.001). Neither BAME identification nor male gender was associated with either stigma factor. However, males reported fewer days in (*ß*= -0.07, *p*<0.001) and less severe presenteeism (*ß*= -0.08, *p*<0.001). People identifying as BAME reported greater absenteeism (*ß*= -0.10, p<0.001) and reduced severity of presenteeism (*ß*= -0.08, *p*<0.001). All effects were small in size.

Framework analysis of free-text responses

INSERT TABLE THREE HERE

The final analytic framework, provided here with illustrative quotes, reflects *a priori* (deductive) interests and novel themes (Table III). Within the deductive categories, inductively generated subthemes were identified to reflect different manifestations of the deductive categories (Table III). The first deductive category, positive perceptions and experiences of the university with respect to mental health-related attitudes practices, reflected reported experiences of both specific instances of supportive supervision and health-related reasonable adjustments, "[My supervisors] *know sometimes I need to take myself away for an hour or so if my anxiety has got really bad, but they make sure someone is going to be with me if I need* (524)", and more generic perceptions of the university as broadly supportive; "[If] *I felt the need to abandon my research for a month then I think I would get the right support*" (608). The latter seemed to be predominantly hypothetical perceptions held by PGRs who had not required or attempted to access mental health support or adjustments.

Negative perceptions and experiences of mental health-related attitudes and practices appeared more complex and multidimensional. The system was perceived to simultaneously cause mental health problems ("*The behaviour of staff at my university and the mishandling of* [my supervision]…*directly led me to attempt suicide*" (474)), and position them as prototypical; "…*there is a common belief…you have to suffer for the sake of your PhD, if you aren't anxious or suffering from imposter syndrome, then you aren't doing it 'properly'…like a competition to see who can struggle on through the worst exhaustion/stress* (878)". Yet simultaneously, the system is perceived as lacking in mental health awareness, support and provisions ("*I was diagnosed with bipolar…one of my supervisors…in a meeting about my progress that I was clearly finding difficult, took some considerable time to tell me about why I was wrong about something I said about my illness*" (839)), and stigmatises PGRs voicing mental health problems by labelling them as unsuitable for an ongoing academic career:

"[W]*hen* [I] *told a supervisor* [I] *was experiencing mental health problems, he pressured me to take time off/leave…since then he has constantly reminded me of how weak* [I] *was/am and said* [I] *was not up to taking on certain responsibilities*" (1215)

"*Another staff member at one point implied that going through harsh PhD filtered out those who wouldn't cope post-doc*" (347).

Positive perceptions and experiences were described as enhancing mental health disclosures and help-seeking, and negative perceptions and experiences as impeding; "*I tried to see someone in the mental health and I was told it is going to be a long wait! It takes a lot of courage to decide to seek help and if it's denied or ignored people like me will decide to remain quiet*" (352).

Many PGRs seemed reticent to take absences, due to anticipated guilt, increased anxiety and stress, negative self-concept, and a sense of needing to compensate missed time; "…*you just have to make up the hours elsewhere*" (304). Physical health problems were framed as a more acceptable reason for absences ("*I will skip work…if there's a chance I might infect other people*" (1211)), with mental health problems needing to become severe or manifest physically before surpassing the absence threshold; "*I do not miss work unless I am physically unable to go*" (966). Interestingly, both explicit support from others for taking absences and a general lack of interpersonal support increased absenteeism; "*When I miss days of PhD study, it is usually because I have no one at university to turn to*" (435). The PhD itself could increase absenteeism, for example compared to traditional employment; more positively through flexibility, "*…no one checking whether I'm in the office or not,* [or] *when I do the work…is extremely useful in that I can e.g. take the morning off if I feel I need it*" (83), and more problematically through the perceived boundlessness and laboriousness of the doctorate; "*I would feel lost in the vastness of the work…overwhelmed by the anxiety and was effectively unable or unwilling to work*" (349). For some PGRs, taking absences was a form of self-care; "*I* [took] *my first mental day health day morning off a few weeks ago when I felt like everything was becoming too much, which was a great help to my mental health and my productivity*" (237).

Presenteeism was experienced as feeling slowed down or frozen and unable to produce, resulting in salient negative emotional and health consequences; "*I go to uni every day. Then I sit in front of my computer, do nothing, and hate myself*" (493). Presenteeism was more pronounced when absence felt pointless ("*I never miss days of PhD studies because I would not solve my problems that way either*" (263)), when PGRs felt under pressure to work ("*I usually work unwell...*[because it] *is the pressure. Pressure to obtain results, pressure to know more on what I am doing. Pressure that even having a PhD is not enough to find a good job*" (202)), or conversely, when PGRs held expectancies or values around working when unwell; "*I was brought up never to miss school/work*" (876). Presenteeism was used to avoid feared consequences of absences, including guilt, unproductivity, and a spiralling lack of control; "*Sometimes I should probably stay at home but...I am afraid it might become a habit*" (987). Presenteeism was also used to secure perceived benefits like socialising ("…*you can feed off the other person's energy*" (64)) and PhD work as a means of coping with mental health problems and trauma; "*I do study to forget all the pain*" (936). Previous and anticipated mental health-related stigma and discrimination appeared to provoke absenteeism and presenteeism, with both attendance behaviours used to avoid exposure to others' stigmatising behaviours or sanctions:

"*I've seen people use ableist language, push out people with mental health issues and block them (and myself) from opportunities…I miss days of PhD study when* [I] *know the people who bully me will be around as I get chest pains, dissociation and panic attacks*" (925)

"*I always work even when I am very ill/suicidal and even discharged myself from the mental health hospital when I had been admitted because I know my supervisors don't respond well to me having time off*" (62).

The novel inductive themes spoke to the complexity of conceptualising days present and absent in the context of a PhD, due to the lack of structure and blurred boundaries between work and life; "*This seems a slightly ridiculous question, given the totalising nature of a PhD. No matter how much you might try and have "working days" and "days off" there is not a clear dividing line*" (856). This complexity was further exacerbated by working from home; "*I have a office at home. So how can I be absent from home?*" (721). Presence, absence, and productivity were all therefore multidimensional and fluid constructs, irreducible to simple polarisations between sickness versus health or working versus absent:

"*My PhD is a 24-hour-a-day thing, rather than 'work', and as such, whether I'm productive or not, (i.e. unable to get out of bed, compulsively vomiting, cutting myself, having intrusive hallucinations and dissociative experiences), it is not a choice of 'attending'. Both being mentally unwell and the PhD are constants in my life, which coalesce to make the other more or less difficult at different times*" (1212).

Remote working was commonly used as an alternative to sick or annual leave, "*I also work from home if I feel overworked after a long day in the lab*" (40), or used to escape the stigmatising or unsupportive university environment; "*The atmosphere at my university (and specifically department) is so unsupportive of people with mental health issues that I…have been working from home for the last 2 years*" (19). Judicious use was required, however, as long-term remote working could undermine PGRs' mental and social health; "…*the social isolation is a killer*" (1208). Mental health problems ("*suffering with anxiety, depression… makes certain types of work activity very difficult - self-promotion, presenting, engaging with others*" (883)) and loneliness undermined productivity; "*Left to cope by myself, there are simply days when I cannot get out of bed and face my own research and shortcomings*" (679). Productivity could be further undermined by other factors, including negative feedback from supervisors and pressure. Overall, PGRs recommended promoting mental and social health and productivity through adopting a balanced, intentional approach to the PhD, making use of annual and sick leave, and guarding against the felt pressure to work extremely long hours; "*I have now started to be more intentional in my working and very*

rarely work at weekends. It is time we stopped believing that you have to keep going past the point of exhaustion to prove you want it enough" (878).

INSERT TABLE IV HERE

Key findings and analytic conclusions arising from the thematic integration of quantitative and qualitative evidence are presented in a mixed methods matrix (see Table IV). The main conclusions are supported by convergent quantitative and qualitative evidence; namely that more general perceptions of institutional mental health inclusivity versus more specific instances of experiencing mental health stigma are separate but connected, that the latter in particular predicts absenteeism and presenteeism, and that people with mental health problems seem especially vulnerable to experiencing mental health stigma and with relation to their attendance behaviours. More tentative findings that reflect some divergence between quantitative and qualitative components include uncertainty regarding whether perceiving a positive mental health workplace culture is associated with reduced presenteeism, to what extent qualitatively observed reticence to take mental health absences manifests behaviourally, and uncertainty regarding the relationship between absenteeism and presenteeism.

Discussion

We conducted a mixed-methods exploration of PGR experiences of mental health-related stigma and its associations with absenteeism and presenteeism. The key integrated conclusion of this study, supported by both quantitative and qualitative findings, is that perceptions of academia as stigmatising and experiences of discriminatory behaviour are associated with greater PGR absenteeism and presenteeism. The qualitative results provide additional insights that both absenteeism and presenteeism are used to avoid feeling shamed or stigmatised by supervisors or others. Our findings are in keeping with the theoretical model of the threatening environment (Inzlicht *et al*., 2009), in which stigma cues the stigmatised individual to feel unwelcome in the given environment and attempt to create distance from the stigmatised identity. Absenteeism can thus be framed as a means of de-centring and disengaging from the academic environment in which the individual's social identity is stigmatised (Woodcock *et al.*, 2012) or guarding against visible markers of having mental health problems; whereas presenteeism appears to be used to distance oneself from stereotypes of people with mental health problems being fragile, lazy or unable to work (Higgins, 1997; Krupa *et al.*, 2009).

Our data are additionally in keeping with an organisational psychology-oriented model of absenteeism and presenteeism, which suggests that to some degree, the severity of illness determines whether someone works when unwell; but with less acute illness, contextual factors have a greater moderating influence (Johns, 2010). Our data suggested that absence was more likely when PGRs perceived themselves as physically unable to work, in either a physical or mental illness context. Where ability to work was more uncertain, contextual factors did appear more influential. These contextual factors included stigma and discrimination, but also pertained to the interpersonal nature of the PhD arrangements (Johns, 2010); PGRs whose experience was more solitary or where there was interpersonal conflict appeared more likely to take absences, whereas those with valued social contacts or, conversely, who felt their presence and performance to be under surveillance appeared more likely to engage in presenteeism.

A further integrated inference is the apparent distinction between a general (perhaps more hypothetical) sense of inclusivity and supportiveness in academia *versus* specific instances of observed and experienced mental health-related stigma. Both our quantitative and qualitative findings suggest explicitly witnessing or experiencing incidences of stigma have associations with absenteeism and presenteeism. Points of departure between quantitative and qualitative data, which reflect connections between the mental health workplace culture and presenteeism, between presenteeism and absenteeism, and regarding taking mental health-related absences, may have arisen in relation to two main factors. First, qualitative data by their nature allow insight into relationships that quantitative approaches may obscure or over-simplify, and a linear statistical model may inadequately reflect complex linkages between absenteeism and presenteeism. Secondly, our qualitative data suggest that the quantitative measurement of days spent in absenteeism and presenteeism, and the quantitative severity of the presenteeism, did not necessarily chime with the lived experience of the dynamic yet often totalising nature of PhD study. Moreover, qualitative data alluded to potential discrepancies between PGRs' actual versus disclosed reasons for taking absences.

Our quantitative model suggested neither BAME identification nor male gender was associated with differences in perceptions of the mental health workplace culture or stigma experiences. Similarly, we found little reference to associations between gender identity or ethnicity and mental health-related stigma experiences within our qualitative data. We did find both quantitative and qualitative evidence that for people with mental health problems, experiences of mental health-related stigma seemed especially severe in nature and impact (Baysu *et al*., 2011). Nonetheless, mental health-related stigma did not only affect this group,

but rather contributed generally to absenteeism and presenteeism, seemingly part of a salient discourse of necessary invulnerability and resilience (Berry *et al.*, 2020).

Whilst some PGRs emphasised benefits of working in the context of mental health problems, presenteeism more commonly reflected a sense of feeling expected or even compelled (by self and/or others) when too unwell to work, leading to poor productivity and (especially when chronic) negative health, emotional and identity consequences. Our statistical model agreed with this as greater time spent in presenteeism was associated with more severe presenteeism and greater absenteeism. Our quantitative data indicated nonetheless that presenteeism was surprisingly low at 60%, as 90% of academics report engaging in presenteeism at least sometimes (Kinman and Wray, 2018). However, this must be interpreted in the context of our qualitative data. These data reflected complex and nuanced natures of presence, absence, and productivity, and referenced a prototypical positioning of PGR stress and mental health problems. It could be, therefore, that PGRs so commonly and continually experience mental and physical strain and illness, whilst also identifying these as markers of requisite interest and effort in their PhD study, that they underestimate the extent to which they engage in presenteeism. Nevertheless, current rates still markedly exceed the European average of approximately 40% (Kinman, 2019), and present data reflect that PGRs reporting presenteeism were affected on average for one working week in the past month, thus reinforcing the need to reduce presenteeism in the PGR population. Moreover, our findings support those of other major UK and US surveys; highlighting that issues with mental health, poor work-life balance, and an exploitative system that encourages unhealthy working practices are key concerns experienced by nearly half of PGRs (Cornell, 2020). Despite the average length of absence being less than two days in the past month, forty percent of PGRs reporting absence in the past month is additionally concerningly high; higher even than more recent estimates for university staff and undergraduate students post COVID-19 (Van Der Feltz-Cornelis *et al.*, 2020). However, more research is needed to further explore the nature and correlates of sickness versus other types of voluntary absences (Johns, 2010) among PGRs.

Limitations

Several limitations to the present study are of note. We could not use multi-group invariance testing to explore how mental health problems moderated experiences of stigma and its associations with attendance behaviours. It may be that people with and without mental health problems do experience mental health-related workplace culture and experiences of stigma differently and, therefore, the latent structure of these phenomena may be truly variant across groups. Alternatively, the apparent variance may have been related to the use

of a non-validated assessment of mental health-related workplace culture (UKRC-WISE, 2012). Following factor analysis, we removed items from this scale that appeared too similarly worded. Whilst the resulting 6-item scale with a two-factor solution has an appropriate item to factor ratio (Kline, 2011), the complex and nuanced depiction of mental health workplace culture in our qualitative data would suggest further dimensions may exist. Moreover, our cross-sectional data meant that we could only test quantitatively whether our data supported our hypothesis that workplace culture and stigma experiences impact on absenteeism and presenteeism. We could not directly test the directionality of these associations (Kline, 2011). Nonetheless, our quantitative model is supported by our complementary qualitative data, which coherently suggested that a less inclusive and more stigmatising culture impacts negatively on attendance behaviour.

We note that our sample lacks diversity, predominantly comprised of White British, full-time, and fully-funded PGRs. UK PGRs overall in 2017/2018 were just under 50% White identifying (HESA, 2019). This limited our ability to explore the relationships between ethnicity and both stigma and attendance behaviours. In addition, there was greater data missingness among BAME participants. Therefore, the generalisability of our findings to BAME PGRs is limited, and to PGRs who are part-time or have limited funding. However, a largely full-time sample is more representative of UK PGRs overall (Universities UK, 2018) and or greater relevance to doctoral funders. Our sample does reflect PGRs with and without mental health problems, although we acknowledge that mental health problem history was self-reported and furthermore that this group had significantly more missing data on all model variables. We recommend further research led by academics identifying as BAME and who have experience of mental health problems, in conjunction with relevant academic and student networks, to promote better understandings and visibility of the experiences of these groups with respect to the academic workplace culture.

Implications

Future research should endeavour to replicate our quantitative findings using a relevant psychometrically-validated measure of stigma experiences and further test our overarching conclusions with PGRs of greater diversity who may be especially vulnerable to the experience and impact of institutional stigma (Inzlicht *et al*., 2009). In relation to defining 'working' versus 'absences', experience sampling or time use (Hodgekins *et al.*, 2015) methodologies may increase understanding of PGRs' moment-by-moment activities and how these affect and are affected by health and productivity. In addition, further consideration to the supervisory relationship and relational and dialectical understandings of PGR absenteeism and presenteeism would be valuable (Halbesleben *et al.*, 2014). Moreover, we

did not ask participants to indicate whether they had or had not disclosed their mental health problem status. Disclosure is a complex phenomenon (Brohan *et al.*, 2012) and our understanding of how it is associated with stigma experience and attendance behaviours would benefit from qualitative exploration.

There are clear practice-based recommendations arising from this work. A change in the institutional approach seems necessary to reduce the totalising nature of the PhD and to create a clear work-life distinction (Cornell, 2020); whilst balancing the PhD's core flexibility to allow completion alongside other life roles and as inspiration strikes (Berry *et al.*, 2020). The enforcement of PGR working hours (Cornell, 2020) and annual leave entitlement would appear a promising solution to guard against the overwhelming boundlessness of the PhD; albeit requiring a cultural step-change and clear funder and institutional commitment (Morrish, 2019). Our quantitative data would additionally suggest that encouraging PGRs' to identify and take absences as needed for health problems would reduce the severity of their presenteeism, thus improving productivity. Moreover, our findings suggest a need for institutional clarity regarding supervisors' roles in supporting student mental health and wellbeing (Morrish, 2019; Berry *et al.*, 2020). Training for supervisors and other staff targeting mental health awareness and strategies for the 'emotional work' of supporting students (Hughes and Byrom, 2019) is recommended, as is increased funding for mental health support services that are sensitive to PGRs' needs. Scaffolding supervisors' wellbeing and positive practice is key to enhancing the emotional and intellectual experience of PGRs (Alexander and Davis, 2019; Berry *et al.*, 2020; Cornell, 2020) and as such, research funders and institutions need to recognise the growing demands placed on supervisors in the neoliberal university (Wisker and Robinson, 2016; Morrish, 2019). Such practice improvements would not only support PGRs' mental health, but may as our data suggest, contribute directly to improving attendance behaviours and productivity, and thus would be of great institutional and financial, as well as student-centred, benefit.

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Table I. Descriptive statistics.

	N(%)	*M*(*SD*)
Mental health-related stigma		
My workplace takes positive action to challenge mental health stigma (item 1)	2855(85.2)	4.27(1.63)
My workplace makes it clear that unsupportive language in relation to mental health is not acceptable (item 2)	2849(85.0)	4.33(1.65)
My workplace makes it clear that unsupportive behaviour (i.e. discrimination) in relation to mental health is not acceptable (item 3)	2850(85.0)	4.61(1.67)
I have personally experienced unsupportive language in relation to my mental health at my workplace (item 4)	2845(84.9)	5.14(1.76)
I have personally experienced unsupportive behaviour in relation to my mental health at my workplace (item 5)	2841(84.8)	5.11(1.81)
I have witnessed unsupportive language in relation to mental health at my workplace (item 6)	2842(84.8)	4.95(1.84)
I have witnessed unsupportive behaviour in relation to mental health at my workplace (item 7)	2840(84.7)	4.87(1.89)
I have experienced a situation at my workplace where I was made to feel uncomfortable because of my mental health (item 8)	2836(84.6)	5.11(1.84)
I feel confident that my workplace would deal effectively with any reports of mental health stigma and discrimination (item 9)	2838(84.7)	4.51(1.72)
I feel my workplace is supportive of people experiencing mental health problems (item 10)	2837(84.6)	4.60(1.60)
Absenteeism		
During the last 4 weeks, how many days have you been absent from work (not including any annual leave/holidays)?	2766(82.5)	1.76(3.72)
Zero	1697(61.4)	-
>Zero	1069(38.6)	-
How many days were you absent due to physical health problems?	476(44.5)	0.58(0.59)
How many days were you absent due to mental health problems?	473(44.2)	1.02(2.81)
Presenteeism		

During the last 4 weeks, have there been days in which you worked but during this time were bothered by physical or psychological problems?	2895(86.4)	-
No	1201(41.5)	-
Yes	1694(58.5)	-
How many days were you bothered by physical or psychological problems?	2819(84.1)	4.91(6.63)
How much work could you do on average? (0 unable to any work to 10 able to do as much work as normally do)	1611(95.1)	4.53(2.70)

Table II. Validation of the Athena Swan measure using Exploratory Factor Analysis of a random split-half sample and Confirmatory Factor Analysis of the specified factor solution in the total sample

	χ2*(df)*	*χ2/df*	*RMSEA* [95% confidence intervals]	*TLI*	*CFI*	*SRMR*	DIFFTEST
Split-half Exploratory Factor Analysis	6.88(4)	1.72	0.02 [0.00,0.50]	1.00	1.00	0.01	-
Split-half Confirmatory Factor Analysis	28.39(8)	3.55	0.04 [0.03,0.06]	0.99	0.99	0.02	-
Whole sample Confirmatory Factor Analysis	45.34(8)	5.67	0.04 [0.03,0.05]	0.99	0.99	0.02	-
Confirmatory Factor Analysis with residual covariance between items 5 and 8 (final measurement model)	24.10(7)	3.44	0.30 [0.02,0.04]	0.99	1.00	0.02	21.06(1), $p<0.001$

Notes. χ2/df = chi-squared/degrees of freedom; EFA = Exploratory Factor Analysis, CFA = Confirmatory Factor Analysis; RMSEA = Root Mean Square Error of Approximation; TLI = Tucker Lewis Index; CFI = Comparative Fit Index; SRMR = Standardised Root Mean Square Residual.

Table III: Deductive and inductive thematic framework.

Themes and subthemes	**Illustrative quotes**
Deductive themes (inductive subthemes in italics)	
Positive experiences of mental health-related attitudes and practices	
Supervisor support for mental health and wellbeing	My supervisory team do check on my wellbeing and raise this often during supervision (329)
Health adjustments	[[M]y university has been very understanding of my mental health problems. When I submitted my intermission of studies application…my request was accepted immediately, and I received a very encouraging email from the person in charge (1180)
Institutional action against stigma	I had the unfortunate experience of having to change my PhD supervisor...with them not being able to empathise…trying to use my mental health issues (disclosed earlier in confidence) against me. [W]hen the University was made aware of the situation, there was a very quick action and... help was offered (239)
Multiple mechanisms of support	I am aware of various support systems available at the university regarding to mental health, welfare, and wellbeing (344)
Support provision promotes disclosure and protects wellbeing	[If] I felt the need to abandon my research for a month then I think I would get the right support. Knowing this is there makes me feel less anxious (608)
Support provision promotes productivity	My supervisory team has been remarkably supportive during my physical and mental health crises this year. It has made the work for the PhD easier knowing I had their support (33)
Negative experiences of mental health-related attitudes and practices	

Supervisors are unresponsive or dismissive	Whenever I have taken steps to address mental health issues I was facing with supervisors, I have been told I "look happy" (763)
Experienced stigma	I had a meeting with the department about progress and extending my PhD and he was very rude and blamed me…said that I am not making any effort and it was pathetic…In these months I had been admitted to hospital several times for suicidal thoughts and had a home care team visiting me every day, so it didn't seem very tolerant of mental health issues (62)
Mental health problems as prototypical	…a common belief amongst PhDs that you have to suffer for the sake of your PhD, if you aren't anxious or suffering from imposter syndrome, then you aren't doing it 'properly'…i[t] feels like a competition to see who can struggle on through the worst exhaustion/stress. (878)
All talk, no institutional action	"[T]he university keeps on bombarding us with service offers and seminars, yet at the same time bombards us with newsletters on people's successes or emails about career events which emphasise how important it is to become the person whose embodiment lead to such mental health problems in the first place…it only exacerbates feelings of hopelessness, uselessness and loneliness since you see over and over how the system does not change fundamentally, but wounds are only superficially treated (1006)
	A recent suicide by a PGR at my university was swept under the carpet…despite campaigns pleading with the school to learn from their mistakes (575)
Protecting the system	On an occasion I continually cried in front of [my director of studies] and she told me to 'pull myself together'…The University…would not confront her or did not want to 'upset' her (a professor in the faculty) (373)
Poor mental health services	I went to make an appointment with the University counselling service but they didn't get in touch with me for over 2 1/2 months so were very little help (601)
	Across the university, the support those with a mental health diagnosis receive is hard won, and is becoming more limited. A specialist mental health advisor gave the explanation/excuse that it is 'harder to support students as they move up the university', rather than supporting me (111)
System causes mental health problems	The conditions in [higher education] these days are pressurised and…create potential for mental health problems. (892)

System dissuades disclosure and help-seeking	…it's all research, funding, REF, and publications. My supervisor is a fucking machine. She pumps out publications like nothing else I've seen. She's either a robot, or on drugs…when that is the model you're expected to follow, it's really hard to go to this overachiever and say hey, my mental health is really struggling (52)
Experiences of absenteeism	
Hiding mental health absences	I would normally never take the day off because of my mental issues. A few times I lied and said I had a sick stomach. (881)
Unnoticed absences	There is no one to ask where you are if you are feeling shit and decide to just stay in bed. (916)
Outcomes of absenteeism	
Making up the time	I have to somehow compensate the lost work hours by working from home or work in weekends. (428)
Guilt	Even when unwell, resting makes me feel guilty (564)
Anxiety, stress and negative self-concept	…when I struggle to make it out of bed in the morning and cannot face working on my PhD at all…I feel like the whole PhD is a completely lost cause and that I may as well give up now because whatever I do, I am going to fail anyway. (1101)
Best with rest	If I feel that I will not be able to be productive that day (due to physical or mental illness), then I will take the day off to recover for the next one. I find this is more satisfying, and I feel a lot happier and more productive in the long-run. (802)
Factors increasing absenteeism	
Physical versus mental health problem	I am much more likely to take a day off because of failing physical health, not mental health. (745)
Problem severity	Influences on whether to do PhD study include: …volume of the voices I hear- suicidality levels (474)
Mental health stigma	I stay away from work if I think I look unwell, because I would rather people didn't see me in a 'bad state'. I have seen people have been very open about mental health issues and been treated badly as a result. (1230)

Self-care	I miss days of PhD study when my mind is completely exhausted and I am incapable of performing even at my lowest level. It usually happens when I start being "nicer" to myself and giving myself breaks. (9)
Absence support	My supervisor is really supportive with all the physical and mental health issues, so I have never had problems taking days off if I needed them. (166)
	Because I work in a lab, taking a day off for a full-blown illness is required to prevent contamination (396)
Competing demands	I am often too exhausted by work to think or work on my PhD. (51)
The PhD itself	A lot of the time, the stress of working on my PhD is, ironically, what puts me off doing it. (807)
Quality control	I cut my losses and take a day to rest as opposed to working poorly and spending more time correcting mistakes from the previous day (77)
Social concerns	I will only not come in if I feel my attendance will affect the productivity of other people in my office (68)
Experiences of presenteeism	
Never miss work	I go to university every weekday and work, whether I want to be there or not, whether I feel well or not…which pointing that out, is probably a problem. (8)
Frozen, achieving nothing	I always work even when I am very ill/ suicidal...but I don't manage to get anything done and just end up staring at the screen. (62)
Outcomes of presenteeism	
Damages health	I worked so much last year during my PhD…that I could not sleep, eat well or concentrate. I got a cold in January and did not shift it until November and had 4 chest infections over a short period…I had to interrupt my studies to allow time for me to re-coop. (1037)
Negative self-concept	I rarely miss days because of mental health because I try to continue working…those days often result…in a further sense of inferiority. (1253)
Guilt	I try and try but there's a barrier there and I get worked up and have to leave and then feel guilty for the rest of the day and then repeat it all again the next day (752)
Factors increasing presenteeism	

Anticipated stigma or sanctions for mental health absences	I have had friends that have been or would have been near to being sanctioned for days missed regarding mental health problems…This does have an effect on whether I would miss a day of work due to illness. (145)
Work philosophies	…the mood in my lab, it will be "everyone here had at least one burnout, we get it, so all you need is to go on with your [mouth] shut, everything will be fine, just keep working" (149)
Anxious industry	My anxiety makes me feel like I need to work all of the time (358)
Pressure	[Y]ou have very little employment protection regarding sick pay. So if you took 3 months off work for sickness, mental or physical health, I can't extend my final submission deadline unless I'm not paid during this extension. (13)
	I'm on a tier 4 study visa and the Home office has a reputation for being a very unsupportive and student-unfriendly place. So if I don't progress in my studies I will be kicked out of the country (37)
Fearing unproductivity	When I'm unwell I tend to still try and work because I have so much to do and it will only hurt me more not to work because it will prevent me from moving forward. (1229)
Fearing guilt	[E]ven on days when I am feeling in crisis I always come into uni to work on my PhD. [T]he guilt for having a day off due to my own failings and mental health problems would be too much. (488)
Fearing uncontrollable absence	…if I avoid a situation due to panic or fear or too much stress, then it makes it hard to return to it or try it again. So I force myself to go to work (even if it makes me vomit in the work toilets) (497)
Pointlessness of absence	I am disabled and suffer chronic fatigue and chronic pain; if I skipped every day when I felt unwell, I would never get anything done. (1100)
Work as coping	My work is the only thing that anchors me…brings some structure…some meaning to my day (517)
Social benefits	I am more motivated to attend when I'm not feeling great because there are nice, friendly people in the PhD room, and I know I usually feel better when I have the chance to socialise. (29)

Inductive themes and subthemes

Challenges in conceptualising absence and presence	[M]y approach to PhD study is not in terms of 'attendance', but rather in the work produced in timescales that I agree with my supervisors. This allows me to work the PhD around my other priorities [and] any instances of illness, without the unnecessary pressure of considering myself as being 'absent' from PhD work. (412) [A]s PhD study is not structured day to day and it is quite normal to do more some days and less others so to capture on exact days how many days were missed etc is impossible (448) …there is no course that I have to attend. So, I can't say that I missed that seminar because of my mental health (734)
Remote working as an alternative option	
Quasi-day-off	I sometimes choose to work from home on days I feel unwell, so that I am still getting work done but can do so in my own time and a more comfortable environment. (21)
Stigmatising and unsupportive environment	There is a strong negative attitude of 'survival of the fittest', poor levels of support and encouraged competition between students. I dread coming into university daily, which encourages me to stay at home (2)
Outcomes of remote working	
Balance	…my co-supervisors allow me to work from home, which can help in terms of balance/being alone/longer sleep-ins (984)
Poor mental health	[I]t is easy for me to work from home…over time can cause mental health issues and makes it more difficult to then go to work and leave the house. (279)
Isolation and disconnection	Dislocation from the academic environment and easy access to texts, peers and mentors, is my primary challenge (266)

Blurred work-life boundaries	…my work life is pretty much indistinguishable from my life generally. Hence I never really have sick days, or even weekends off. There is always something to be done, and I am always at my desk, in my room, to do it. Now that I think about it, I haven't had a holiday for about 5 years. I'm not sure I'd even know how (777)
Additional factors decreasing productivity	
Lack of structure	…no exact schedule in PhD, except meeting with supervisor, it costs me feel 'losing the rhythm' (955)
Mental health problems	…depression makes me unable to focus (751)
Negative self-concept	Sense of…worthlessness, not contributing to anything, comparing myself to other amazing social scientists who are doing impactful research…These are some thoughts that close me up and make me not want to work. (661)
Loneliness	…most of the time I feel very lonely, which affects my mood to continue my thesis (24)
Pressure	Having too high a workload in my studies directly affects my mental health and general mood, which in turn affects the quality of my work. (27)
Negative feedback	I also had some tough feedback on some of my work which led to a few days of very negative emotions during which I could not focus. (424)
A balanced and intentional approach for better health and productivity	
	I was so stressed out about the expectations of the PhD…that I had to lower my workload and let myself relax a little bit. That meant working way less than I usually would but it was very much needed. (353)

Notes: Themes are denoted in bold and sub-themes in italics. Numbers in parentheses reflect participant number. Seventy-eight responses wrote only "*not applicable*", "*no comment*" or some variant thereof.

Table IV: Mixed methods matrix of integrated conclusions from quantitative and qualitative evidence

Conclusion	Quantitative evidence	Qualitative evidence
Conclusions drawn from clearly converging quantitative and qualitative evidence		
Distinction between general perception of the mental health workplace culture versus specific experiences of mental health-related stigma	As shown in Figure 1, the best fitting statistical model was a two-factor solution distinguishing between items reflecting more general perceptions of mental health inclusivity versus those reflecting more specific experiences of unsupportive behaviour or uncomfortable situations in relation to mental health.	Respondents described both generalised perceptions of the university workplace culture and more specific (positive and negative) experiences relating to mental health stigma (see Table III).
Moderate connection between general perceptions of the mental health workplace culture and experiences of mental health-related stigma	Although statistically distinct, the two factors in the quantitative model are significantly correlated with a moderate effect size (see Figure 1), meaning that more positive workplace mental health culture perceptions are associated with lesser experience of mental health stigma.	There was qualitative evidence regarding the connectedness of the two domains. However, examples of a disconnection between more general perceptions of the workplace culture and specific stigma experiences were also present, with a suggestion that institutions may broadly commit to inclusivity but that actual attitudes and working practices were quite unique and variable between different staff within institutions. Such discrepancies seemed to be negatively perceived by PGRs and undermine the sense of authenticity in the institutional

		commitment to inclusivity; giving rise to the idea that institutions were ‘all talk, no action’ (see Table III).
Heterogeneity in experiences of mental health-related stigma	On average, PGRs indicated they ‘somewhat disagreed’ that they had experienced unsupportive language or behaviour in relation to mental health (see Table I). However, standard deviations in responses to these items suggested variability in experiences.	Heterogeneity of stigma experience was very evident with respect to identified positive, negative and neutral experiences and observations of health-related stigma as described and presented in Table III. Furthermore, as outlined above, behaviours and practices of university staff were considered to differ individuality to a marked extent.
Experiences of mental health-related stigma strongly predicted absenteeism and presenteeism	Greater experiences of mental health-related stigma significantly predicted greater days spent in absenteeism and presenteeism, and increased severity of presenteeism (see Figure 1).	Respondents described experiences of mental health-related stigma, both directed towards them and towards others, as increasing absenteeism and presenteeism (see Table III). Absenteeism and presenteeism appeared to be used as strategies for avoiding feeling shamed by supervisors and others. Remote working was additionally used to avoid a perceptibly stigmatising university environment but sustain working on one’s PhD.
People with a history of mental health problems less likely to report a positive mental health workplace culture and	Quantitative results suggested that people with a history of mental health problems perceived the mental health workplace culture to less positive and experienced greater mental health stigma. Moreover, this group reported greater absenteeism and more severe presenteeism.	There was evidence that people with mental health problems had experienced specific instances of being stigmatised or discriminated against in relation to their mental health problems and that absenteeism and presenteeism could be used as associated behavioural strategies to manage these experiences. There was additionally some evidence that those respondents

more likely to report experiencing mental health-related stigma		describing a positive mental health workplace culture appeared frequently to be people who did not report having experienced mental health problems.
BAME identification does not appear to be associated with differences in perceptions and experiences of mental health cultures in the workplace	There was no quantitative evidence that people identifying as BAME reported different perceptions of the mental health workplace culture or different mental health stigma experiences.	Qualitative data did not evidently describe differences in experiences for people identifying as BAME compared to people who did not identify as BAME.
Male gender does not appear to be associated with differences in perceptions and experiences of mental health cultures in the workplace	There was no quantitative evidence that people identifying as male reported different perceptions of the mental health workplace culture or different mental health stigma experiences.	Qualitative data did not evidently describe differences in experiences for people identifying as male compared to people who did not identify as male.
Tentative conclusions drawn reflecting some divergence between quantitative and qualitative evidence		
Perception of a positive mental health	A perceived positive mental health workplace culture predicted greater days spent in	Explicit support from others (for example supervisors) for taking absences, both generally and as related to mental health, was

workplace culture predicts greater absenteeism and possibly reduced presenteeism	absenteeism, with a very small effect size, but was not significantly associated with days spent in presenteeism or its severity (see Figure 1).	described as being associated with a reduced likelihood of working when unwell and greater likelihood of taking absences (see Table III).
Potential reticence to take mental health-related absences	PGRs reported similar time spent in mental health and physical health related absences in the past month. However, these data did not capture whether PGRs disclosed the nature of these absences to their supervisors or institutions.	Reticence to take absences for physical and mental health reasons, and for other personal or employment-related reasons, was evident in qualitative responses (see qualitative results and Table III). There was evidence that respondents may supply physical health related reasons to their supervisors and others when taking a mental health-related absence.
Complex relationship between absenteeism and presenteeism	In the statistical model (Figure 1), greater days spent in absenteeism and presenteeism were significantly positively correlated with each other, and both were positively correlated with the severity of presenteeism.	Conversely, qualitative responses provided some evidence that presenteeism may be used as alternative to absenteeism, i.e. that these two phenomena are inversely associated (Table III). In keeping with the statistical model, qualitative responses suggested more time spent engaged in presenteeism would reduce health, functioning and productivity and therefore, increase the severity of the presenteeism. However, qualitative results did detail challenges in conceptualising, measuring, and reporting absenteeism and presenteeism; for these concepts did not necessarily fit well with the daily lived experience of doing a PhD.

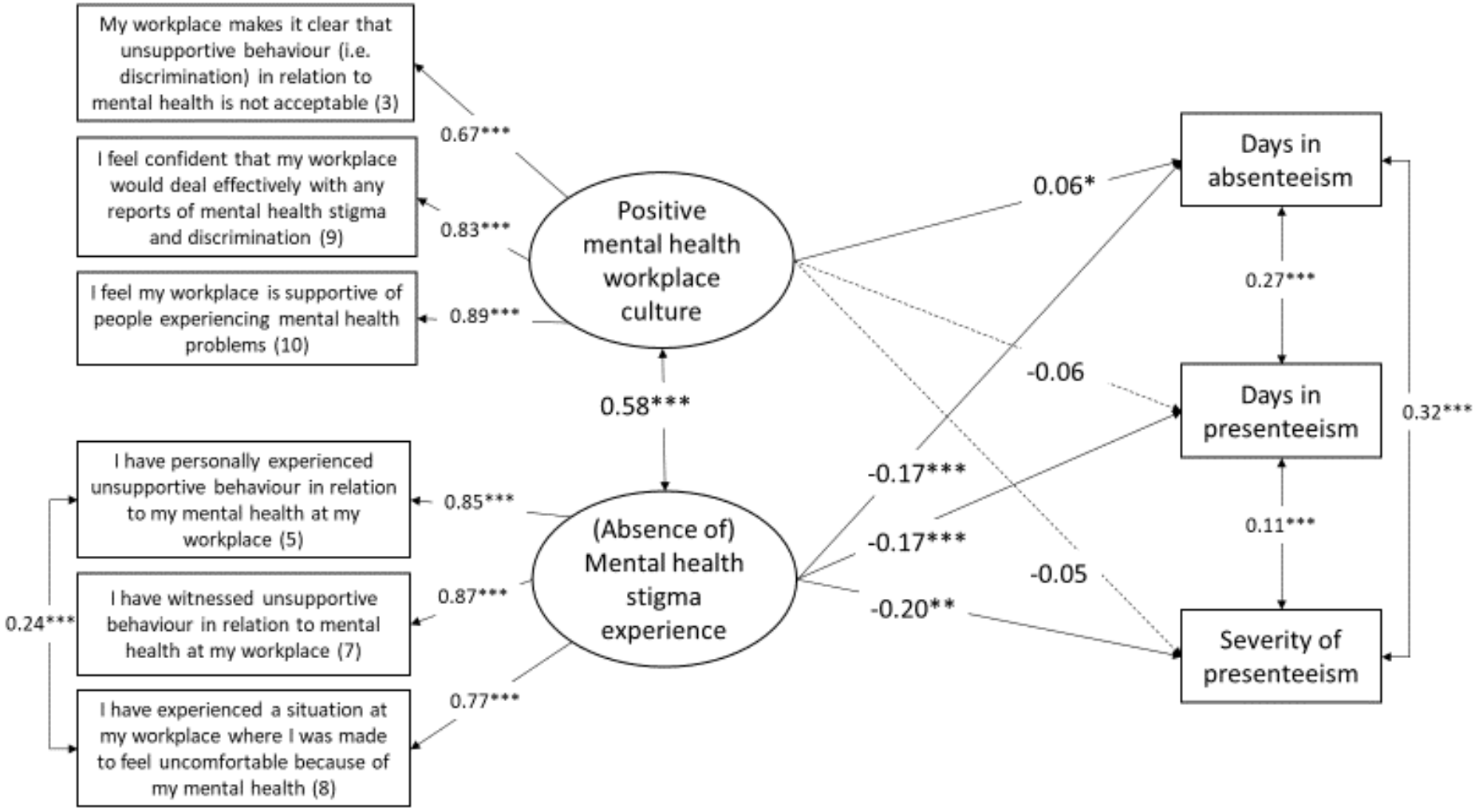
My workplace makes it clear that unsupportive behaviour (i.e. discrimination) in relation to mental health is not acceptable (3)
I feel confident that my workplace would deal effectively with any reports of mental health stigma and discrimination (9)
I feel my workplace is supportive of people experiencing mental health problems (10)
0.67***
0.83***
0.89***
Positive mental health workplace culture
0.58***
I have personally experienced unsupportive behaviour in relation to my mental health at my workplace (5)
I have witnessed unsupportive behaviour in relation to mental health at my workplace (7)
I have experienced a situation at my workplace where I was made to feel uncomfortable because of my mental health (8)
0.85***
0.87***
0.77***
0.24***
(Absence of) Mental health stigma experience
0.06*
-0.06
-0.17***
-0.17***
-0.20**
-0.05
Days in absenteeism
Days in presenteeism
Severity of presenteeism
0.27***
0.11***
0.32***

Figure I.