

How is life as a recently qualified teacher? New evidence from a longitudinal cohort study in England.

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England is currently facing a crisis in the recruitment and retention of teachers, with one-in-three newly qualified staff leaving the profession within five years of completing their training. This paper investigates several different aspects of the lives of recently qualified teachers in England, including their life satisfaction, mental health, working hours and their social lives. Recently qualified teachers are found to have higher-levels of life-satisfaction than their peers working in other professional/graduate jobs, despite working longer hours for little extra pay. They are also less likely to believe that Britain is a place where hard work gets rewarded. Yet there is no evidence that recently qualified teachers have worse mental health outcomes, or have a less active social life, than young people working in other jobs.

Key Words: Next Steps; newly qualified teachers; occupation; mental health; teachers.

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Introduction

England is currently facing a crisis in the recruitment and retention of appropriately qualified teachers (Worth 2018), particularly within secondary schools (Jerrim and Sims 2019). Upcoming increases in the school-age population over the next decade means that more teachers are now needed than ever before (Sibieta 2018). At the same time, school leaders are finding it increasingly difficult to recruit the staff that they need (Coughlan 2018). Although there are many factors driving this recruitment problem, an increasing appreciation about the challenges of teaching – and the fact it can be a stressful career – is likely to be one of the leading causes (Perryman and Calvert 2019). This challenge is further compounded by the fact that one-in-three newly qualified teachers quit their job within five years of finishing their training (Foster 2019:11). England is therefore facing a perfect storm in terms of teacher supply – which is, in turn, having an impact upon children’s learning. For instance, results from the 2018 round of the Teaching and Learning International Study (TALIS) illustrated how secondary headteachers in England were more likely to say that teacher shortages were hindering instruction within their school than headteachers in almost every other participating country (Jerrim and Sims 2019).

The aim of this paper is to find out more about the happiness, well-being, health and working lives of one particularly interesting group within this context – recently qualified teachers (i.e. teachers who have been working in the job for approximately three years or less). This group have chosen to teach for their career; yet many will quit for alternative employment before they turn 30. They are hence individuals who schools, particularly in the current climate, desperately need to retain. It is therefore vital that we develop a better understanding of their lives, the most pressing challenges that they face and how this compares to their peers working in other jobs. We are specifically interested in potential factors that may end up ‘pushing’ recently qualified teachers out of the teaching profession, such as having low levels of life-satisfaction, whether they are showing signs of developing mental health problems, whether they have excessive workloads, if they manage to have a reasonable work-life balance and whether they are adequately paid.

Although there have been some previous investigations of the working lives and well-being of teachers in England (e.g. Bryson, Stokes and Wilkinson 2019; Bamford and Worth 2017), few studies have specifically focused upon recent recruits to the teaching profession. For instance,

in a recent study, Bryson, Stokes and Wilkinson (2019) found that school staff in England were more satisfied with their jobs than similar employees in other workplaces. In contrast, Worth et al (2018) found that teachers in England were less satisfied with their amount of leisure time than some other public sector professionals, though with slightly higher levels of overall job satisfaction and satisfaction with pay. This is consistent with Perryman and Calvert (2019), with their analysis showing that the nature of teacher workload (rather than the quantity per se) was the key reason why many teachers (including recently qualified teachers) choose to change career. In a broader international context, Jerrim and Sims (2019) illustrate how teachers in England (including recently qualified teachers) have longer working hours and lower levels of job satisfaction than teachers in almost every other country that participated in the TALIS survey, with both pay and job satisfaction amongst secondary teachers falling substantially between 2013 and 2018.

Although insightful, there are some important gaps within the evidence base. First, most existing studies have focused upon the teaching profession as a whole, rather than teachers at the start of their careers. Yet, as noted above, early-career teachers are a key group where retention is particularly low. They are hence worthy of specific attention in their own right, as recently noted by the OECD (2012). Second, much of the evidence that does exist upon recently qualified teachers is cross-sectional (e.g. OECD 2019) and hence cannot tell us anything about how young people's lives change after entering teaching (e.g. does their life-satisfaction decline after entering teaching compared to before)? Third, relatedly, most existing studies do not measure the earlier lifetime factors that are likely to be related to selection into the teaching profession (versus choosing another career). Yet being able to adequately account for the factors that determine occupational selection is vital if one wishes to develop a better understanding of the impact that choosing to work as a teacher has upon young people's lives.

The aim of this paper is to start to fill this important gap in the literature. Using Next Steps cohort data from England, we follow individuals from when they were in secondary school (age 13/14) through to when they have recently entered the labour market (age 25/26). This includes a group of 291 young people who chose to become primary, secondary or Special Educational Needs (SEN) teachers and who have typically been working in this job for (at

most) three years¹. We are therefore able to consider how the pay, working hours, mental health, social activities, attitudes and life-satisfaction of recently qualified teachers in England compares to young people from the same cohort who have chosen to pursue different careers. Critically, the longitudinal nature of the Next Steps data means that such comparisons can be made having controlled for factors related to the decision to work as a teacher and our various outcomes of interest.

Our results suggest that junior teachers tend to have higher levels of life satisfaction than their peers working in other jobs. This is despite working longer hours each week (at least during term-time) for roughly the same pay. Junior teachers are also less likely to believe that ‘Britain today is a place where hard work is rewarded’ than young professionals pursuing other careers. On the other hand, there is no evidence that junior teachers have worse mental health outcomes, or that they have any less active social lives, than those working in other professional / graduate jobs. Together, this paints a mixed picture about the lives of junior teachers in comparison to their former school peers.

The paper now proceeds as follows. An overview of the Next Steps dataset is provided in section 2, with our empirical methodology then presented in section 3. Results are documented in section 4, with discussion and policy conclusions following in section 5.

1. Data

Survey design

The data we use are drawn from the Next Steps study (formerly known as the Longitudinal Study of Young People in England). This survey began in 2004 and refer to a group of young people born in 1989/1990. In the first survey wave, schools in England were the primary sampling unit, selected with probability proportional to size. Within each school, around 35 Year 9 (age 13/14) pupils were then randomly selected to take part. This resulted in a baseline sample of 15,770 13/14 year-olds, reflecting an initial response rate of 74 percent. Respondents were then re-contacted annually for the next six years (through to age 19/20) and then again at age 25/26. In this latest survey sweep, from which our outcome data are drawn, a total of 7,707 young people took part (around half of the first wave sample). Survey weights provided by the

¹ We have used data from the 2018 round of the Teaching and Learning International Study (TALIS) for England to estimate the proportion of NQTs who are age 26 and below. We find that 61 percent of NQTs in England are 26 or younger.

survey organisers to correct for the complex survey design and to adjust for non-random non-response are applied throughout our analyses.

Occupational groups

As part of the age 25/26 survey sweep, respondents were asked various questions about their job (if they were employed). Within the dataset, their occupation has been recorded in four-digit Standard Occupational Classification (SOC2010) and Standard Industrial Classification (SIC) codes. Throughout this paper we define teachers as any cohort member falling within one of the following SOC groups:

- 2314 = Secondary teachers (n = 129)
- 2315 = Primary and nursery teachers (n = 145)
- 2316 = Special educational needs teachers (n = 17)

We also restrict our definition of teachers to those individuals with a SIC code of 85200 (primary education) or 85310 (general secondary education). The final sample size for teachers in our analysis is 291².

As we are interested in how the lives of junior teachers compare to those working in other professions, we also use these data to define our ‘counterfactual’ groups. In all our analyses we compare outcomes for teachers to (a) those employed in lower professional or managerial occupations³; (b) all university graduates; (c) those working in health-based occupations⁴ and (d) those working in selected office jobs⁵. These comparators have been chosen as they have either previously been compared to teachers in the literature (Bryson and Forth 2017; Hilary, Andrade and Worth 2018; Sims 2019), represent other potentially stressful public sector occupations where women outnumber men (health workers) or represent a potential alternative career trajectory that many teachers could have chosen in the private sector (office jobs).

² This means that 3.7 percent of the Next Steps sample were classified as teachers. We have used Labour Force Survey data from 2014-2018 to investigate how many 24 – 28 year olds are classified as teachers in the population. In total, around 3 percent of 24 – 28 year old LFS respondents were assigned a SOC code of 2314, 2315 or 2316, which is broadly similar to the Next Step cohort.

³ This is the same National Statistics Socio-economic Classification (NSSEC) group as teachers.

⁴ This includes nurses, midwives, physios, occupational therapists, social workers, medical practitioners and paramedics.

⁵ This includes accountants, management consultants, project managers, architects, town planners, surveyors, public relations, statisticians, human resource officer/manager and IT workers.

Outcome measures

A series of outcome measures are considered in this paper, each capturing a different aspect of junior teacher's well-being. To begin, we compare teachers to our various comparator groups in terms of two broad, global outcome measures: general health and life-satisfaction.

For general health, at age 17 respondents were asked '*In the last 12 months would you say your health has been very good, fairly good, not very good or not good at all?*' with responses provided using a four-point scale (very good, fairly good, not very good, not good at all). The question used at age 26 was slightly different, with respondents asked '*How would you describe your health generally*' with respondents asked to indicate one of five response options (excellent to poor). In the following section, we illustrate the percentage of respondents who indicated that they were in 'good health', meaning they said that their health was 'very good' or 'fairly good' at age 17, and that their health was either 'excellent', 'very good' or 'good' at age 26. This measure has been widely used throughout the medical and social sciences as a broad indicator of overall self-reported health and, despite its clear limitations, has been shown to be predictive of future poor health outcomes (Idler and Benyamini 1997).

On the other hand, the same question was given to respondents about their life-satisfaction at both age 20 and age 26. Specifically, both surveys included the following question '*how dissatisfied or satisfied are you about the way your life has turned out so far?*' with five options (very satisfied to very dissatisfied). This means we can investigate change in life-satisfaction before and after individuals have entered teaching (and how this change compares to those who have decided to pursue different careers).

Next, we turn directly to features of teacher's jobs. This part of the analysis encompasses three measures. The first is total number of hours worked per week, captured using a single question asking about hours usually worked per week in their main job (including overtime but excluding meal breaks). This question was phrased as follows: "*In your main job how many hours per week do you usually work, not including meal breaks but including overtime*". Although such information is likely to measure teacher workload with some error, previous work has suggested that it may provide a reasonable proxy when investigating aggregate statistics (Allen et al 2019). The second measure is gross weekly pay in their current main job, including any money paid for overtime, bonuses or tips. Respondents were asked to provide a figure over what timeframe they felt they could most accurately recall (e.g. weekly, monthly,

annually). Again, although collection of income data using a single question is likely to be subject to some measurement error (Micklewright and Schnepf 2010) it is likely to be adequate for our purposes. In order to ensure individuals with very high salaries do not have undue influence upon our results, we top-code the top five percent of the income distribution to the 95th percentile. Finally, we also investigate whether teachers believe that hard work is rewarded, which was gathered via responses to the following statement: *'Britain today is a place where hard work is rewarded'* using a four-point scale (strongly agree to strongly disagree).

The third area we consider is junior teacher's mental health. Within various waves of the Next Steps survey, a short version of the General Health Questionnaire (GHQ-12) has been completed by cohort members. This encompasses 12 statements such as *'have you recently felt constantly under strain'*, *'have you recently felt you couldn't overcome your difficulties'* and *'have you recently been feeling unhappy or depressed'*, with four possible responses to each (*'not at all'* to *'much more than usual'*). It has been widely used to detect minor psychiatric conditions (e.g. anxiety, depression) within the general population and has been the focus of much academic research into mental health (Gnambs and Staufenbiel 2018). Within our analysis we consider how teachers responded to each of the 12 GHQ items compared to other groups, as well as on the scale overall. We are particularly interested in the proportion of individuals with a total GHQ score of four or more, which may indicate the presence of anxiety or depression (Goldberg, Oldehinkel and Ormel 1998).

Continuing on a similar theme, our fourth set of outcome measures focus upon respondents' quantity and quality of sleep. Poor sleep has been linked to work-related stress (Yang et al 2018) and to mental health problems such as anxiety (Scott, Webb and Rowse 2017), while also being shown to be important for general health and well-being (Litwiller et al 2016). The first measure of sleep we use is simply self-reported information on the average number of hours sleep per night over the four weeks prior to the survey. The second measure more directly asks respondents *'have you recently lost much sleep over worry'* using a four-point scale, collected when individuals were age 17 (before entering teaching) and age 26.

Next, we investigate junior teachers' social lives. Given recent concerns about teacher workload, we are interested in whether junior teachers must cut back upon their social activities and things outside of work that they enjoy. This is critical if teachers are to maintain an

adequate work-life balance. In the age 26 survey, cohort members were first asked how frequently they did the following activities (from at least once a week to never): (a) play sport / exercise; (b) go to the cinema/concerts/theatre; (c) visit a museum/gallery; (d) have a meal out; (e) go to a pub/club; (f) attend activity groups / evening classes. In a separate question, they were also asked how frequently they met up with their friends using a seven-point scale (three or more times a week to never). At age 17 they were also asked about whether they had done some of these activities (sport, cinema/concerts/theatre and pub/club⁶) in the last four weeks, and how often (e.g. whether they play sports most days, once a week etc). Hence, for some of these questions, we can also investigate change before and after individuals enter teaching. Together, responses to these questions will help us to better understand the social activities of junior teachers and how their work-life balance compares to their peers working in other jobs.

The final area we explore is alcohol consumption. Regularly drinking alcohol is used as a ‘coping mechanism’ by some individuals, with a recent study suggesting that around half of adults in England drink to cope with stress (Appleton and James 2018). A battery of questions was included in Next Steps dedicated to alcohol consumption, including frequency of drinking and the number of alcoholic drinks typically consumed per session. Our main focus is upon how frequently individuals drink. At age 20, participants were asked whether they drunk alcohol almost every day, five or six days a week, three or four days a week, once or twice a week, once or twice a month, once every couple of months, once or twice a year or not at all in last 12 months (or never in their life). A slightly different categorisation was used at age 26, with respondents reporting whether they drunk alcohol four or more times a week, two or three times a week, two to four times a month, monthly or less, or never. We recode this information across the age 20 and 26 sweeps to be as comparable as possible. This recoded information is then used to investigate change in alcohol consumption patterns before and after entering teaching, and how this compares to other professions.

⁶ At age 17, separate questions were asked about pubs/bars and parties/discos/nightclubs. We combine these in our analysis when comparing to age 26 responses.

2. Methodology

Main text

Following comments from anonymous peer-reviewers, within the main text we present results in the form of a set of descriptive statistics. These illustrate the distribution of the responses by teachers (and workers in selected other occupations) to the Next Steps survey questions. Critically, where possible, we illustrate how individuals responded to the question before they entered the workplace (from the age 20 survey sweep and before) to those at age 26 (when most graduates are in the workplace). Thus, for teachers, we can investigate whether their responses to the questions changed before and after they started working in their job. For instance, does the mental health (GHQ scores) of individuals who decide to become teachers decline relative to their mental health in their teenage years (and is the decline worse than for those who chose to work in other professions)? When producing these descriptive statistics, the age 26 Next Steps survey weight has been applied.

There are strengths and limitations to this approach. The main benefit is that it allows results to be presented in a clear, simple manner, making the findings accessible to a wide, non-specialist audience. A limitation, however, is that it does not formally adjust estimates to consider ‘occupational selection’; the fact that individuals with certain demographic, social and psychological characteristics are more likely to choose to work in education than other jobs. Consequently, we use two additional approaches to investigate the robustness of our key findings to potential confounding from occupational selection; regression analyses and propensity score matching. These are described in more detail below, with the results presented in Appendix A (regression analyses) and B (propensity score matching). We also comment upon these results in the main text to support the discussion of our descriptive analysis. Overall, there is little substantive difference in the results based upon the descriptive statistics (presented in the main text) and those from the modelling that more formally adjust estimates to account for occupational selection (presented in the main text).

Regression analyses

Within the regression models we estimate we attempt to control for factors that are simultaneously associated with both the likelihood of a cohort member becoming a teacher and our outcomes of interest. In other words, we try to control for characteristics that are likely to be related to ‘occupational selection’ (i.e. why individuals decide to become teachers rather than enter other careers).

Fortunately, the detailed information collected across the first seven sweeps of Next Steps means that we have a rich set of potential controls to utilise within our regression models. For instance, as noted above, several of our outcome measures (e.g. life-satisfaction, GHQ scores) have also been collected from respondents in previous survey waves, between the ages of 14 and 20 (i.e. before individuals had entered their chosen career). We are hence able to estimate ‘value-added’ type models, capturing the change in our outcomes of interest (e.g. life-satisfaction, mental health) before and after individuals began working as teachers. Moreover, when cohort members were teenagers, they were asked several questions about their future occupational preferences (e.g. whether they wanted a job where they help others, to have a job with regular hours, to have a job that pays well) as well as questions capturing aspects of their personality (e.g. their ‘locus of control’ – the extent that they believe that they are masters of their own destiny). Via the parental background questionnaires that were issued, we also know whether the cohort member’s mother or father was a teacher. Previous research has shown such factors to be strongly related to the probability of a person becoming a teacher (Sims *forthcoming*), and thus key elements of the occupational ‘selection mechanism’ that we are able to control for within our analysis.

In Appendix A we present estimates from the following regression model (with Appendix C illustrating the sensitivity of our results to an alternative model specification):

$$O_{ij} = \beta \cdot T_{ij} + \gamma \cdot G_{ij} + \phi \cdot PT_{ij} + \delta \cdot L_{ij} + \theta \cdot A_{ij} + \vartheta \cdot PO_{ij} + \pi \cdot P_{ij} + \rho \cdot M_{ij} + \tau \cdot Asp_{ij} + \varepsilon_{ij}$$

Where:

O_{ij} = One of our outcomes of interest (e.g. life-satisfaction, GHQ scores)

T_{ij} = Whether the cohort member was working as a teacher at age 25 (1) or not (0).

G_{ij} = Gender

PT_{ij} = A binary indicator of whether either the cohort member’s mother or father was a teacher

L_{ij} = Cohort member’s locus of control measured at age 14/15 and 19/20.

A_{ij} = A vector of academic achievement measures, including whether the respondent obtained a degree (and if this was from a Russell Group university).

PO_{ij} = A vector of prior outcome measures, such as life-satisfaction, GHQ scores and general health, all measured at age 19/20 or before.

P_{ij} = A vector of variables capturing cohort member's stated occupational preferences at age 19/20. This included how much they wanted to work in a job that was (a) well-paid; (b) had good chances for promotion; (c) whether they can help others and (d) was not routine.

M_{ij} = A binary indicator of whether the cohort member had ever moved out of home before they turned 21.

Asp_{ij} = A binary indicator of whether at age 18 the cohort member indicated that they want to pursue a career in education.

ε_{ij} = A random error term. Standard errors are clustered by the secondary school the cohort member attended at age 13/14, consistent with the initial Next Steps sampling design.

i = Cohort member i .

j = Secondary school j (attended by the cohort member at age 13/14 – survey wave 1).

These models are estimated using either Ordinary Least Squares (OLS) for continuous outcomes or ordinal logistic regression for ordered categorical outcomes. The parameter of interest from this model is β ; this reveals differences in outcomes between teachers and cohort members working in other occupations, conditional upon the other factors controlled for in the model. Note we estimate (1) several times for each outcome, each focusing upon a different pool of potential comparators (e.g. all cohort members, graduates only, health workers etc). To ease interpretation of the results, all estimates in the appendices are presented in terms of effect sizes (standard deviation differences)⁷.

Throughout our regression analyses we apply the longitudinal Next Steps survey weights and cluster the standard errors by the secondary school cohort members attended at age 13/14 (this was the primary sampling unit in the first wave of the Next Steps survey). Multiple imputation by chained equations has been used to account for missing covariate data.

⁷ For continuous variables we have standardised the outcome by subtracting the Next Steps cohort mean and dividing by the Next Steps cohort standard deviation. For ordered categorical variables, we have followed Chinn (2000) and converted the estimated log-odds into an approximate effect size by dividing the coefficients by 1.81.

Propensity score matching estimates

In online Appendix B we present matching estimates as an alternative empirical approach. These attempt to model the ‘selection mechanism’ (i.e. why someone chooses to work as a teacher instead of another occupation) based upon information that is observable within the Next Steps dataset. In our application, we include in this selection model: (a) gender (b) whether either of their parents was a teacher (c) whether they aspired to work in an education job at age 17/18 (d) locus of control (e) whether they hold a degree and if this is from a Russell Group university (f) a series of variables capturing the characteristics of the cohort member’s job preferences at age 19/20⁸ (g) attitudes towards work reported at age 18/19⁹ and (h) the extent that the cohort member enjoyed Year 11. This selection model is estimated using logistic regression. From this model we estimate the predicted probability of each cohort member becoming a teacher and use these to either create a set of inverse probability weights (approach 1) or to match each teacher in the Next Steps sample to the three ‘nearest-neighbour’ non-teachers (approach 2). We then compare outcomes between teachers and non-teachers by either applying these weights (approach 1) or by simply taking the difference in each outcome between teachers and their nearest-neighbour matches (approach 2). The main advantage of this approach over regression is that it allows common support to be enforced upon the sample (i.e. for each teacher it ensures that there is a comparable non-teacher). It is, however, still reliant upon a ‘selection-upon-observables’ assumption (i.e. that the selection model includes all factors associated with the probability of someone becoming a teacher and our outcome of interest). We hence advise results be interpreted as conditional associations, rather than reflecting cause and effect.

A note about standard errors

As noted in the data section above, as with any longitudinal survey, Next Steps suffers from attrition (individuals dropping out of the study over time). As argued by an anonymous reviewer, whether one should report standard errors, confidence intervals and statistical significance tests when there is non-response to a sample survey is open to debate. The convention is that such inferential statistics are still reported, despite the non-response meaning

⁸ This includes the extent they felt the following characteristics were important for their future job: promotion opportunities, pay, it allows them to help others, is not routine, to have regular hours and whether its important to have a job / career, whether its important for them to raise a family in the future.

⁹ This includes whether the extent the cohort member believes that (a) it is important to keep a job even if they don’t like it; (b) whether they would leave a future job if they didn’t like it; (c) whether they feel having any job is better than being unemployed and (d) their attitude to whether women with young children should work.

that the sample is no longer technically completely random (as respondents are likely to differ in their characteristics from non-respondents, this is likely to induce an element of non-random sample selection). However, some have argued this is not appropriate, and no such statistical inference (whether it be p-values, confidence intervals or standard errors) should be reported (Gorard 2015).

To recognise both perspectives, we use the following approach in this paper. At the request of the anonymous referee, confidence intervals, standard errors and significance tests are not reported in the main body of the paper (i.e. in our presentation of the descriptive results). They are, however, presented in the appendices where we report results from the regression and propensity score matching analyses which attempt to more formally account for occupational selection. Regardless, whether such inferences statistics are reported or not do little to alter our substantive interpretation of the results.

3. Results

General health and life-satisfaction

Table 1 begins by presenting results for two global measures of health and well-being – overall life-satisfaction and general health. Starting with the former, there are three key points of note. First, the distribution of life-satisfaction scores for individuals who chose to become teachers is very similar at age 20 (before they started work) and age 26 (once they have started work). In other words, recently qualified teachers are just as satisfied with their life as they were before they started working their career. Second, the same does not seem to hold true for the other occupational groups. In particular, there is a decline in the percentage of individuals who report being “very satisfied” between age 20 and age 26 amongst lower managerial workers (32 to 26 percent), graduates (32 to 25 percent) and those in office jobs (34 to 25 percent) – whereas the figure remains stable for teachers (37% at age 20 and age 26). Finally, life-satisfaction scores amongst recently qualified teachers (and health workers) are generally at a higher level than for the other occupational groups. We consequently conclude that overall life satisfaction is *higher* amongst junior teachers than for young people who have chosen to work in other jobs.

The regression analyses (Appendix A) and propensity score matching results (Appendix B) support these findings. After accounting for occupational selection, compared to other graduates in the Next Steps cohort, teachers scored around 0.3 standard deviations higher on

the life-satisfaction scale (see Appendix A1 and B1). The point estimates also suggest that junior teachers may be more satisfied in life than their peers working in other lower managerial jobs (effect size = 0.24) and those working in office jobs (effect size = 0.27). These results also confirm that, out of all the occupational groups considered, only junior health workers have similar levels of life-satisfaction to junior teachers.

<< Table 1 >>

Turning to respondents' general health, we find roughly the same percentage of teachers reporting to be in good health at age 26 compared to when they were age 17 (see the final row of Table 1). In other words, starting to work as a teacher does not seem to be associated with a decline in self-reported general health. Table 1 also reveals that the same holds true for other occupational groups, except for those who enter health occupations, where the percentage reporting to be in good health increases (from 92 percent at age 17 to 97 percent at age 26). Otherwise, Table 1 illustrates how recently qualified teachers do not report their general health to be any better or worse than the general health of their former school peers who work in other jobs. This is confirmed in Appendix Table A1 (regression analyses) and Appendix Table B1 (matching estimates) which more formally control for occupational selection. In particular, differences between junior teachers and other occupational groups are almost always small (the absolute value of the effect size is below 0.1 in most instances). Again, the only exception is that junior teachers are more likely to say that they have worse general health than those working in health-related careers.

Workload and pay

Table 2 turns to key aspects of teachers' jobs. The first row clearly illustrates how the average weekly working hours of junior teachers are higher than for other occupational groups. Compared to other lower-managerial workers, junior teachers report working (on average) around nine hours more per week (48.2 versus 39.6 hours), with a similar difference relative to university graduates. Although the difference between junior teachers and office workers is smaller, it is still reported to be around six hours per week. Similar findings hold once we attempt to control for characteristics associated with occupational selection (see Appendix Table A2 and Table B2). Of course, some of this difference is likely to be offset by the fact that teachers typically have a greater amount of annual leave than their peers working in other jobs (Worth et al 2018), but is consistent with the high levels of workload reported by teachers in England within the most recent TALIS survey (Jerrim and Sims 2019). Hence, at least during

term-time, junior teachers typically have much longer hours (equivalent to around an extra day per week) compared to other occupational groups.

<< **Table 2** >>

Despite these long hours, junior teachers are not (on average) typically paid much more than those working in other jobs (see the middle row of Table 2). Across the Next Steps cohort, the average weekly income is £396, with a standard deviation of £187. Compared to all graduates, teachers are paid around £22 more per week (£53 per week in our regression analysis results reported Appendix Table A2) and £28 more than other lower-managerial workers. Teachers do however receive less than their peers working in health (£54 per week less) and those in office jobs (£71 per week). Similar results emerge in Appendix Table A2 and B2 which adjust the estimates to control for occupational selection. The picture is therefore mixed in terms of the pay of junior teachers, with higher earnings than some groups (graduates and their cohort as a whole) but lower than others (most notably those working in mainly private sector office jobs).

The long hours that junior teachers work (for little extra pay) may contribute to the results presented in the final row of Table 2; recently qualified teachers in England are less likely to believe that ‘Britain today is a place where hard work is rewarded’ than those who work in other careers. Around 30 percent of teachers agree or strongly agree that hard work is rewarded, compared to around 40 percent of health workers and lower-managerial workers, 45 percent of all graduates and over half of all office workers. The regression and matching analyses that control for occupational selection confirm these findings (see Appendix Table A2 and B2). In terms of effect sizes, the difference between junior teachers and most other occupational groups considered is around 0.25 standard deviations, with a particularly big difference in comparison to office workers (effect size = 0.58).

Current mental health

The issue of mental health, as measured by responses to the GHQ, is covered in Table 3. This provides the percentage of respondents with a total score above a certain threshold, with our particular interest being in those with a score of four or more (a threshold often used to potentially indicate anxiety or depression). The final row also gives the average GHQ score of respondents along the 12-point scale.

<< **Table 3** >>

There is no evidence that the mental health of junior teachers at age 26 was any worse, on average, than when they were age 17. At both timepoints, around one-in-five individuals who went on to become teachers had a GHQ score of four or more. A similar finding holds for the other occupational groups considered, with only health workers seeing a sizeable fall in respondents with depressive symptoms (36 percent at age 17 to 23 percent at age 26). Overall, Table 3 provides little evidence that the mental health of junior teachers has declined compared to when they were younger, or that it is any worse than for other young professionals. Appendix Tables A3 and B3 which control for characteristics associated with occupational selection again confirm these finds. They illustrate how effect size differences in average GHQ scores between teachers and those working in other occupations are typically small (0.10 standard deviations or below), with the potential exception of health workers (effect size = 0.18).

Figure 1 illustrates the change in how teachers responded to each question on the GHQ, with figures referring to the percent of respondents who reported the symptom to currently be worse than usual. This is supplemented by Appendix D, which provides the equivalent results for all occupational groups.

<< **Figure 1** >>

There are two key points to note. First, for most of the questions, roughly the same percentage of teachers reported suffering from the problem at age 26 as age 17. This reaffirms our previous finding that the mental health of junior teachers is (on average) little different from before when they started working in their job. Second, there are two out of the 12 questions where teachers are more likely to report a negative outcome at age 26 (than at age 17); they tend to feel more constantly under strain (an increase from 39 to 44 percent) and unable to play a useful part in things (an increase from four to nine percent). Interestingly, the same pattern with respect to feeling ‘constantly under strain’ cannot be observed for individuals working in other jobs (see Appendix D). Likewise, after controlling for variables associated with occupational selection, Appendix A and B also indicate that teachers were much more likely to feel under constant strain than other university graduates (effect size = 0.34), those working in other lower-managerial professions (effect size = 0.22) and the Next Steps cohort as a whole (effect size = 0.31). This is therefore potentially one aspect of junior teacher’s mental health – feeling constantly under pressure – which may get worse as a result of their occupational choice.

Sleep

Table 4 turns to the specific issue of sleep, which previous research has shown to be affected by certain mental health problems, such as anxiety (Alvaro, Roberts and Harris 2013). There is no evidence that junior teachers get less sleep overall than other occupational groups; with most 26-year-olds around seven hours of sleep each night, irrespective of their job. In terms of quality of sleep, there is again little to suggest that junior teachers stand out. Those individuals who decided to become teachers were just as likely to report suffering from problems sleeping at age 17 (26 percent) as at age 26 (26 percent). Similarly, the percentage of teachers reporting issues with sleeping at age 26 is similar to other occupational groups. These findings are again confirmed in Appendix A and Appendix B, most differences between teachers and those working in other job being relatively small (0.15 standard deviations or below) after accounting for factors associated with occupational selection. Our overall interpretation of Table 4 is therefore that there is little suggestion that the quality and quantity of junior teacher's sleep differs substantially from young people working in other jobs.

<< **Table 4** >>

Social life

We have already seen how junior teachers tend to work longer hours per week (on average) than their former school peers pursuing other careers (recall Table 2). But does this then mean that junior teachers sacrifice their life outside of work and their social activities? Table 5 provides some insight into this issue of work-life balance.

<< **Table 5** >>

In general, there is little sign that junior teachers have a less active social life outside of work than other young people. Although they are less likely to go to the cinema, concert or theatre at age 26 than at age 17, the same pattern is also observed for other occupational groups. Junior teachers were also more likely to do regular exercise at age 26 (72%) than at age 17 (67%), with a similar increase also observed for graduates and other lower-managerial workers. More generally, at age 26, junior teachers are just as likely to participate in sport, visit museum/galleries, participate in group activities and to go to the pub as other occupational groups. Appendix A and B suggest that the only partial exceptions are that teachers may be slightly less likely to meet up with friends or have a meal out than those working in other jobs (estimated effect sizes are between 0.1 and 0.2) though there is a reasonable degree of uncertainty in this result (see Appendix Table A5 and B5). Similarly, the social activities of

teachers appear most different to office workers, with the latter more regularly going to a pub (70 percent versus 77 percent), having meals out (26 percent versus 40 percent) or meeting up with their friends (61 percent versus 72 percent). Nevertheless, our overall interpretation of Table 5 is that there is little suggestion that the work-life balance of junior teachers is substantially different to other occupational groups.

Alcohol consumption

To conclude, Table 6 compares junior teachers to other professions in terms of alcohol consumption, which is used by many adults in England as a way to cope with stress (Appleton and James 2018). Teachers drunk alcohol at roughly the same frequency at age 20 as at age 26, which is the same as for young professionals in other jobs. More generally, there is no clear pattern that teachers drink any more (or less) than other occupational groups, with the potential exception of office workers (20 percent of junior teachers say they drink at least two-to-three times a week, compared to almost 40 percent of office workers). This is also confirmed within Appendix A and B, where our modelling controlling for factors associated with occupational selection also suggests that teachers drink less at age 26 than those who work in an office. Yet the central message to be taken from Table 6 is that the alcohol consumption of junior teachers is not substantially different to other workers.

<< Table 6 >>

4. Conclusions

England is currently in the midst of a teacher retention and recruitment crisis (Coughlan 2018), with a third of newly qualified teachers leaving the profession within the first five years (Foster 2019). This is creating an under-supply of appropriately qualified teachers, particularly in secondary schools, with many school leaders now believing that this is having a negative effect on the quality of instruction that pupils receive (Jerrim and Sims 2019). Retaining more junior teachers is key to resolving this issue, yet we currently know relatively little about their quality of life and how this compares to other members from their cohort who have pursued different careers. Are there critical areas of junior teachers' jobs and lives that may be driving them out of the profession, such as long working hours, a lack of a social life or high levels of mental ill-health? Understanding such important issues is vital if policymakers are to direct resources (and provide support to junior teachers) in the most appropriate ways, so that more young people are willing to choose (and stay) in teaching.

The aim of this paper has been to generate new evidence on this matter, using rich cohort data from England. Following a group of teenagers from secondary school through to the labour market, we document how occupational choice (and teaching in particular) is associated with an array of outcomes in early adulthood (age 25/26). This not only includes how they are faring in the labour market (e.g. pay, working hours), but also their mental health, life satisfaction and aspects of their general well-being.

Against conventional wisdom, we find that junior teachers actually have *higher* levels of life satisfaction than their peers working in other occupations and in comparison to their age-cohort as a whole. Yet, within their jobs, they tend to work much longer hours (at least during term-time) than those pursuing other careers, and for little extra pay. Importantly, junior teachers are particularly likely to disagree with the statement that ‘Britain is a place where hard work is rewarded’, potentially highlighting how they feel undervalued and under-appreciated. This is consistent with the findings of Jerrim and Sims (2019:118), who used TALIS 2018 to show how most teachers in England do not feel valued by the policymakers, the media and society as a whole. However, despite regular news stories about the stress associated with being a junior teacher (Busby 2018) and increasing mental health problems within the profession (Bulman 2018), we find little evidence that the mental health of junior teachers is any worse than within other occupational groups. This holds true for responses to a widely used and validated mental health screening questionnaire (the GHQ) and also for a selection of other behaviours linked to stress, anxiety and depression, such as quantity and quality of sleep and excessive alcohol consumption. Likewise, despite the long hours that teachers work, there is no evidence that they have a less active social life than those working in other jobs.

These findings should, of course, be interpreted in light of the limitations of this study and the need for further research. Four particular issues stand out. First, as Next Steps is a general prospective longitudinal cohort study, the size of the teacher sample is limited (approximately 290 teachers). There is hence some uncertainty surrounding our estimates which future, larger data collections could help to resolve. Second, our focus has been upon one particular cohort of teachers at one specific age (25/26). One potential explanation for our null results for some outcomes (e.g. mental health) is that this group are still relatively new to the job and yet to be run-down by its demands. Future analysis of the next wave of Next Steps (once it has been collected) will provide further insights into the longer-term outcomes of teachers in this cohort.

Third, our outcomes are largely self-reported and hence subject to some measurement error. Ideally, biometric or other objective markers of cohort member's mental health and well-being will be collected in the future, though this is costly and intensive in terms of data collection demands. Finally, a strength of this paper is that we have been able to track young people from secondary school through to the labour market, meaning we are much better placed to account for selection into teaching than most previous studies. Yet we also recognise that any causal claims rest upon an (untestable) selection-upon-observables assumption. There could hence still be some unobservable factors, related to both our outcome measures and occupational choice, that may be confounding our results.

Despite these limitations, this paper has helped improve our understanding of the lives of recently qualified teachers. The key area where they are worse off than young people in other jobs is the long hours that they work (at least during term-time) and that they are less likely to believe that 'Britain today is a place where hard work is rewarded'. While there are many initiatives currently underway attempting to tackle the former (workload), there is much less policy discussion about the latter (teachers feeling that hard work goes unrewarded). Yet these two factors are potentially a toxic mix. If junior teachers are expected to work long hours – but do not feel that this effort is appreciated – it is little wonder why many end up choosing to leave. More work needs to be done to understand exactly why young teachers in England feel this way. But it does nevertheless suggest that government, education policymakers and school leaders need to make greater efforts to show junior teachers that their hard work and dedication to the job is highly valued and sincerely appreciated.

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Table 1. Comparison of global health outcomes between recently qualified teachers and other occupational groups

	Teachers		Lower managerial		Graduates		Health workers		Office job	
Life Satisfaction	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26
1. Very dissatisfied	0%	0%	1%	1%	1%	1%	0%	0%	3%	1%
2. Dissatisfied	2%	5%	6%	5%	3%	7%	2%	2%	6%	6%
3. Neither	9%	4%	11%	13%	9%	13%	5%	6%	7%	8%
4. Satisfied	52%	54%	50%	55%	55%	54%	47%	50%	51%	60%
5. Very satisfied	37%	37%	32%	26%	32%	25%	46%	42%	34%	25%
Average	4.22	4.24	4.05	4.01	4.13	3.95	4.37	4.33	4.07	4.03
General health	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26
% in good health	96%	95%	94%	93%	94%	93%	92%	97%	93%	97%

Notes: Figures refer unconditional percentages with the age 26 survey weight applied. The ‘average score’ refers to the average along the five-point scale, where 1 = very dissatisfied and 5 = very satisfied. See Appendix Table A1 (regression modelling) and B1 (propensity score matching) for equivalent results that control for occupational selection. Sample sizes are approximately 245 (teachers), 1,356 (lower managerial), 2,092 (graduates), 179 (health workers) and 216 (office jobs).

Table 2. Comparison of work-related outcomes between recently qualified teachers and other occupational groups.

	Teachers	Lower managerial	Graduates	Health workers	Office job
Mean working hours	48.2	39.6	39.6	40.1	41.9
Median weekly income (£)	467	439	445	521	538
Believe hard work is rewarded					
1. Strongly disagree	17%	16%	13%	13%	10%
2. Disagree	53%	45%	44%	49%	37%
3. Agree	27%	36%	40%	37%	48%
4. Strongly agree	3%	3%	4%	2%	5%
Average	2.16	2.26	2.34	2.27	2.47

Notes: Figures refer unconditional percentages with the age 26 survey weight applied. The ‘average score’ refers to the average along the four-point scale, where 1 = strongly disagree and 4 = strongly agree. See Appendix Table A2 (regression modelling) and B2 (propensity score matching) for equivalent results that control for occupational selection. Sample sizes are approximately 283 (teachers), 1,804 (lower managerial), 2,655 (graduates), 227 (health workers) and 271 (office jobs).

Table 3. Comparison of current mental health outcomes. Teachers versus other occupational groups.

GHQ total score	Teachers		Lower managerial		Graduates		Health workers		Office job	
	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26
0 (No evidence of anxiety depression)	43%	45%	39%	41%	35%	40%	24%	41%	32%	36%
1 to 3	36%	36%	36%	37%	39%	37%	40%	35%	38%	39%
4+ (suggestion of anxiety/depression)	21%	19%	24%	22%	26%	24%	36%	23%	30%	25%
Average GHQ score	1.91	1.97	2.25	2.14	2.33	2.32	2.96	2.14	2.58	2.37

Notes: Figures refer unconditional percentages with the age 26 survey weight applied. The ‘average score’ refers to the average across the 12-point GHQ scale. See Appendix Table A3 (regression modelling) and B3 (propensity score matching) for equivalent results that control for occupational selection. Sample sizes are approximately 248 (teachers), 1,509 (lower managerial), 2,220 (graduates), 188 (health workers) and 228 (office jobs).

Table 4. Comparison of sleep quality and quantity between recently qualified teachers and other occupational groups.

	Teachers		Lower managerial		Graduates		Health workers		Office job	
	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26
Hours of sleep	-	7.15	-	7.00	-	7.11	-	6.90	-	7.10
Lost sleep over worry										
1. Not at all	26%	22%	35%	24%	33%	25%	24%	20%	26%	22%
2. No more than usual	48%	51%	39%	50%	38%	50%	41%	50%	37%	54%
3. Rather more than usual	20%	19%	20%	20%	23%	19%	27%	25%	27%	19%
4. Much more than usual	6%	7%	6%	5%	5%	6%	7%	6%	10%	5%
Average	2.06	2.12	1.97	2.07	2.01	2.05	2.18	2.16	2.20	2.07

Notes: Figures refer unconditional percentages with the age 26 survey weight applied. The ‘average score’ refers to the average along the four-point scale, where 1 = not at all and 4 = much more than usual. See Appendix Table A4 (regression modelling) and B4 (propensity score matching) for equivalent results that control for occupational selection. Sample sizes are approximately 255 (teachers), 1,537 (lower managerial), 2,274 (graduates), 194 (health workers) and 235 (office jobs).

Table 5. Comparison of frequency of social activities between recently qualified teachers and other occupational groups.

	Teachers		Lower managerial		Graduates		Health workers		Office job	
	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26
Sport / exercise weekly	67%	72%	54%	66%	62%	71%	50%	66%	67%	68%
Visit museum / gallery monthly	-	13%	-	14%	-	19%	-	10%	-	18%
Cinema / concert / theatre monthly	80%	55%	74%	54%	77%	60%	76%	48%	77%	63%
Group activities monthly	-	14%	-	15%	-	16%	-	17%	-	11%
Pub / bar / club in last month	76%	70%	77%	71%	71%	72%	75%	59%	79%	77%
Meal out weekly	-	26%	-	33%	-	32%	-	29%	-	40%
Meet up with friends weekly	-	61%	-	68%	-	65%	-	63%	-	72%

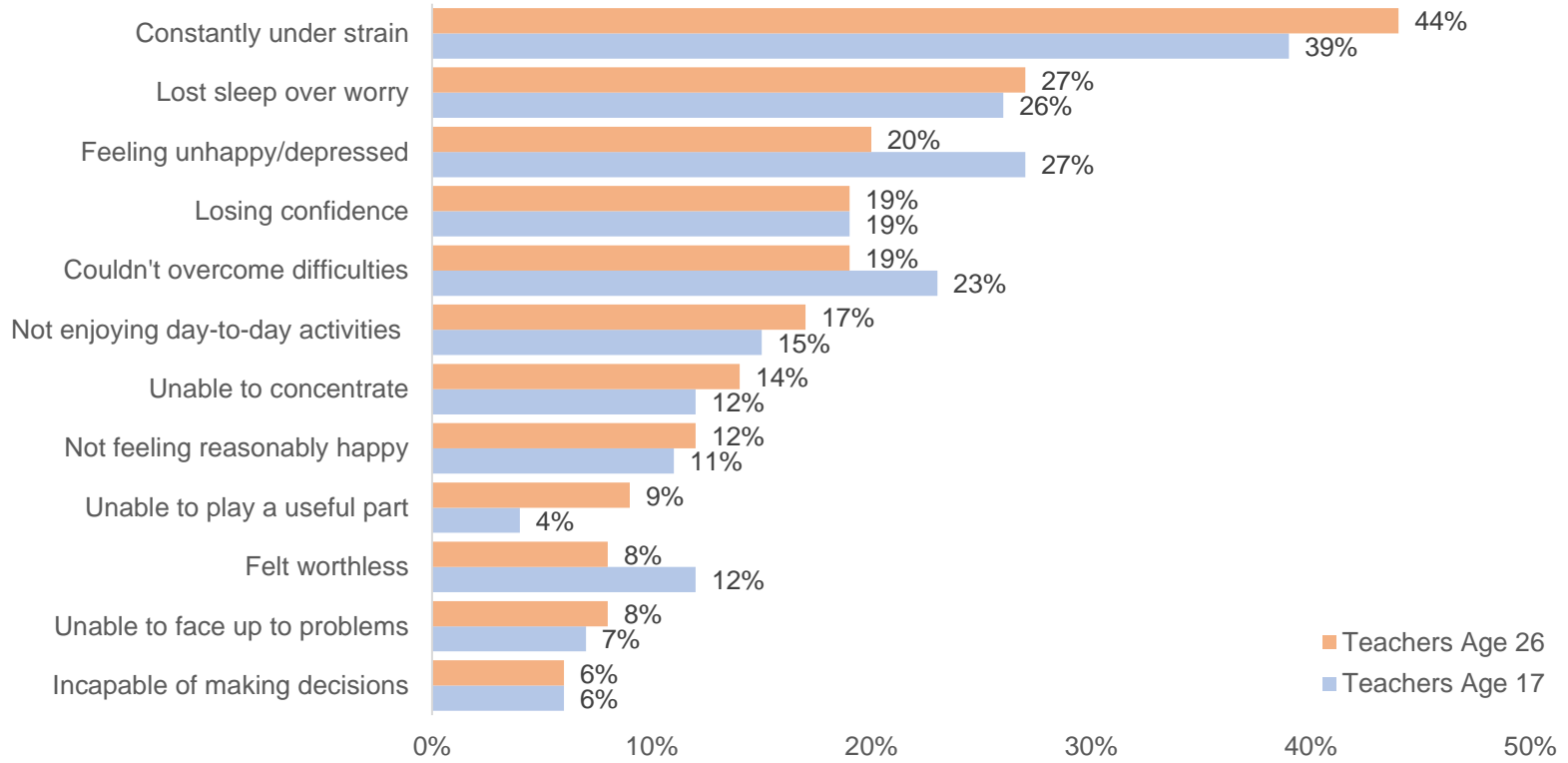
Notes: Figures refer unconditional percentages with the age 26 survey weight applied. See Appendix Table A5 (regression modelling) and B5 (propensity score matching) for equivalent results that control for occupational selection. Sample sizes are approximately 260 (teachers), 1,561 (lower managerial), 2,316 (graduates), 196 (health workers) and 238 (office jobs).

Table 6. Comparison of alcohol consumption between recently qualified teachers and other occupational groups.

Frequency of drinking	Teachers		Lower managerial		Graduates		Health workers		Office job	
	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26
1. Never	10%	11%	7%	11%	12%	14%	7%	11%	7%	11%
2. Monthly or less	26%	29%	30%	25%	25%	24%	38%	28%	18%	15%
3. 2-4 times a month	45%	40%	42%	39%	42%	34%	42%	43%	43%	35%
4. 2-3 times a week	14%	19%	15%	20%	16%	24%	12%	14%	23%	33%
5. 3-4 times a week or more	4%	1%	6%	5%	6%	5%	1%	3%	8%	6%
Average	2.76	2.69	2.84	2.84	2.81	2.83	2.63	2.68	3.07	3.09

Notes: Figures refer unconditional percentages with the age 26 survey weight applied. The ‘average score’ refers to the average along the five-point scale, where 1 = never and 5 = four-times a week or more. See Appendix Table A6 (regression modelling) and B6 (propensity score matching) for equivalent results that control for occupational selection. Sample sizes are approximately 244 (teachers), 1,357 (lower managerial), 2,094 (graduates), 177 (health workers) and 217 (office jobs).

Figure 1. Responses of teachers to each GHQ question. Age 17 and age 26.



Notes: Figures refer to the percentage of teachers reporting each symptom to be worse than usual. Sample sizes are approximately 255 teachers.

**Appendix Table A1. Comparison of global health outcomes between recently qualified teachers and other occupational groups.
Regression model estimates.**

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Life Satisfaction (ES)	0.35	4.23	0.24	2.46	0.37	3.68	-0.17	-0.90	0.27	1.67
General health (ES)	0.10	1.36	0.06	0.64	0.07	0.84	-0.33	-2.04	-0.10	-0.66

Notes: ES = Effect size; T= T-statistic. Estimates based upon OLS regression models for continuous outcome measures and ordinal logistic regression for ordered categorical outcomes. The estimated log-odds from the ordered logistic regression models have been converted into an approximate effect size based upon the transformation proposed by Chinn (2000). Standard errors clustered by school (the primary sampling unit). Controls include whether either of the cohort member's parent was a teacher, gender, locus of control measured at age 14/15 and age 19/20, self-reported general health before age 20, whether obtained a degree (and if this was from a high-status university), life-satisfaction at age 19/20, mental health (GHQ) at age 14/ 15 and 16/17, self-report of whether had a health problem at age 19/20, characteristics of future desired job reported at age 19/20, age moved out of home and whether aspired to work in an education job at age 17/18. Multiple imputation by chained equations used to account for missing covariate data.

**Appendix Table A2. Comparison of work-related outcomes between recently qualified teachers and other occupational groups.
Regression model estimates.**

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Average working hours	11	10.86	9	7.33	11	10.16	6	4.07	6	4.19
Average weekly income (£)	73	6.53	32	2.26	53	4.30	-60	-3.35	-84	-4.32
Believe hard work is rewarded (ES)	-0.23	-2.83	-0.27	-2.86	-0.32	-3.38	-0.25	-1.63	-0.58	-3.91

Notes: See notes to Table A1 for further details. ES = Effect size; T= T-statistic.

Appendix Table A3. Comparison of current mental health outcomes. Teachers versus other occupational groups. Regression model estimates.

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Constantly under strain	0.31	3.81	0.22	2.22	0.34	3.51	0.13	0.77	0.22	1.34
Capable of making decisions	0.08	0.93	0.19	1.60	0.05	0.55	0.05	0.21	-0.13	-0.66
Unable to concentrate	0.15	2.09	0.17	1.88	0.20	2.32	0.46	2.25	0.28	1.62
Lost sleep over worry	0.13	1.70	0.13	1.37	0.16	2.00	0.15	0.89	0.18	1.26
Able to face up to problems	0.11	1.27	0.12	1.15	0.13	1.30	-0.04	-0.15	0.10	0.50
Enjoy day-to-day activities	0.11	1.18	0.11	0.94	0.11	1.09	-0.02	-0.10	-0.06	-0.36
Couldn't overcome difficulties	0.07	0.79	0.10	0.95	0.08	0.86	0.13	0.74	-0.01	-0.07
Reasonably happy	-0.04	-0.43	0.01	0.14	-0.01	-0.17	0.05	0.29	-0.04	-0.28
Play a useful part	-0.09	-1.11	0.00	-0.03	-0.05	-0.62	0.14	0.64	-0.15	-0.96
Felt worthless	-0.15	-1.42	-0.04	-0.30	-0.12	-1.02	-0.08	-0.39	0.11	0.53
Losing confidence	-0.13	-1.58	-0.05	-0.55	-0.10	-1.05	0.05	0.33	-0.20	-1.32
Feeling unhappy/depressed	-0.14	-1.72	-0.14	-1.45	-0.10	-1.04	0.10	0.66	-0.05	-0.30
GHQ scale	0.05	0.64	0.10	1.34	0.09	1.09	0.18	1.47	0.06	0.54

Notes: See notes to Table A1 for further details. Figures reported are effect sizes and T-statistics.

**Appendix Table A4. Comparison of sleep quality and quantity between recently qualified teachers and other occupational groups.
Regression model estimates.**

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Lost sleep over worry (ES)	0.13	1.70	0.13	1.37	0.16	2.00	0.15	0.89	0.18	1.26
Sleep (hours)	0.05	0.52	0.02	0.14	-0.05	-0.65	0.09	0.50	-0.08	-0.54

Notes: See notes to Table A1 for further details. ES = effect size; T= T-statistic.

**Appendix Table A5. Comparison of frequency of social activities between recently qualified teachers and other occupational groups.
Regression model estimates.**

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Sport / exercise	0.10	1.18	0.11	0.96	0.05	0.56	0.03	0.17	0.07	0.46
Visit museum / gallery	0.03	0.39	0.01	0.09	-0.06	-0.66	0.36	1.88	0.09	0.59
Cinema / concert / theatre	0.00	0.05	-0.04	-0.48	-0.07	-0.71	0.23	1.44	-0.19	-1.18
Group activities	0.00	-0.03	-0.09	-0.82	-0.14	-1.44	-0.06	-0.35	-0.01	-0.03
Pub / bar / club	-0.03	-0.40	-0.16	-1.71	-0.05	-0.66	0.20	1.13	-0.40	-2.68
Meal out	-0.10	-1.15	-0.19	-1.85	-0.20	-1.94	-0.21	-1.10	-0.47	-2.72
Meet up with friends	-0.13	-1.86	-0.19	-2.20	-0.13	-1.52	-0.09	-0.53	-0.20	-1.23

Notes: See notes to Table A1 for further details. Figures reported are effect sizes and T-statistics.

Appendix Table A6. Comparison of alcohol consumption between recently qualified teachers and other occupational groups. Regression model estimates.

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Number of drinks per session	0.13	1.87	0.07	0.70	0.18	2.15	0.16	0.97	0.05	0.34
Frequency of binge drinking	0.06	0.87	-0.09	-1.00	0.06	0.72	-0.04	-0.23	-0.25	-1.71
Frequency of drinking	0.01	0.09	-0.14	-1.55	-0.02	-0.22	-0.15	-0.91	-0.40	-2.57

Notes: See notes to Table A1 for further details. Effect sizes and T-statistics reported.

Appendix B. Inverse Probability Weighting and matching estimates

In this appendix we report results from our Inverse Probability Weights (IPW) and matching estimates. The first stage of this model is a logistic regression, where we regress a binary indicator of whether the cohort member works as a teacher (1) or not (0) upon a range of background characteristics measured at age 19/20 or before. This includes:

- Gender
- Whether either of their parents was a teacher
- Whether they aspired to work in an education job at age 17/18
- Locus of control
- Whether they hold a degree and if this is from a Russell Group university
- A series of variables capturing the characteristics of the cohort member's job preferences at age 19/20¹⁰
- Attitudes towards work reported at age 18/19¹¹
- The extent that the cohort member enjoyed Year 11

These variables are all thought to be related to the decision to become a teacher, versus working in another job.

From this model, a predicted probability is generated for each cohort member predicting the probability that they would work as a teacher (based upon observable characteristics measured at age 20 or before). These probabilities are used to generate IPWs in approach 1 (simply the reciprocal of the predicted probability) or to match teachers to comparable individuals who work in another job in approach 2 (the three nearest neighbours based upon these probabilities). Our estimates are then generated by applying these IPWs when comparing mean outcomes between teachers and non-teachers (approach 1) or simply comparing average outcomes between teachers and their matched counterparts (approach 2). Within this analysis, we treat all outcome variables as continuous. For those variables that may be better thought of as ordered categorical variables, we convert results into an approximate effect size by dividing by

¹⁰ This includes the extent they felt the following characteristics were important for their future job: promotion opportunities, pay, it allows them to help others, is not routine, to have regular hours and whether its important to have a job / career, whether its important for them to raise a family in the future.

¹¹ This includes whether the extent the cohort member believes that (a) it is important to keep a job even if they don't like it; (b) whether they would leave a future job if they didn't like it; (c) whether they feel having any job is better than being unemployed and (d) their attitude to whether women with young children should work.

the standard deviation (measured across the entire Next Steps cohort). Results from both approaches are presented below in Appendix Tables B1 to B6.

Appendix Table B1. Alternative results for comparison of global health outcomes between recently qualified teachers and other occupational groups. Matching estimates.

(a) IPW

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Life Satisfaction	0.18	2.78	0.28	4.73	0.05	0.53	0.18	1.49
General health	0.08	1.10	0.15	2.15	-0.13	-1.45	0.06	0.46

(b) Matching

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Life Satisfaction	0.16	2.63	0.29	4.85	0.04	0.38	0.16	1.34
General health	0.03	0.37	0.15	2.24	-0.14	-1.21	0.01	0.12

Notes: Results reported as approximate effect sizes, unless otherwise stated. The set of variables included in the logistic selection model are gender, whether either of their parents was a teacher, whether they aspired to work in an education job at age 17/18, locus of control, whether they hold a degree (and if this is from a Russell Group university), characteristics of desired job reported at age 19/20, attitudes towards work reported at age 18/19 and the extent that the cohort member enjoyed Year 11. Single imputation used to account for missing covariate data.

Appendix Table B2. Alternative results for the comparison of work-related outcomes between recently qualified teachers and other occupational groups. Matching estimates.

(a) IPW

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Average working hours	10	11.60	11	12.77	7	6.03	6	4.60
Average income	33	2.93	49	4.07	-55	-2.49	-99	-4.56
Believe hard work is rewarded	-0.13	-1.68	-0.22	-3.15	-0.22	-1.69	-0.34	-2.96

(b) Matching

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Average working hours	9	10.94	11	13.38	6	5.66	6	5.31
Average income	35	2.80	63	4.56	-42	-2.16	-93	-4.01
Believe hard work is rewarded	-0.14	-1.58	-0.24	-3.26	-0.20	-1.58	-0.35	-3.71

Notes: Results reported as approximate effect sizes, unless otherwise stated. The set of variables included in the logistic selection model are gender, whether either of their parents was a teacher, whether they aspired to work in an education job at age 17/18, locus of control, whether they hold a degree (and if this is from a Russell Group university), characteristics of desired job reported at age 19/20, attitudes towards work reported at age 18/19 and the extent that the cohort member enjoyed Year 11. Single imputation used to account for missing covariate data.

Appendix Table B3. Alternative results for the comparison of current mental health outcomes. Teachers versus other occupations. Matching estimates.

(a) IPW

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Constantly under strain	0.27	3.28	0.23	3.18	0.17	1.19	0.11	0.65
Unable to concentrate	0.18	2.62	0.07	1.29	0.00	0.02	0.16	1.84
Lost sleep over worry	0.08	0.97	0.12	1.79	0.21	1.40	0.01	0.07
GHQ scale	0.05	0.76	0.01	0.12	0.07	0.63	-0.05	-0.30
Capable of making decisions	0.05	0.69	0.03	0.45	-0.19	-1.09	-0.21	-2.33
Couldn't overcome difficulties	0.03	0.43	-0.01	-0.16	0.18	1.46	-0.11	-0.60
Enjoy day-to-day activities	0.03	0.33	0.03	0.46	0.07	0.68	-0.12	-0.96
Able to face up to problems	0.01	0.15	0.04	0.63	-0.07	-0.79	-0.03	-0.33
Reasonably happy	-0.01	-0.10	0.01	0.08	0.02	0.20	-0.03	-0.18
Losing confidence	-0.06	-0.75	-0.11	-1.71	0.02	0.16	-0.29	-1.60
Felt worthless	-0.08	-1.08	-0.13	-2.01	0.11	1.24	-0.14	-0.64
Feeling unhappy/depressed	-0.07	-0.92	-0.09	-1.40	0.26	2.36	-0.10	-0.51
Play a useful part	-0.11	-1.51	-0.11	-1.62	0.05	0.46	-0.27	-2.06

(b) Matching

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Constantly under strain	0.31	3.84	0.21	2.65	0.29	2.44	0.13	0.83
Unable to concentrate	0.20	3.01	0.04	0.69	0.09	1.02	0.13	2.04
GHQ scale	0.11	1.59	0.01	0.16	0.17	2.31	-0.06	-0.34
Couldn't overcome difficulties	0.11	1.34	0.01	0.17	0.23	2.33	-0.07	-0.39
Capable of making decisions	0.11	1.55	0.00	0.00	-0.03	-0.33	-0.22	-2.28
Lost sleep over worry	0.07	0.84	0.09	1.33	0.38	3.73	0.00	-0.04
Enjoy day-to-day activities	0.09	1.11	0.09	1.35	0.14	1.33	-0.14	-1.22
Able to face up to problems	0.05	0.79	0.06	1.08	-0.06	-0.95	0.01	0.10
Felt worthless	-0.04	-0.48	-0.14	-2.10	0.13	1.74	-0.09	-0.43
Losing confidence	-0.04	-0.44	-0.10	-1.41	0.13	1.43	-0.23	-1.33
Reasonably happy	-0.06	-0.75	-0.01	-0.14	0.00	0.02	-0.01	-0.10
Play a useful part	-0.07	-1.00	-0.11	-1.59	-0.01	-0.11	-0.26	-2.13
Feeling unhappy/depressed	-0.09	-1.11	-0.13	-1.82	0.23	2.64	-0.11	-0.58

Notes: Results reported as approximate effect sizes, unless otherwise stated. The set of variables included in the logistic selection model are gender, whether either of their parents was a teacher, whether they aspired to work in an education job at age 17/18, locus of control, whether they hold a degree (and if this is from a Russell Group university), characteristics of desired job reported at age 19/20, attitudes towards work reported at age 18/19 and the extent that the cohort member enjoyed Year 11. Single imputation used to account for missing covariate data.

Appendix Table B4. Alternative results for the comparison of sleep quality and quantity between recently qualified teachers and other occupational groups. Matching estimates.

(a) IPW

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Lost sleep over worry	0.08	0.97	0.12	1.79	0.21	1.40	0.01	0.07
Sleep (hours)	0.04	0.43	-0.06	-0.87	0.04	0.21	-0.09	-0.86

(b) Matching

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Lost sleep over worry	0.07	0.84	0.09	1.33	0.38	3.73	0.00	-0.04
Sleep (hours)	0.01	0.07	-0.08	-0.96	0.05	0.38	-0.07	-0.71

Notes: Results reported as approximate effect sizes, unless otherwise stated. The set of variables included in the logistic selection model are gender, whether either of their parents was a teacher, whether they aspired to work in an education job at age 17/18, locus of control, whether they hold a degree (and if this is from a Russell Group university), characteristics of desired job reported at age 19/20, attitudes towards work reported at age 18/19 and the extent that the cohort member enjoyed Year 11. Single imputation used to account for missing covariate data.

Appendix Table B5. Alternative results for the comparison of frequency of social activities between recently qualified teachers and other occupational groups. Matching estimates.

(a) IPW

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Sport / exercise	0.02	0.31	0.00	-0.05	-0.16	-1.74	0.08	0.57
Visit museum / gallery	0.00	0.01	-0.03	-0.49	0.21	2.18	0.05	0.41
Pub / bar / club	-0.06	-0.85	0.05	0.84	-0.03	-0.28	-0.32	-3.20
Cinema / concert / theatre	-0.09	-1.38	-0.03	-0.49	-0.11	-0.69	-0.23	-1.91
Meet up with friends	-0.07	-0.91	-0.02	-0.30	-0.14	-1.55	-0.26	-3.62
Meal out	-0.13	-1.85	-0.13	-2.00	-0.27	-2.46	-0.49	-3.14
Group activities	-0.11	-1.36	-0.06	-0.74	-0.07	-0.50	-0.11	-0.57

(b) Matching

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Visit museum / gallery	0.03	0.37	0.02	0.34	0.27	2.88	0.04	0.26
Sport / exercise	0.00	0.03	-0.04	-0.62	-0.24	-2.78	0.02	0.19
Cinema / concert / theatre	-0.11	-1.54	0.05	0.77	-0.07	-0.59	-0.19	-2.43
Group activities	-0.11	-1.22	-0.08	-1.01	-0.19	-1.30	-0.25	-1.33
Meal out	-0.17	-2.41	-0.14	-2.03	-0.26	-2.42	-0.48	-2.69
Pub / bar / club	-0.16	-2.18	0.02	0.28	-0.06	-0.73	-0.33	-3.10
Meet up with friends	-0.15	-2.14	-0.02	-0.24	-0.13	-1.13	-0.26	-3.45

Notes: Results reported as approximate effect sizes, unless otherwise stated. The set of variables included in the logistic selection model are gender, whether either of their parents was a teacher, whether they aspired to work in an education job at age 17/18, locus of control, whether they hold a degree (and if this is from a Russell Group university), characteristics of desired job reported at age 19/20, attitudes towards work reported at age 18/19 and the extent that the cohort member enjoyed Year 11. Single imputation used to account for missing covariate data.

Appendix Table B6. Alternative results for the comparison of alcohol consumption between recently qualified teachers and other occupational groups. Matching estimates.

(a) IPW

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Number of drinks per session	0.02	0.33	0.13	1.97	0.07	0.52	-0.06	-0.53
Frequency of binge drinking	-0.01	-0.10	0.10	1.51	0.02	0.13	-0.28	-2.39
Frequency of drinking	-0.01	-0.17	0.08	1.26	-0.06	-0.33	-0.54	-3.70

(b) Matching

	Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T
Frequency of drinking	0.00	0.06	0.13	1.73	-0.02	-0.14	-0.52	-3.85
Frequency of binge drinking	0.00	-0.05	0.12	1.66	0.02	0.11	-0.22	-1.96
Number of drinks per session	-0.02	-0.23	0.13	1.93	0.02	0.15	0.02	0.24

Notes: Results reported as approximate effect sizes, unless otherwise stated. The set of variables included in the logistic selection model are gender, whether either of their parents was a teacher, whether they aspired to work in an education job at age 17/18, locus of control, whether they hold a degree (and if this is from a Russell Group university), characteristics of desired job reported at age 19/20, attitudes towards work reported at age 18/19 and the extent that the cohort member enjoyed Year 11. Single imputation used to account for missing covariate data.

Appendix C. Alternative estimates using alternative regression model specifications

Appendix Table C1. Alternative results for comparison of global health outcomes between recently qualified teachers and other occupational groups

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Life Satisfaction	0.37	5.30	0.30	3.68	0.41	5.23	-0.08	-0.58	0.34	2.68
General health	0.13	1.97	0.05	0.60	0.06	0.77	-0.27	-2.11	-0.05	-0.49

Notes: Results reported as effect sizes. See notes to Table A1. The set of controls has now been reduced to gender, general health reported before age 19/20, whether holds a degree (and if it is from a Russell Group university), life-satisfaction at age 19/20, health problem reported at age 19/20, GHQ scores at age 16/17 and age 19/20.

Appendix Table C2. Alternative results for the comparison of work-related outcomes between recently qualified teachers and other occupational groups

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Average working hours	11	12.40	9	9.30	10	11.13	6	5.46	7	6.21
Average income	64	5.94	24	2.06	35	3.15	-56	-3.73	-87	-6.01
Believe hard work is rewarded (ES)	-0.21	-2.63	-0.25	-2.85	-0.34	-3.93	-0.14	-1.14	-0.52	-4.00

Notes: ES = Effect sizes. See notes to Table A1. The set of controls has now been reduced to gender, general health reported before age 19/20, whether holds a degree (and if it is from a Russell Group university), life-satisfaction at age 19/20, health problem reported at age 19/20, GHQ scores at age 16/17 and age 19/20.

Appendix Table C3. Alternative results for the comparison of current mental health outcomes. Teachers versus other occupational groups.

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Constantly under strain	0.27	3.76	0.20	2.25	0.25	3.07	0.04	0.29	0.19	1.55
Unable to concentrate	0.09	1.45	0.14	1.80	0.12	1.67	0.18	1.17	0.13	1.04
Capable of making decisions	0.01	0.11	0.12	1.24	0.04	0.52	0.01	0.03	-0.13	-0.97
Lost sleep over worry	0.09	1.37	0.07	0.92	0.10	1.43	0.01	0.06	0.04	0.38
Able to face up to problems	0.05	0.71	0.07	0.83	0.08	0.90	-0.12	-0.71	-0.08	-0.55
Couldn't overcome difficulties	0.03	0.40	0.06	0.69	0.04	0.49	0.05	0.44	0.05	0.45
Enjoy day-to-day activities	0.00	0.01	0.02	0.21	0.00	0.04	-0.18	-1.26	-0.13	-0.97
Reasonably happy	-0.09	-1.13	-0.03	-0.38	-0.07	-0.86	-0.12	-0.90	-0.20	-1.83
Play a useful part	-0.15	-1.99	-0.04	-0.48	-0.07	-0.95	0.02	0.13	-0.14	-1.22
Felt worthless	-0.17	-1.89	-0.07	-0.69	-0.15	-1.55	-0.12	-0.83	-0.03	-0.20
Losing confidence	-0.18	-2.42	-0.11	-1.26	-0.17	-2.19	-0.08	-0.66	-0.27	-2.24
Feeling unhappy/depressed	-0.16	-2.28	-0.13	-1.73	-0.16	-2.11	-0.05	-0.50	-0.13	-1.16
GHQ scale	-0.02	-0.28	0.04	0.65	-0.01	-0.17	0.03	0.31	-0.05	-0.52

Notes: Estimates refer to effect sizes. See notes to Table A1. The set of controls has now been reduced to gender, general health reported before age 19/20, whether holds a degree (and if it is from a Russell Group university), life-satisfaction at age 19/20, health problem reported at age 19/20, GHQ scores at age 16/17 and age 19/20.

Appendix Table C4. Alternative results for the comparison of sleep quality and quantity between recently qualified teachers and other occupational groups

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Lost sleep over worry (ES)	0.09	1.37	0.07	0.92	0.10	1.43	0.01	0.06	0.04	0.38
Sleep (hours)	-0.02	-0.25	-0.03	-0.38	-0.05	-0.80	0.13	0.84	-0.05	-0.50

Notes: ES = Effect sizes. See notes to Table A1. The set of controls has now been reduced to gender, general health reported before age 19/20, whether holds a degree (and if it is from a Russell Group university), life-satisfaction at age 19/20, health problem reported at age 19/20, GHQ scores at age 16/17 and age 19/20.

Appendix Table C5. Alternative results for the comparison of frequency of social activities between recently qualified teachers and other occupational groups

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Sport / exercise	0.16	2.00	0.13	1.48	0.08	0.99	-0.01	-0.09	0.17	1.36
Visit museum / gallery	0.09	1.41	0.04	0.50	-0.07	-0.94	0.33	2.29	0.06	0.49
Group activities	0.05	0.65	-0.07	-0.93	-0.06	-0.83	-0.12	-0.98	0.01	0.12
Cinema / concert / theatre	0.06	0.82	-0.08	-1.01	-0.10	-1.17	0.23	2.01	-0.24	-1.92
Pub / bar / club	-0.02	-0.44	-0.17	-2.41	-0.11	-1.59	0.11	0.85	-0.46	-3.77
Meet up with friends	-0.13	-1.94	-0.23	-2.88	-0.18	-2.25	-0.11	-0.87	-0.19	-1.66
Meal out	-0.08	-1.17	-0.28	-3.35	-0.25	-3.11	-0.17	-1.28	-0.47	-3.56

Notes: Estimates refer to effect sizes. See notes to Table A1. The set of controls has now been reduced to gender, general health reported before age 19/20, whether holds a degree (and if it is from a Russell Group university), life-satisfaction at age 19/20, health problem reported at age 19/20, GHQ scores at age 16/17 and age 19/20.

Appendix Table C6. Alternative results for the comparison of alcohol consumption between recently qualified teachers and other occupational groups

	Next steps cohort		Lower managerial		Graduates		Health workers		Office job	
	Effect	T	Effect	T	Effect	T	Effect	T	Effect	T
Number of drinks per session	0.12	2.14	0.05	0.69	0.17	2.42	0.20	1.70	0.03	0.27
Frequency of binge drinking	0.04	0.77	-0.11	-1.50	0.03	0.50	0.06	0.46	-0.24	-2.10
Frequency of drinking	0.02	0.35	-0.13	-1.63	-0.05	-0.78	-0.03	-0.27	-0.34	-3.36

Notes: Estimates refer to effect sizes. See notes to Table A1. The set of controls has now been reduced to gender, general health reported before age 19/20, whether holds a degree (and if it is from a Russell Group university), life-satisfaction at age 19/20, health problem reported at age 19/20, GHQ scores at age 16/17 and age 19/20.

Appendix D. GHQ question-level analysis.

	Teachers		Lower managerial		Graduates		Health workers		Office job	
	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26	Age 17	Age 26
Unable to concentrate	12%	14%	17%	18%	19%	19%	19%	15%	21%	20%
Lost sleep over worry	26%	27%	26%	26%	29%	25%	34%	30%	36%	24%
Unable to play a useful part	4%	9%	10%	13%	11%	16%	8%	7%	12%	16%
Incapable of making decisions	6%	6%	7%	8%	9%	11%	11%	4%	6%	8%
Constantly under strain	39%	44%	39%	38%	44%	40%	53%	45%	46%	39%
Couldn't overcome difficulties	23%	19%	23%	18%	25%	20%	32%	17%	24%	20%
Not enjoying day-to-day activities	15%	17%	17%	17%	18%	20%	20%	22%	37%	43%
Unable to face up to problems	7%	8%	11%	10%	12%	11%	11%	9%	13%	10%
Feeling unhappy/depressed	27%	20%	28%	24%	28%	24%	40%	18%	38%	23%
Losing confidence	19%	19%	21%	22%	20%	23%	31%	20%	22%	24%
Felt worthless	12%	8%	13%	9%	11%	11%	13%	8%	14%	10%
Not feeling reasonably happy	11%	12%	14%	13%	13%	15%	18%	12%	17%	18%

Notes: Figures refer to the percentage of teachers reporting each symptom to be worse than usual.

