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Abstract

Mental health status often has a strong association with labour market outcomes. If people in temporary employment have poorer mental health than those in permanent employment then it is consistent with two mutually inclusive possibilities: temporary employment generates adverse mental health effects and/or individuals with poorer mental health select into temporary from permanent employment. We reveal that permanent workers with poor mental health appear to select into temporary employment thus signalling that prior cross sectional studies may overestimate the influence of employment type on mental health. We also reveal that this selection effect is significantly mitigated by job satisfaction.

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Keywords: Employment transitions; Psychological distress; Anxiety; Life satisfaction; Job satisfaction; UK

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1. Introduction

Health and labour market status are intrinsically linked. Health status can be separated into two mutually inclusive parts: physical conditions, that can strike in an instant and may heal fairly quickly, and mental health conditions[1] that typically onset gradually and are long-lasting. Analyses of these links adopt two distinct perspectives: first health impacts on employment and second employment impacts on health. This study assesses this relationship when the health issues under investigation are mental health conditions and the labour market transitions are between permanent and temporary employment.[2] With one in four people experiencing a mental health condition at some point in their lives and with depression affecting around one in twelve people (Mental Health Foundation, 2014), the links between mental health and the labour market should be a growing area of economics research.

Dominant explanations of the impacts of health on employment focus on health as a medically classified condition (Oliver, 1990) and emphasise the effects of clinical factors on an individual's employment capabilities. When an individual is in employment but has a mental health condition they are known to be at risk of experiencing presenteeism[3]; this might be because people with mental health conditions lack obvious outward signs and are reluctant to have to prove they are ill because of the resulting stigma (Department of Work and Pensions, 2013). However, individuals with mental health conditions are also known to be less likely to be in employment: in 2004 in the UK, 74 percent of the working age

[1] Throughout we use the term 'condition' to refer to issues that others sometime refer to as problems or illnesses, although mental health states can be neither a problem nor a debilitation. We retain others terminology when citing others work.

[2] A full analysis of all possible employment transitions is beyond the scope of this article but this article provides an illustration of a methodological approach that could be applied for the analysis of other employment transitions.

[3] Presenteeism is where an employee is unwell and remains in work but is less productive. As much as 60 percent of employment related costs of mental illnesses are due to presenteeism (Sainsbury Centre for Mental Health, 2007).

population was employment but the comparable figure for people considered disabled by a long term mental illness was only 21 percent (Social Exclusion Task Force, 2006).

A distinctly different literature emphasises the existence of the reverse association, i.e. that lower labour market status affects health status. For instance, Silla *et al.* (2005) find that temporary workers, specifically those low in volition and employability, experience relatively poor health outcomes and Martens *et al.* (1999) found that employees on temporary contracts, working irregular hours or working compressed working weeks report up to 40 percent more health complaints than those with non-flexible work schedules. However, Bardasi and Francesconi (2004) find no evidence that atypical employment is associated with adverse health consequences.

Hence the literature is divided on whether poor mental health affects labour market status or whether a poorer labour market status affects mental health; the literature is equally unclear about the links between mental health and changes in employment status. This article fills this gap in the literature by assessing whether deteriorating health status leads to labour market transitions or whether labour market transitions precede deteriorations in health.

The purpose of this article is to identify the temporal relationships between poor mental health and transitions between permanent and temporary employment, and thereby identify if poor mental health is a cause or consequence of this type of labour market transition. Our focus is on the transition between what many would term the best employment position – that of permanent employment – into a type of employment that is necessarily more precarious – temporary employment.

This article contributes to the literature in three ways. First, it presents an investigation into the associations between three indicators of mental health (psychological distress, psychological anxiety and life satisfaction), an overall indicator of general health and transitions between temporary and permanent employment. Second, our analysis draws on

data from and exploits the panel nature of the British Household Panel Survey (BHPS). Drawing on a longitudinal data set is crucial for understanding whether the link between employment type and health status is more of a causal outcome and/or a selection effect. If the temporarily employed are identified as having lower mental health status than those in permanent employment then it is consistent with two mutually inclusive possibilities: (i) temporary employment may generate adverse mental health effects and/or (ii) a selection effect whereby individuals with below average mental health are drawn away from permanent and into temporary employment. This is a particularly pertinent issue as Virtanen *et al.*'s (2005) literature review of the empirical association between temporary employment status and psychological morbidity suggests that many results may be confounded by selection bias: if the selection effect is discovered to be more prominent relative to a causal effect then cross sectional studies that present estimates of a negative influence of temporary employment on mental health status may be reporting upwardly biased estimates.

A potential confounding issue is that mental health is associated with job satisfaction, with either lower job satisfaction deteriorating mental health or worsening mental health adversely affecting job satisfaction. This argument is in line with Booth *et al.* (2002) who show that temporary workers in the UK report lower levels of job satisfaction. Thus we extend our analysis to examine the effect of job satisfaction on mental health indicators and in mitigating any effect of employment type on mental health. This particular extension is conducive to policy recommendations as mental health conditions can rarely be directly affected by managers whereas job satisfaction often can.

2. Health and employment status

The literature documents the recent upsurge in and diverse range of temporary employment arrangements (see for example De Cuyper *et al.*, 2008) and some mechanisms through which workers are thought to end up in temporary employment. De Jong *et al.* (2009) acknowledge that these mechanisms are varied and heterogeneous with some being free choice whereby workers choose temporary contracts due to preferable attributes, such as greater flexibility. De Jong *et al*. also acknowledge that people may end up in temporary employment because of a lack of suitable permanent employment opportunities, and many workers may enter temporary employment with the hope that it turns into a permanent contract. Morris and Vekker (2001) support this perspective when they reveal that 67 percent of temporary workers in the United States would prefer a permanent contract.

Employment status influences health

A diverse range of employment contracts and greater employee flexibility are often sought by organizations when they adapt and learn to compete in an increasingly globally competitive environment (Nollen, 1996) but it is recognised that workers experiencing temporary and limited time contracts, who often have poorer employment protection and lower job security, can experience greater pressures to fulfil duties in shorter time periods.[4] For instance, Hesselink and van Vuuren (1999) found that 44 percent of fixed-term workers in The Netherlands are worried about job insecurity compared with only 15.5 percent of permanent contract workers. These pressures can sap energy and intensify psychological stress, and thus

[4] Any causal link between temporary work arrangements and poor health may capture a degree of justification bias (Butler *et al.*, 1987) whereby individuals who are not working in permanent employment report their health in a worse state in response to social pressure to justify not working.

it is not entirely surprising that a literature has evolved, often supported by cross sectional evidence, which suggests that there is a relationship between employment status and health.

The evidence initially appears to corroborate a negative association between temporary employment and health. Temporary workers appear to experience more physical health conditions, such as higher fatigue and stress levels, backache and muscular pains (Benavides and Benach, 1999) and more mental health issues, such as lower psychological well-being (Lasfargues *et al*., 1999). Waenerlund *et al*. (2011) report that temporary employment is related to poorer levels of self-reported health and psychological distress at age 42 in Sweden with temporary employees having a higher risk of both non-optimal self-rated health and psychological distress. Other corroborating evidence is available from Benavides *et al*. (2000), who find workers on fixed-term contracts have worse physical health than permanent workers, and from Hesselink and Van Vuuren (1999), who report slightly higher percentages of workers on fixed-term contracts with physical health complaints than workers on permanent contracts.

Nevertheless, the effects of employment contract on health remain debatable. Part of the reason for this lack of consensus is that much of this literature tends to focus on general health issues and provides evidence using a string of data that combine physical and mental health conditions; this makes it difficult to disentangle mental and physical health conditions from labour market status. For instance, Rodriguez (2002) uses a single measure of perceived health for Britain and Germany between 1991 and 1993 and finds that full-time employees with fixed-term contracts in Germany are 42 percent more likely to report poor health than those who have permanent work contracts, with similar effects not found for Britain.

The lack of clarity on the effects of employment type on health is compounded by studies that show that fixed-term workers may have better health. Sverke *et al*.'s (2000) find fixed-term contract workers have better physical health compared to permanent workers and

Virtanen *et al*.'s (2003 and 2005) studies show that non-permanent workers in Finland also report better health. Similarly, Benavides *et al*. (2000) show that non-permanent employees tend to report lower work stress in a cross sectional study of 15 European countries.

Health influences employment type and propensity

Health may affect employment status instead of employment status affecting health. Meltzer *et al*.'s (2002) analysis of UK data reveals that just 57 percent of people who have a common mental disorder were working, compared with 69 percent of people who did not. They also found that only 9 (19) percent of people with a probable psychotic disorder, which includes most people with a severe mental disorder, were working full (part) time.[5]

The paths out of unemployment may also be associated with health status.[6] For instance, Strandh (2000) examines the impact of different exit routes from unemployment on mental health in Sweden and finds that mental health improves for unemployed workers who leave unemployment and enter either education or employment, although workers that move into self- or temporary employment experience less improvement in their mental health than those who move into permanent employment.

This debate regarding the relationship between employment and health status requires re-examination and clearer evidence, which includes not simply a comparison of employment states but a clear longitudinal analysis that captures changes in mental health status and employment transitions. Only then will we be able to comprehend whether a *change* in mental health status precedes or follows a change in employment type.

[5] There is evidence that those who have a common mental disorder are four to five times more likely to be permanently unable to work relative to those who do not have the disorder (Meltzer *et al*., 1995 and 2002).

[6] Waddell and Burton's (2006) review of the relationship between work and well-being firmly concludes that there is strong evidence that unemployment leads to poorer mental health, psychological distress and minor psychological/psychiatric morbidity, and that re-employment leads to improved self-esteem, improved general and mental health and reduced psychological distress.

Labour market transitions and health

Rather than focus on a comparison of workers in two different employment states some studies focus more squarely on the associations between health status and transitions between two employment states, but unfortunately there is a lack of consensus here too and it suffers from a number of limitations. First, the literature discussing the effect of employment transitions on health are extremely sparse. One exception is Robone *et al*. (2011) who consider the effects of contractual and working conditions on self-assessed health and psychological well-being and find that both contractual and working conditions have influences on health and psychological well-being which vary by gender.

Second, although some literature find changes in health status contribute to a change in employment status, the vast majority of these empirical studies examine transitions between unemployment and employment. For instance, García-Gómez *et al.* (2010) made use of twelve waves (1991 to 2002) of the BHPS and health measures that encompass both general health status and psychological well-being. They find that a worsening of mental health increases the hazard ratio of non-employment (and a greater effect for men relative to women), which suggests that self-assessed measures of general health and psychological well-being are important predictors of employment transitions in and out of the workforce.[7]

However, Anthony *et al.* (1995) demonstrate that a diagnosis of poor mental health is not a reliable predictor of work capacity but may predict the likelihood of being in employment. They followed a cohort of 275 individuals with severe mental illness and found subjects that underwent a psychosocial rehabilitation programme experienced improvements in their work skills and those that became employed had lower symptom scores. Although

[7] Strangely, García-Gómez *et al.* (2010) also find that for those not working, a worsening of mental health either had no significant impact on the hazard of employment, or actually increased it. The authors argue that these unexpected results can be attributed to deterioration in the capability of making decisions.

this finding cannot be generalised to the population, it does highlight the possible causal link between changes in health status and future changes in employment.

Wagenaar *et al.* (2012) corroborate García-Gómez *et al.*'s (2010) findings when they show that higher emotional exhaustion and lower general health can predict future unemployment of permanent employees. Their analysis of two consecutive waves of the Netherlands Working Conditions Cohort Study examined the existence of the hypothesized 'healthy worker effect,' whereby healthy workers move up employment status while those less healthy move down into temporary employment or unemployment. Using a range of health measures (including general health, musculoskeletal symptoms and work satisfaction) they examine whether employment contract changes between 2008 and 2009 could be predicted by health status in 2008 and reveal evidence which suggests that emotional exhaustion and poor mental workability are associated with a subsequent downward employment trajectory. However, although using two years of data is the minimum necessary to investigate employment transitions, a longer time frame is required if the investigation is going to ensure specific temporal issues, such as a recession, are not confounding the results. Furthermore, disentangling the complex issues associated with transitioning from permanent into temporary or fixed term employment contracts, which are known in the literature to be different[8], would improve our understanding of the relationships between health and employment. A strength of our approach is that the empirical research makes use of 18 waves of BHPS data and differentiates fixed term from seasonal / agency temping / casual contracts.

Third, it is plausible that there is no association between employment transitions and health change; for instance, Virtanen *et al*. (2003) argue there is no change in health

[8] Fixed-term workers appear to have lower rates of absenteeism than permanent workers (Benavides *et al*., 2000; Virtanen *et al*., 2003). Sickness absence rates tend to increase when employees move from fixed-term to permanent jobs; this is unlikely to be caused by deteriorations in health and might instead reflect fixed-term workers reducing their absenteeism for fear of job loss which is abated once in a permanent contract (Gash *et al*. 2006). Accordingly we split our sample into fixed term and non-fixed term temporary workers.

indicators when workers move from fixed-term to permanent jobs for Finland. Similarly, Rodriguez's (2002) short period panel data analysis highlights that the health status of part-time workers with permanent contracts is not significantly different from those who are employed full-time. Bardasi and Francesconi (2004) use the BHPS and find no evidence that atypical employment is associated with adverse health consequences when both health and employment are measured at the same time, thereby arguing that very few employment transitions appear to be the results of worsening in health outcomes. Similarly Sverke *et al*. (2000) report that fixed-term work has no effect on psychological well-being in Sweden and Artazcoz *et al*. (2005) finding no association between fixed-term contracts and poor mental health in Spain. However, the paucity of studies that suggest there is no association between mental health and employment transitions may be a reflection of the tendency for journals to publish articles that report definitive empirical results.[9]

Job satisfaction

A further potential issue is that mental health may be naturally positively associated with job satisfaction, with either greater job satisfaction lifting mental health status or improvements in mental health leading to the ability to accrue greater job satisfaction. Such a connection is in line with the findings of Booth *et al.* (2002) who show that temporary workers in the UK report lower levels of job satisfaction.

The suggestion of a contemporaneous positive association between temporary work and job satisfaction is by no means certain. For instance, Connelly and Gallagher (2004) find evidence of equal, lower and higher levels of job satisfaction among temporary workers,

[9] One area of transitioning that this article does not consider is the movement into retirement. Jones *et al.* (2010) show that health shocks are a key determinant of the hazard of early retirement for both gender.

relative to permanent ones. Similarly, De Cuyper and De Witte (2007) investigate the influence of employment type and volition on job satisfaction using a cross sectional survey in Belgium in 2004 and find permanent employment was negatively related to job satisfaction while volition was positively related. Such cross sectional evidence makes it difficult to pinpoint causal directions, and there is scant evidence from longitudinal data sources. Although the relationship between mental health and job satisfaction may be contemporaneous it is possible that any longitudinal connection between mental health and employment transition is mitigated by the association between mental health and job satisfaction. This would lead to slightly different policy implications: for instance, if someone suffered a deterioration in their mental health and this increased the risk they would resign then although their manager might not be able to boost their mental health they may instead be able to enhance their job satisfaction, which would then mean that the company would be more likely to reap the returns from any training embodied in that worker. Accordingly, this article assesses whether any dynamic association between poor mental health and employment transition is also associated with job satisfaction.

Given the limited existing literature on the role that mental health may have on an individual's labour market status, this study will tackle five questions that currently lack definitive answers: (i) Does poor mental health status have a causal influence on the transitions between permanent and temporary employment? (ii) Does mental health status differ significantly between individuals who never transit into temporary employment and those about to switch into that employment state? (iii) Do the effects described within (i) and (ii) differ for different types of temporary employment (e.g. fixed term contracts versus seasonal / agency temping / casual)? (iv) Are the findings robust to different measures of mental health? (v) Does job dissatisfaction affect relationship between mental health and employment type? We respond to these questions empirically in the remainder of this article.

3. Data and Methodology

We employ all 18 waves of the BHPS (1991-2008/2009), which is a nationally representative annual survey of more than 5,000 households and approximately 10,000 individuals in the UK. The BHPS contains self-reported data covering household composition, demographics, housing, training and education, health and caring, values and opinions, and labour market status and behaviour. This last domain provides the information that is required to identify if a respondent's work contract is permanent or otherwise. Our sample is constrained to the original BHPS sample covering Great Britain, to employees that are below the state pension age (16-59 for women, 16-64 for men), who report they were currently in paid employment and who gave a valid response to the employment contract question.

In line with Booth *et al*. (2002) and Bardasi and Francesconi (2004), we partition our sample of temporary employees into two distinct groups: those holding a seasonal, agency temping or casual contract and those with fixed term contracts. This is based on the expectation that fixed term contracts are usually of higher quality; examples would include junior doctors in the health sector and research fellows in the academic sector.

Our investigation into the associations between mental health and transitions between temporary and permanent employment exploits the panel nature of the BHPS. The data set allows comparisons to be made between respondents in permanent employment who never become temporarily employed (hereafter '*Nevers*') and five other groups: (i) those currently in permanent employment who subsequently become temporarily employed ('*Futures*'),[10] (ii) those currently in permanent employment who were previously in temporary employment contracts ('*Pasts*'), (iii) those who report a transition into temporary employment in the next

[10] *Nevers* are identified as never being in temporary employment during the sample period. Some may enter temporary employment after the 18 year sample time-frame, in which case the tendency is to under record the extent of the mental distress difference with *Futures*.

period ('*Switchers-in*'), (iv) those who report a transit out of temporary employment from the previous period ('*Switchers-out*') and (v) those currently in a spell of temporary employment ('*Temps*'). These distinct groups are illustrated with an example in Figure 1 of an individual who is permanently employed and becomes a temporary worker in period t, and then switches out of this status a year later. It is important to comprehend the differences between *Switchers-in* and *Futures,* and likewise between *Switchers-out* and *Pasts. Switchers-in* are those who report a transition into non-permanent employment between the present and the next year, whereas *Futures* are those who report further in the future a change into temporary employment. Similarly *Switchers-out* are those who report a transition out of temporary employment between the present and the previous year, whereas *Pasts* are those who report further in the past a transit out of temporary employment. The empirical analysis is conducted separately for two samples: one that covers movements in and out of seasonal / agency / casual contracts and one that covers movements in and out of fixed-term contracts.[11]

{Insert Figure 1 here}

Explorations into the associations between employment transitions and mental health require the use of data that relate to mental health status. Specifically, we use subjective[12] information sourced from three BHPS questions that have been used in the literature by Bardasi and Francesconi (2004), Taylor *et al.* (2009) and Clark and Georgellis (2013):

[11] In both samples we keep only individuals that are either *Nevers* or *Futures* in their first year of occurrence in the BHPS in order to capture the whole transition process of the latter group. Also, *Nevers* in both samples are those that never enter in either type of temporary employment. Finally, we exclude employees that record multiple transitions in the BHPS but recognise that future research could relax this constraint.

[12] García-Gómez et al. (2010) and Jones et al. (2010) attempt to correct for reporting bias in the use of subjective measures by employing a latent variable approach to predict an objective index of health. However, given the focus of our research design we theorise that it is the individual's own perceived health status that is paramount in its relationship with employment type and status; hence the use of subjective health indicators is required.

1. **Psychological distress** – This uses the General Health Questionnaire (GHQ) asked at each wave. The GHQ is widely used especially in the medical literature as an indicator of minor psychiatric morbidity and psychological distress (Madden, 2010). It has twelve items which each has a four (from 0 – 3) point scoring system that corresponds to different frequencies of specific individual feelings related to psychological wellbeing. The GHQ provides a measure of psychological distress ranging from 0 to 36 and it is standard in the literature to collapse it to a 12 point scale that captures the number of GHQ items for which the answer is either of the two points in the scoring system that correspond to low well-being. High scores then correspond to low feelings of wellbeing and hence a measure of higher psychological distress.[13]

2. **Psychological anxiety** – Respondents are asked in each wave: "*Do you have any of the health problems or disabilities listed on this card?*" A possible answer is "*Anxiety, depression or bad nerves, psychiatric problems*". Responses are binary and take the value of one if an individual suffers from a mental health condition related to anxiety or depression and zero otherwise.

3. **Life dissatisfaction** – In waves 6–10 and 12–18 respondents were asked: "*How dissatisfied or satisfied are you with your life overall?"* Responses were recorded on a 7-point Likert scale ranging from 'not satisfied at all' to 'completely satisfied.' We reorder the variable so that it is decreasing in life satisfaction and retain the same range.

The correlations between the three measures of mental distress are sufficiently small to indicate that they measure different aspects of mental distress. In particular, the largest

[13] The results presented here employ the 12 point scale but are robust to using the 36 point scale.

correlation is between psychological distress and life dissatisfaction (0.47) with the two remaining correlations being lower than 0.3.

We also make use of a general health indicator that permits comparison of the relationships between mental health and employment type versus general health and employment type. Specifically, we use the following information from the BHPS:

4. **Poor General Health** – Respondents are asked in each wave (except for 1999): "*Compared to people of your own age, would you say your health over the last 12 months on the whole has been: excellent, good, fair, poor or very poor?*" From this question, we construct a 5-point scale that is increasing in poor general health.

Descriptive statistics

The raw data reveals that individuals who have been in temporary employment at any time over the sample period tend to be female and have more dependent children in their household relative to those that do not enter temporary employment (*Nevers*). There is no obvious pattern with regard to educational attainment although *Temps* and *Switchers-out* are more likely to have university qualifications relative to *Nevers* in the seasonal, agency or casual worker category whereas *Nevers* are the group that is least likely to have university qualifications in the fixed term category. *Temps* are more likely to own their home outright, relative to the five other worker groups, which may reflect older workers who work part-time and have paid off their mortgage. Those who experience temporary employment contracts work fewer hours on average, relative to *Nevers*. *Nevers* are more likely to be managers and

have a bonus or profit share as part of their employment contract. These characteristics reflect the better job security and opportunities often available in the primary labour market.[14]

Mean values of the three mental health and one general health indicators split by the six sample groups are show on figure 2. Note that each panel corresponds to the same categories on the x-axis but have slightly different calibrations on the y-axis. The solid line corresponds to those in the seasonal/agency temping/casual sample and the dashed line corresponds to those on the fixed term sample.

{Insert figure 2 here}

Figure 2 reports percentage differences between the sample averages for each health measure for both temporary employment categories. Relative to *Nevers*, mental and general health is better on average for individuals who never work on a seasonal, agency or casual employment contract. It is also evident that in the vast majority of cases individuals on a fixed term contract report better health than individuals on a seasonal, agency or casual employment contract. *Switchers-in* have similar or worse mental health status to *Temps*; this tentatively suggests that relatively poor mental health is not a consequence of becoming a temporary worker but may actually be present in individuals who will be in temporary employment in the immediate future.

Similar patterns of relatively poor health are not as clear for those in the fixed term contract sample. Although *Futures*, *Switchers-in* and *Temps* report a slightly worse health status than *Nevers*, this does not hold for *Switchers-out*. *Switchers-out* are a particularly interesting group because in many cases they have no worse health than *Nevers*, suggesting that better health is associated with returning to permanent employment.

[14] Descriptive statistics for all variables are available from the authors on request.

Estimation approach

Our literature review highlights that cross sectional estimates of the relationship between contract type and wellbeing generally indicate that temporary employment contracts are negatively associated with mental wellbeing. The strengths of its two possible explanations, a sorting mechanism versus a causal effect, have been examined in previous studies through the use of longitudinal data and models that control for worker fixed effects. These studies find little or no causal influence of contract type on wellbeing (see Bardasi and Francesconi, 2004, and Green and Heywood, 2011), which is generally interpreted as suggesting that cross-sectional estimates are biased upwards.

However, application of a fixed effects regression approach may be limited in this instance. Fixed effects regression models identify the effect of contract type on wellbeing through the analysis of transitions between temporary and permanent employment. An insignificant coefficient in a fixed effects regression may itself be the result of two distinct mechanisms: (i) a selection / sorting effect where individuals with low levels of wellbeing require temporary employment (or are more easily hired on such contracts by employers) and (ii) a causal effect where individuals leave permanent for temporary contracts due to unusually poor permanent jobs, which influences both the change in contract type and their wellbeing.[15] If it is the former, and we initially assume that temporary contracts do indeed adversely influence wellbeing, then cross-sectional findings would be biased upwards; if the latter and if we cannot fully control in the model for working conditions and other variables capturing job quality then fixed effects models would give results that are biased downwards.

[15] While we refer to transitions into temporary employment as contract type changes, the majority of them are in fact job transitions. In our sample, over 70% of individuals in their first year of temporary employment report a change in job since the previous year.

In order to circumnavigate these potentially confounding issues, we adopt a novel baseline approach by focusing on the estimates from pooled cross-sectional models where the pattern of contract changes through time is identified by the series of relevant dummy variables (*Futures*, *Switchers-in*, etc.). The estimated coefficients of these models offer insights on the relative strength of the selection / sorting and causal impact explanations of the relationship between temporary employment and wellbeing, since the base category consists of individuals that never move into or out of temporary employment (i.e. *Nevers*). Ordered logit models are estimated for the three ordered dependent variables (psychological distress, life dissatisfaction and poor general health) and a binary logit model is used for our dummy dependent variable (psychological anxiety).

4. Results

In all our regressions the dependent variables are mental health measures and the issue of interest is whether their values are associated with mutually exclusively defined binary indicators of employment transitions. The *Nevers* category is chosen for the transition control throughout as it captures those people who do not transition into temporary employment. Included in all regressions are a variety of control variables. Prior literature has determined a number of factors that influence the mental health of an individual, including: age, gender, marital status, education, job type and employer characteristics. In line with the existing literature (e.g. Araya *et al.*, 2001; Breslau *et al.*, 2008; Lindstrom and Rosvall, 2012), all four health equations include covariates to capture the effects of personal and workplace

characteristics as well as year and regional dummies. To maintain focus, we present only the results that correspond to health and employment transitions.[16]

Tables 1 and 2 present four sets of results with the first three columns relating to mental health and the fourth relating to general health. The results presented in table 1 correspond to transitions between permanent and seasonal, agency temping or casual temporary employment and those in table 2 correspond to transitions between permanent and fixed term temporary work.

{Insert tables 1 and 2 here}

The results presented in table 1 reveal several interesting issues. First, these coefficients estimates are almost exclusively positive, suggesting that individuals who experience a temporary employment contract are more likely to report poorer levels of mental and general health than *Nevers*. Consistent with existing studies, our results show that *Temps* report poorer levels of psychological distress and greater dissatisfaction with life relative to *Nevers*.

Second, individuals who have recently or previously left temporary employment for permanent employment – i.e. *Switchers-out* and *Pasts* – rarely have significantly worse mental health than *Nevers*. One exception is that *Switchers-out* report greater life dissatisfaction than *Nevers*, which may reflect regret about giving up the positive attributes of temporary work, such as more leisure time and greater flexibility. The other exception is that *Pasts* report poorer general health than *Nevers*, which may reflect a physical health characteristic. In general and relative to *Nevers*, these results suggest that mental health is not significantly lower for those who have transitioned from temporary to permanent

[16] A complete set of regression results are available on request from the authors.

employment (*Switchers-out* and *Pasts*) and that even if temporary employment does negatively affect mental health (for which, however, no supportive evidence was found here) then the effects are short-lived once back in permanent employment.

Third, we reveal that individuals who will switch-in to temporary employment or be in temporary employment in the future report poorer health in the current period. Table 1 suggests that *Switchers-in* always report poorer mental health – including psychological distress, psychological anxiety and life dissatisfaction – and poorer general health than *Nevers*. These key findings strongly suggest that poor mental health *precedes* a switch into temporary employment.

The results are similar for individuals classified as *Switchers-in* and *Temps*. The respective coefficients in the mental health regressions are not statistically different in the psychological distress and life dissatisfaction models, although *Switchers-in* have a higher probability of anxiety than *Temps* (the coefficient of the latter dummy in this model is insignificant). These findings corroborate the view that seasonal, agency and casual temporary employment does not necessarily create poor mental health levels, but instead people with poor mental health are selected into these types of temporary work, either through choice or coercion. The larger coefficients on the *Switchers-in* dummy relative to *Futures* suggest that wellbeing (in terms of psychological anxiety and life dissatisfaction) deteriorates up to and peaks at the point of transition into temporary employment.[17]

Table 2 repeats the above analysis for those who transition into and out of fixed term contracts from permanent employment. These results are much weaker compared to the respective estimates in table 1 and highlight the heterogeneous nature of different forms of temporary employment in terms of its relationship with mental health indicators. There is some evidence that individuals with greater life dissatisfaction will switch-in to temporary

[17] These two coefficients are not statistically different in any of the estimated models.

employment and that individuals with poor general health will move into temporary employment in the future. There appears to be no significant and positive relationship with any of the mental health measures and *Temps*. Taken together, these results provide evidence in favour of a sorting explanation based on a negative relationship between mental health and being in seasonal, agency temping or casual employment which does not appear to exist for the potentially more secure and higher quality fixed term contract.

The final columns in tables 1 and 2 repeat the analysis for poor general health. The corresponding coefficients and significance levels for the employment type dummies are not as strong as those for psychological distress and life dissatisfaction. This may be a signal that it is mental health issues that are important rather than general health that drives selection into temporary employment. In particular, the estimates in the final column of table 1 reveal that both *Pasts* and *Futures* are significantly more likely (albeit at the 10% significance level) to have poorer general health relative to *Nevers*. Again, the positive and significant coefficients for the *Future*s and *Swithers-in* dummies point to the sorting mechanism explanation of the relationship between temporary employment and general health status.

Tables 3 and 4 present the corresponding marginal effects estimates[18] of the dummy variables of interest. The estimates in table 3 suggest that the probability of belonging in the highest category of psychological distress is increased by 0.4 percentage points (or 36 percent in relative terms) for *Switchers-in*, while the probability of reporting the lowest category is decreased by 8 percentage points (or 14 percent in relative terms) relative to *Nevers*.[19] Even larger relative effects are estimated for *Switchers-in* for the other two mental health

[18] For the ordered logit models we focus on the probabilities of reporting the value in the lowest and the highest category of the dependent variable, while for the case of psychological anxiety we focus on the probability of reporting such a health condition. Average marginal effects are calculated for the sample of *Nevers* and give the average change in the probability of interest for a hypothetical switch from a *Nevers* status to one of the other statuses.

[19] The relative effect is derived by dividing the average marginal effect with the estimated predicted probability reported in the first row of Table 3.

indicators, while the marginal effects for *Futures* are somewhat smaller. These findings again raise the question about whether individuals with more mental health issues choose to leave permanent employment status of their own volition or whether such individuals are encouraged to leave. When suitable data become available future research could investigate whether *Futures* and *Switchers-in* experience higher levels of discrimination (whether real or perceived) in permanent employment.

{Insert tables 3 and 4 here}

Is poor job satisfaction a catalyst?

Although the results presented in tables 1 and 2 are compelling, they cannot distinguish between two possible sorting mechanisms. At first sight it would appear that individuals with poor mental and general health sort into temporary employment. However, it is unclear whether our results correspond to a standard sorting mechanism or whether individuals who are categorised as *Switchers-in* or *Futures* have experienced unusually poor permanent jobs which then influence their employment transitions and wellbeing.

Although the above regression results include controls for variables that can be thought as proxies of job quality (promotion prospects, work location, shift working etc.), it is possible to delve deeper into this issue by re-estimating the models with the inclusion of an extra explanatory variable: job dissatisfaction. Although it could be argued that job dissatisfaction itself may be an imperfect proxy, we argue in line with Green and Heywood

(2011) that this variable is likely to capture the crucial aspect of each individual's perception of whether their job is poor.[20]

The job dissatisfaction variable is measured in each wave of the BHPS, when respondents are asked the following question: *"All things considered, how satisfied or dissatisfied are you with your present job?"* As with the life dissatisfaction measure, responses were given using the same 7 point Likert scale that was rescaled so that it decreased with job satisfaction, i.e. increasing in job dissatisfaction.[21] Figure 2 also reports percentage differences between the sample averages for job dissatisfaction for both temporary employment categories relative to *Nevers*. Job dissatisfaction is better on average for individuals on fixed term contracts than on seasonal, agency or casual contracts. *Futures*, *Switchers-in* and *Temps* have noticeably poorer job satisfaction than *Nevers*.

Regardless of whether permanent workers move into a seasonal / agency temping / casual or fixed term contract, when the job dissatisfaction variable is included in the regressions it acts as a significant precursor to all three indicators of poor mental health and the one indicator of overall poor general health, as shown in table 5.[22]

{Insert table 5 here}

The inclusion of job dissatisfaction as a right hand side control significantly reduces the magnitude of the coefficients in the psychological distress regressions. In particular, the coefficient of the *Futures* dummy in the upper panel of Table 5 is reduced by around 40 percent compared with Table 1 and moves from being statistically significant at the 1 percent

[20] We recognise that job satisfaction is likely to be endogenous in our models but we are not interested directly in the coefficient of the job dissatisfaction control but simply in its impact on the transition dummies.

[21] The correlations between job dissatisfaction and the four health variables (distress, anxiety, life dissatisfaction and poor general health) are 0.245, 0.085, 0.332 and 0.127 respectively.

[22] As with all abbreviated results presented here, the full set of results are available from the authors on request. In table 5 we include the same control variables that were included in tables 1 and 2.

level to being just significant at the 10 percent level. While the impact on psychological distress of being classed as *Temps,* relative to *Nevers,* remains significant at the 1 percent level, the respective coefficient drops from 0.406 to 0.276.[23] These findings suggest that accounting for job dissatisfaction acts to mitigate the impact of employment type on psychological distress for those either already in temporary employment or entering temporary work in the future. In the psychological anxiety regression, the only statistically significant impact was on the dummy for *Switchers-in* in table 1 and this effect now becomes statistically insignificant in table 5. In terms of life dissatisfaction, the inclusion of job dissatisfaction reduces the magnitude and removes statistical significance from the coefficients of the *Temps*, *Switchers-in* and *Future* dummies. These results add further weight to the argument that unhappiness in the workplace mitigates the role of employment arrangement *per se* with respect to mental health.

Sensitivity checks[24]

A first objection to the above results concerns the probable existence of different determinants of health and well-being by gender (see e.g. Madden, 2010, for the case of psychological distress). However, when these models are estimated for each gender separately we identify no substantial differences for any of the five variables of interest. This holds for all health measures and for both types of temporary contracts. It should be noted, though, that the coefficients are more precisely estimated for women relative to men, a direct result of the higher incidence of temporary employment among the women in our sample.

[23] Note that here we do not report a table with the respective marginal effects. Most of the estimates for the variables of interest are insignificant, rendering the estimated marginal effects not statistically different from zero in the vast majority of cases.

[24] The additional results discussed in this section are available from the authors on request.

Second, the same questions that we answer in this article can be dealt with through the use of a different modelling procedure. Following Clark and Georgellis (2013), who build on Clark *et al.* (2008), we constructed and entered into our health and well-being equations a series of lead and lag dummy variables denoting each year before and after the transition into temporary employment.[25] The results of this exercise confirm the main conclusions drawn from our main analysis presented above. For the seasonal / agency temping / casual sample, and in the majority of cases, the results for the lead variables (and mainly those closer to the year of the transition) were positive and significant, while they were also not statistically different from the variable denoting the first year into the temporary contract. The results for the fixed term contract sample were weaker than we initially identified, with most of the dummy variables of interest being statistically insignificant. Controlling for job dissatisfaction again showed that a possible sorting mechanism is related to the perceived low quality of permanent jobs among employees who change contract status: when job dissatisfaction was added in the models, all coefficients of the lead variables reduced in absolute size.[26]

4. Conclusion

Existing research suggests that poorer labour market status is associated with lower general health status but there is a lack of clarity whether poor health is associated with a subsequent transition into temporary from permanent employment or whether being in temporary employment somehow causes poorer mental health. This article fills a gap in the literature by

[25] The base category in such a model consists of employees observed in the years long before their transition into temporary employment (with the length of this period depending on when exactly we start measuring the first lead variable towards the new contract) and, of course, *Nevers*.

[26] Using this specification allows us to estimate linear models with fixed effects, which is something that is not possible with our main modelling approach. The coefficients in the fixed effects models were smaller but provided essentially the same story as above.

focusing on the association between mental health status (psychological distress, psychological anxiety and life satisfaction), general health, and the movements between temporary and permanent employment and identifies whether there is any selection or causation between employment contract and mental health status.

Evidence is provided that permanent employees who will be in temporary employment in the future have lower levels of mental health relative to individuals who never transition into temporary employment. We also find that the strength of the relationship between employment type and mental health is similar for those currently in temporary employment and for those in permanent employment who will be temporarily employed in the future. We therefore surmise that people with low mental wellbeing select into temporary employment. Thus it is likely that prior cross sectional evidence investigating the relationship between health status and employment type may be an amalgam of selection and situational effects and overestimate the effect of contract type on wellbeing.

The second major finding is that controlling for job dissatisfaction in our regressions significantly dampened the influence of employment type on mental health. In particular, once we include job dissatisfaction on the right hand side of our regression equations, the coefficients fell substantially and dropped in significance for those in temporary employment or entering temporary work in the future. One potential explanation for this result is that individuals observed as leaving their permanent jobs and entering into temporary employment may have lower quality jobs, where quality is proxied by job dissatisfaction. If this explanation holds true then fixed effects estimation in a panel data set such as the BHPS may put a downward bias on the estimated effects of contract type change on an individuals' wellbeing. It appears that poor health influences employment contract type via a selection effect, and in part this selection process is governed by individuals who switch into temporary employment due to unhappiness in the workplace.

Further research should investigate whether it is the circumstance of permanent employment that results in the individuals' unhappiness in the workplace or whether it is particular job characteristics or both. It may be that this group of individuals find it difficult to handle the demands of permanent employment, as they may be balancing heavy work and home responsibilities, and this increases the need to select into temporary contracts. Future research should also investigate the potential positive externalities derived from temporary employment contracts, such as a haven for people not able to deal with the stresses and strains of permanent employment, and whether this is a reason behind the increasing number of individuals in temporary employment contracts.

References

Anthony, W. A., E. S. Rogers, M. Cohen and R. R. Davies (1995) 'Relationship between psychiatric symptomatology, work skills, and future vocational performance', *Psychiatric Services* 46(4), 353-358.

Araya, R., G. Rojas, R. Fritsch, J. Acuna and G. Lewis (2001) 'Common mental disorders in Santiago, Chile. Prevalence and socio-demographic correlates', *The British Journal of Psychiatry* 178, 228-233.

Artazcoz, L., J. Benach, C. Borrell and I. Cortes (2005) "Social inequalities in the impact of flexible employment on different domains of psychological health," *Journal of Epidemiology and Community Health* 59(9), 761-767

Bardasi, E. and M. Francesconi (2004) 'The impact of atypical employment on individual wellbeing: evidence from a panel of British workers', *Social Science and Medicine* 58(9), 1671-1688

Benavides, F. G. and J. Benach (1999) 'Precarious employment and health-related outcomes in the European Union', *Luxembourg: Office for Official Publications of the European Communities*

Benavides, F. G., J. Benach, A. Diez-Roux and C. Roman (2000) 'How do types of employment relate to health indicators? Findings from the second European survey on work conditions', *Journal of Epidemiology and Community Health* 54, 494–501.

Booth, A. L., M. Francesconi and J. Frank (2002) 'Temporary jobs: stepping stones or dead ends?', *The Economic Journal* 112, 189-213.

Butler, J., R. Burkhauser, J. Mitchell and T. Pincus (1987) 'Measurement error in self-reported health variables', *The Review of Economics and Statistics* 69, 644-650.

Breslau, J., M. Lane, N. Sampson and R. C. Kessler (2008) 'Mental disorders and subsequent educational attainment in a US national sample', *Journal of Psychiatric Research* 42(9), 708-716

Clark, A. and Y. Georgellis (2013) 'Back to Baseline Britain: Adaptation in the British Household Panel Survey", *Economica* 80(319), 496-512.

Clark, A. and A. Oswald (1996) 'Satisfaction and Comparison Income', *Journal of Public Economics* 61(3), 359-381

Clark, A., E. Diener, Y. Georgellis and R. Lucas (2008) 'Lags And Leads in Life Satisfaction: a Test of the Baseline Hypothesis', *Economic Journal* 118(529), F222-F243

Connelly, C. and D. Gallagher (2004) 'Emerging trends in contingent work research', *Journal of Management* 30, 959-83

De Cuyper, N., J. de Jong, H. De Witte, K. Isaksson, T. Rigotti and R. Schalk (2008) 'Literature review of theory and research on the psychological impact of temporary employment: Towards a conceptual model', *International Journal of Management Reviews* 10, 25-51.

De Cuyper, N. and H. De Witte (2007) 'Associations between contract preference and attitudes, well-being and behavioural intentions of temporary workers', *Economic and Industrial Democracy* 28, 292-312.

De Jong, J., N. De Cuyper, H. De Witte, I. Silla and C. Bernhard-Oettel (2009) 'Motives for accepting temporary employment: A typology of temporary workers' *International Journal of Manpower* 30, 237-252

Department of Work and Pensions (2013) Mental health and work, Department for Work and Pensions. Available from https://www.gov.uk/government/uploads/system/uploads/ attachment_data/file/212266/ hwwb-mental-health-and-work.pdf

García-Gómez, P., A. M. Jones and N. Rice (2010) 'Health effects on labour market exits and entries', *Labour Economics* 17, 62-76.
Gash, V., A. Mertens and L. Romeu Gordo (2006) "Are fixed-term jobs bad for your health? A comparison between Western Germany and Spain," *Institute of Management Berlin, Berlin School of Economics and Law*, Woking paper #27
Green, C. and J. Heywood (2011) 'Flexible contracts and subjective well-being' *Economic Inquiry* 49, 716-729
Hesselink D. J. K. and T. van Vuuren (1999) "Job Flexibility and job insecurity: The Dutch case," *European Journal of Work and Organizational Psychology* 8 (2), 273-93.
Jones, A. M., N. Rice and J. Roberts (2010) 'Sick of work or too sick to work? Evidence on self-reported health shocks and early retirement from the BHPS', *Economic Modelling* 27, 866-880.
Lindstrom, M. and M. Rosvall (2012) 'Marital status, social capital, economic stress, and mental health: a population-based study', *The Social Science Journal* 49(3), 339-342.
Madden, D (2010) 'Gender differences in mental well-being: a decomposition analysis', *Social Indicators Research* 99(1), 101-114.
Martens, M., F. Nijhuis, M. van Boxtel and J. Knottnerus (1999) 'Flexible work schedules and mental and physical health. A study of a working population with non-traditional working hours', *Journal of Organizational Behavior* 20, 35-46.
Meltzer, H., B. Gill, M. Petticrew and K. Hinds (1995) Economic activity and social functioning of adults with psychiatric disorders, OPCS surveys of psychiatric morbidity in Great Britain. Report No. 3. OPCS, Social Survey Division, London: HMSO.
Meltzer, H., N. Singleton, A. Lee, P. Bebbington, T. Brugha and R. Jenkins (2002) The social and economic circumstances of adults with mental disorders, London: Stationery Office
Mental Health Foundation (2014) Stigma and discrimination, Downloaded from http://www.mentalhealth.org.uk/help-information/mental-health-a-z/S/stigma-discrimination/ on 01/07/2014 at 10.01GMT
Morris, M. and A. Vekker (2001) 'An alternative look at temporary workers, their choices, and the growth in temporary employment', *Journal of Labor Research* 22, 373-90
Nollen, S. (1996) 'Negative aspects of temporary employment', *Journal of Labor Research* 17, 567-82
Oliver, M. (1990) *The politics of disablement*, London: Macmillan.
Robone, S., A. Jones, N. Rice (2011) Contractual conditions, working conditions and their impact on health and well-being, *European Journal of Health Economics* 12(5), 429-444
Rodriguez, E. (2002) Marginal employment and health in Britain and Germany: does unstable employment predict health? *Social Science and Medicine* 55(6), 963-979
Sainsbury Centre for Mental Health (2007) Mental health at work: developing the business case. Policy paper 8. London: Sainsbury Centre for Mental Health.
Silla, I., F. Gracia and J. Peiro (2005) 'Job security and health-related outcomes among different types of temporary workers', *Economic and Industrial Democracy* 26, 89-117.
Social Exclusion Task Force (2006) *Reaching out: An action plan on social exclusion*, London: Cabinet Office.
Strandh, M. (2000) 'Different Exit Routes from Unemployment and their Impact on Mental Well-Being: The Role of the Economic Situation and the Predictability of the Life Course', *Work, Employment and Society* 14, 459-479
Sverke, M., D. G. Gallagher and J. Hellgreen (2000) "Job stress, well-being, and work attitudes among employees with different employment contracts", in: Isaksson, K., C. Hogstredt, C. Eriksson and T. Theorell (eds.) *Health effects of the New Labour Market*, New York: Kluwer Academic/Plenum Publishers, 145-67
Taylor, M., S. P. Jenkins and A. Sacker (2009) 'Financial capability and wellbeing: Evidence from the BHPS', Occasional Paper Series no. 34, Financial Services Authority.
Virtanen M., M. Kivimäki, M. Elovainio, J. Vahtera and J. E. Ferrie (2003) "From insecure to secure employment: changes in work, health, health related behaviours, and sickness absence," *Occupational and Environmental Medicine* 60, 948-953.
Virtanen, M., M. Kivimäki, M. Joensuu, P. Virtanen, M. Elovianio and J. Vahtera (2005) 'Temporary employment and health: a review', *International Journal of Epidemiology* 34, 610-622.
Waddell, G. and A. Burton (2006) *Is work good for your health and wellbeing?* London: The Stationery Office
Waenerlund, A.-K., P. Virtanen and A. Hammarström (2011) Is temporary employment related to health status? Analysis of the Northern Swedish Cohort, *Scandinavian Journal of Public Health* 39(5), 533-539
Wagenaar, A. F., M. A. J. Kompier, I. L. D. Houtman, S. N. J. van den Bossche and T. W. Taris (2012) 'Employment contracts and health selection', *Journal of Occupational and Environmental Medicine* 54(10), 1192-1200.

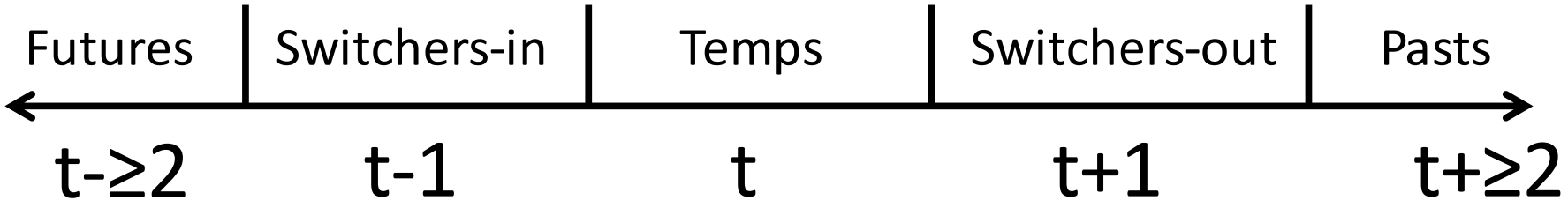

Figure 1: Transition types

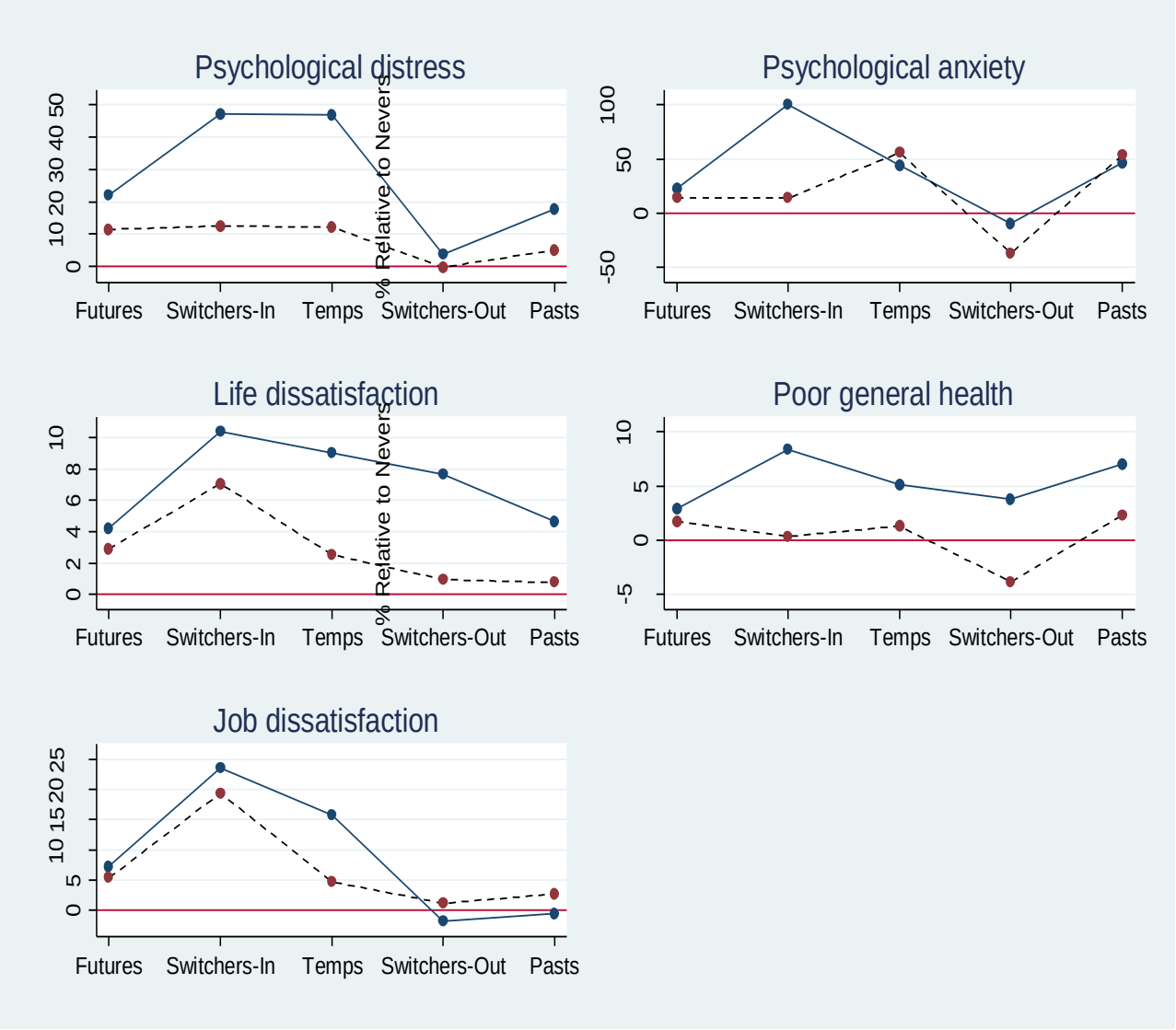

Figure 2: Differences in reported mental health and job dissatisfaction

Notes: Solid lines correspond to seasonal/agency temping/casual sample whereas the dashed equivalents correspond to the fixed term contracts sample

Table 1: Ordered and binary logistic regressions, where temporary work = Seasonal/Agency Temping/Casual

Dependent Variable	Psychological distress	Psychological anxiety	Life dissatisfaction	Poor general health
Variable		**Coefficients**		
Futures	0.206***	0.231	0.228*	0.138*
Switchers-in	0.330**	0.567**	0.389**	0.221*
Temps	0.406***	0.072	0.314**	0.020
Switchers-out	0.040	-0.419	0.259*	0.015
Pasts	0.055	0.064	0.149	0.151*
Number of observations	50,275	50,751	32,098	47,801

Note: All ordered logistic and logistic regressions control for repeat observations through standard error clustering correction for intragroup correlations. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels respectively.

Table 2: Ordered and binary logistic regressions, where temporary work = Fixed Term Contract

Dependent Variable	Psychological distress	Psychological anxiety	Life dissatisfaction	Poor general health
Variable		**Coefficients**		
Futures	0.105	0.226	0.161	0.190**
Switchers-in	0.177	0.180	0.338**	0.059
Temps	0.033	0.320	0.097	0.022
Switchers-out	-0.098	-0.637	0.024	-0.191
Pasts	-0.033	0.326*	-0.055	0.054
Number of observations	49,985	50,452	31,944	47,521

Note: All ordered logistic and logistic regressions control for repeat observations through standard error clustering correction for intragroup correlations. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels respectively.

Table 3: Predicted probabilities and average marginal effects where temporary work = seasonal / agency temping / casual

Dependent variable	Psychological distress		Psychological anxiety	Life dissatisfaction		Poor general health	
Probability of interest	P(*y* = *lowest*)	P(*y* = *highest*)	P(*y* = 1)	P(*y* = *lowest*)	P(*y* = *highest*)	P(*y* = *lowest*)	P(*y* = *highest*)
Predicted probability for *Nevers*	0.554	0.011	0.043	0.083	0.003	0.283	0.006
AMEs							
Futures	-0.050***	0.003***	0.010	-0.016**	0.001*	-0.026*	0.001*
Switchers-in	-0.080**	0.004**	0.029*	-0.025***	0.002*	-0.042*	0.001
Temps	-0.099***	0.005***	0.003	-0.021***	0.001*	-0.004	0.0001
Switchers-out	-0.010	0.0005	-0.014	-0.018*	0.001	-0.003	0.0001
Pasts	-0.013	0.001	0.003	-0.011*	0.001	-0.029*	0.001

Note: Predicted probabilities and average marginal effects are calculated over the *Nevers* sample for each model, based on the results from Table 1. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels respectively, based on standard errors calculated via the delta method.

Table 4: Predicted probabilities and average marginal effects where temporary work = fixed term contract

Dependent variable	Psychological distress		Psychological anxiety	Life dissatisfaction		Poor general health	
Probability of interest	P(*y* = *lowest*)	P(*y* = *highest*)	P(*y* = 1)	P(*y* = *lowest*)	P(*y* = *highest*)	P(*y* = *lowest*)	P(*y* = *highest*)
Predicted probability for *Nevers*	0.553	0.011	0.043	0.082	0.003	0.283	0.006
AMEs							
Futures	-0.025	0.001	0.010	-0.011	0.001	-0.036**	0.001**
Switchers-in	-0.043	0.002	0.008	-0.022***	0.001**	-0.012	0.0003
Temps	-0.008	0.0004	0.015	-0.007	0.0003	-0.004	0.0001
Switchers-out	0.024	-0.001	-0.020**	-0.002	0.0001	0.039	-0.001
Pasts	0.008	-0.0003	0.015	0.004	-0.0002	-0.011	0.0003

Note: Predicted probabilities and average marginal effects are calculated over the *Nevers* sample for each model, based on the results from Table 2. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels respectively, based on standard errors calculated via the delta method.

Table 5: Ordered and binary logistic regressions, with the inclusion of job dissatisfaction

Dependent Variable	Psychological distress	Psychological anxiety	Life dissatisfaction	Poor general health
		Coefficients		
Temporary work = **seasonal / agency temping / casual**				
Futures	0.122*	0.139	0.096	0.084
Switchers-in	0.085	0.383	0.086	0.100
Temps	0.276***	-0.027	0.170	-0.054
Switchers-out	0.029	-0.431	0.242	0.007
Pasts	0.052	0.056	0.158*	0.151*
Job dissatisfaction	0.385***	0.304***	0.548***	0.207***
Number of observations	50,243	50,715	32,082	47,765
Temporary work = **fixed term contract**				
Futures	0.042	0.177	0.086	0.157*
Switchers-in	-0.055	0.022	0.165	-0.056
Temps	-0.008	0.295	0.050	0.0001
Switchers-out	-0.135	-0.649	-0.015	-0.213
Pasts	-0.039	0.316*	-0.084	0.053
Job dissatisfaction	0.388***	0.310***	0.554***	0.210***
Number of observations	49,954	50,417	31,929	47,486

Note: All ordered logistic and logistic regressions control for repeat observations through standard error clustering correction for intragroup correlations. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels respectively.

Supplementary documents follow - Not intended for publication

Table S1: Seasonal/Agency Temping/Casual – Sample means

	Nevers	*Futures*	*Switchers-In*	*Temps*	*Switchers-Out*	*Pasts*
Mental health						
Psychological distress	1.648	2.013	2.426	2.422	1.711	1.940
Psychological anxiety	0.043	0.053	0.086	0.062	0.039	0.063
Life dissatisfaction	2.758	2.874	3.044	3.007	2.969	2.886
Poor general health	1.974	2.032	2.139	2.076	2.049	2.113
Job dissatisfaction	2.632	2.823	3.251	3.047	2.583	2.617
Smoking Behaviour						
Number of cigarettes per day	3.830	5.055	6.316	5.701	6.525	4.594
Demographics						
Age	38.782	36.774	36.742	39.254	37.255	41.592
Female	0.477	0.587	0.582	0.585	0.623	0.659
Marital Status						
Married or cohabiting	0.762	0.749	0.672	0.689	0.701	0.768
Widowed/divorced/separated	0.075	0.070	0.098	0.086	0.078	0.121
Never married	0.163	0.181	0.230	0.225	0.221	0.110
Household Structure						
No. of dependent children in household	0.615	0.648	0.660	0.625	0.760	0.760
Educational Attainment						
University	0.153	0.147	0.148	0.161	0.162	0.136
Further education	0.307	0.259	0.336	0.324	0.333	0.422
A-level	0.132	0.126	0.107	0.094	0.103	0.087
O-level/GCSEs	0.214	0.214	0.176	0.185	0.172	0.149
Other qualifications	0.075	0.123	0.127	0.126	0.103	0.110
No qualifications	0.120	0.132	0.107	0.111	0.128	0.095
Housing Tenure						
Outright owner	0.136	0.104	0.139	0.180	0.128	0.125
Own with Mortgage	0.697	0.707	0.594	0.551	0.603	0.695
Private renter	0.078	0.077	0.111	0.138	0.118	0.068

Social housing	0.089	0.111	0.156	0.131	0.152	0.113
Job Characteristics						
Union Covered, Member	0.333	0.363	0.250	0.141	0.196	0.331
Union Covered, Not Member	0.174	0.146	0.164	0.242	0.279	0.198
Not Covered	0.493	0.491	0.586	0.617	0.525	0.472
Annual Labour Income (log)	9.560	9.259	9.161	8.852	9.026	9.380
Total Hours Worked per week	39.456	36.909	35.971	31.686	34.485	34.971
Manager/Foreman/Supervisor	0.422	0.335	0.312	0.114	0.191	0.273
Holding a second job	0.082	0.128	0.115	0.111	0.113	0.091
Promotion opportunities available	0.524	0.499	0.451	0.203	0.441	0.458
Pay includes bonus / profit share	0.353	0.250	0.271	0.121	0.186	0.266
Member of employer pension scheme	0.576	0.509	0.344	0.131	0.294	0.519
Pay includes annual rises	0.470	0.478	0.340	0.190	0.476	0.494
Shift worker	0.085	0.102	0.062	0.054	0.078	0.059
Flexibility in job location						
Work from home	0.012	0.007	0.004	0.007	0.010	0.005
Other work location	0.069	0.052	0.066	0.141	0.103	0.052
Work at employer's premises	0.833	0.873	0.836	0.748	0.824	0.866
Work needs travelling	0.087	0.068	0.094	0.104	0.064	0.077
Occupation One Digit Classification						
Managers & Administrators	0.179	0.074	0.098	0.037	0.044	0.106
Professional	0.096	0.137	0.098	0.121	0.078	0.118
Associate Professional & Technical	0.118	0.128	0.111	0.089	0.098	0.094
Clerical & Secretarial	0.183	0.230	0.201	0.252	0.284	0.280
Craft & related	0.109	0.095	0.066	0.086	0.078	0.083
Personal & Protective Services	0.094	0.101	0.143	0.143	0.137	0.108
Sales	0.069	0.085	0.103	0.084	0.078	0.083
Plant & Machine Operatives	0.088	0.097	0.111	0.116	0.088	0.083
Other Occupations	0.063	0.053	0.070	0.072	0.113	0.046
Employing Sector						

Private Firm	0.713	0.663	0.734	0.716	0.696	0.653
Civil Service	0.051	0.025	0.021	0.012	0.015	0.019
Local Government	0.130	0.199	0.148	0.185	0.196	0.205
Other Public	0.079	0.090	0.062	0.067	0.054	0.080
Non-profit	0.028	0.025	0.037	0.020	0.039	0.044
Firm Size -Number of Co-workers						
Workplace Size 1-49	0.462	0.495	0.500	0.578	0.549	0.488
Workplace Size 50-499	0.361	0.336	0.361	0.284	0.328	0.368
Workplace Size over 500	0.178	0.170	0.139	0.138	0.123	0.144
Standard Industrial Classification						
Agriculture & Fishing	0.009	0.010	0.025	0.017	0.020	0.010
Mining & Quarrying	0.004	0.004	0.012	0.003	0.005	0.003
Manufacturing	0.216	0.246	0.184	0.128	0.147	0.169
Electricity, Gas & Water	0.011	0.001	0.004	0.007	0.010	0.008
Construction	0.039	0.037	0.045	0.047	0.034	0.035
Wholesale & Retail Trade	0.146	0.142	0.168	0.091	0.157	0.143
Hotels & Restaurants	0.037	0.038	0.041	0.067	0.054	0.027
Transport, Storage & Communication	0.067	0.061	0.066	0.077	0.064	0.055
Financial Intermediation	0.059	0.046	0.049	0.047	0.025	0.044
Real Estate & Business Activities	0.100	0.077	0.115	0.175	0.128	0.093
Public Administration & Defence	0.088	0.063	0.045	0.054	0.054	0.081
Education	0.074	0.123	0.094	0.121	0.098	0.143
Health & Social Work	0.107	0.127	0.123	0.116	0.157	0.140
Social & Personal Services	0.036	0.023	0.021	0.030	0.044	0.040
Private Households & Extra-Territorial Organizations	0.006	0.002	0.008	0.020	0.005	0.009
Region						
London	0.090	0.077	0.098	0.096	0.113	0.086
South East	0.196	0.234	0.189	0.215	0.216	0.206
South West	0.091	0.085	0.111	0.084	0.083	0.092
East Anglia	0.043	0.020	0.025	0.035	0.029	0.033

East Midlands	0.090	0.058	0.082	0.084	0.108	0.108
West Midlands	0.087	0.113	0.078	0.072	0.078	0.074
North West	0.117	0.125	0.123	0.091	0.074	0.080
Yorkshire & Humber	0.093	0.108	0.131	0.091	0.142	0.143
North	0.064	0.068	0.062	0.099	0.034	0.055
Wales	0.048	0.052	0.033	0.054	0.025	0.050
Scotland	0.080	0.062	0.070	0.079	0.098	0.074
Observations (Total = 50,275)	**46,133**	**1,822**	**244**	**405**	**204**	**1,467**

Note: Number of observations and the sample means are calculated based on the sample for the psychological distress model.

Table S2: Fixed Term Contract – Sample means

	Nevers	*Futures*	*Switchers-In*	*Temps*	*Switchers-Out*	*Pasts*
Mental health						
Psychological distress	1.648	1.837	1.855	1.849	1.644	1.733
Psychological anxiety	0.043	0.049	0.049	0.067	0.027	0.066
Life dissatisfaction	2.758	2.838	2.953	2.828	2.784	2.779
Poor general health	1.974	2.009	1.981	2.000	1.898	2.020
Job dissatisfaction	2.632	2.773	3.141	2.756	2.662	2.703
Smoking Behaviour						
Number of cigarettes per day	3.830	4.262	3.705	3.371	4.160	3.923
Demographics						
Age	38.782	35.500	35.339	38.707	38.831	42.029
Female	0.477	0.565	0.502	0.530	0.498	0.474
Marital Status						
Married or cohabiting	0.762	0.737	0.683	0.746	0.726	0.759
Widowed/divorced/separated	0.075	0.056	0.053	0.084	0.091	0.110
Never married	0.163	0.207	0.264	0.170	0.183	0.131
Household Structure						
No. of dependent children in household	0.615	0.699	0.687	0.723	0.726	0.770
Educational Attainment						
University	0.153	0.210	0.229	0.273	0.237	0.240
Further education	0.307	0.276	0.291	0.325	0.343	0.372
A-level	0.132	0.155	0.141	0.136	0.123	0.131
O-level/GCSEs	0.214	0.186	0.198	0.143	0.155	0.154
Other qualifications	0.075	0.103	0.066	0.065	0.073	0.061
No qualifications	0.120	0.069	0.075	0.059	0.069	0.043
Housing Tenure						
Outright owner	0.136	0.082	0.097	0.128	0.128	0.153
Own with Mortgage	0.697	0.745	0.692	0.683	0.676	0.720
Private renter	0.078	0.076	0.115	0.105	0.114	0.066

Social housing	0.089	0.097	0.097	0.084	0.082	0.061
Job Characteristics						
Union Covered, Member	0.333	0.377	0.282	0.229	0.297	0.382
Union Covered, Not Member	0.174	0.154	0.198	0.375	0.283	0.226
Not Covered	0.493	0.468	0.520	0.396	0.420	0.392
Annual Labour Income (log)	9.560	9.417	9.404	9.325	9.464	9.704
Total Hours Worked per week	39.456	38.103	38.806	35.390	37.489	38.101
Manager/Foreman/Supervisor	0.422	0.390	0.317	0.229	0.279	0.368
Holding a second job	0.082	0.139	0.159	0.157	0.128	0.100
Promotion opportunities available	0.524	0.529	0.467	0.342	0.530	0.474
Pay includes bonus / profit share	0.353	0.313	0.269	0.113	0.196	0.277
Member of employer pension scheme	0.576	0.533	0.463	0.338	0.489	0.643
Pay includes annual rises	0.470	0.481	0.471	0.392	0.530	0.536
Shift worker	0.085	0.075	0.075	0.048	0.069	0.057
Flexibility in job location						
Work from home	0.012	0.010	0.009	0.011	0.005	0.011
Other work location	0.069	0.068	0.150	0.132	0.105	0.089
Work at employer's premises	0.833	0.869	0.753	0.793	0.813	0.818
Work needs travelling	0.087	0.053	0.088	0.065	0.078	0.082
Occupation One Digit Classification						
Managers & Administrators	0.179	0.133	0.115	0.088	0.105	0.128
Professional	0.096	0.172	0.163	0.220	0.183	0.165
Associate Professional & Technical	0.118	0.120	0.150	0.155	0.123	0.158
Clerical & Secretarial	0.183	0.216	0.150	0.197	0.206	0.178
Craft & related	0.109	0.087	0.110	0.096	0.069	0.094
Personal & Protective Services	0.094	0.085	0.115	0.122	0.132	0.099
Sales	0.069	0.064	0.049	0.023	0.037	0.033
Plant & Machine Operatives	0.088	0.084	0.084	0.050	0.064	0.053
Other Occupations	0.063	0.039	0.066	0.048	0.082	0.093
Employing Sector						

Private Firm	0.713	0.681	0.617	0.484	0.548	0.546
Civil Service	0.051	0.037	0.035	0.034	0.046	0.073
Local Government	0.130	0.160	0.198	0.268	0.219	0.227
Other Public	0.079	0.082	0.106	0.168	0.132	0.095
Non-profit	0.028	0.040	0.044	0.046	0.055	0.060
Firm size – Number of Co-workers						
Workplace Size 1-49	0.462	0.436	0.476	0.398	0.393	0.416
Workplace Size 50-499	0.361	0.394	0.326	0.340	0.379	0.399
Workplace Size over 500	0.178	0.170	0.198	0.262	0.228	0.185
Standard Industrial Classification						
Agriculture & Fishing	0.009	0.003	0.013	0.004	0.009	0.006
Mining & Quarrying	0.004	0.007	0.004	0.006	0.005	0.002
Manufacturing	0.216	0.262	0.159	0.138	0.142	0.150
Electricity, Gas & Water	0.011	0.010	0.004	0.004	0.014	0.005
Construction	0.039	0.029	0.049	0.057	0.037	0.043
Wholesale & Retail Trade	0.146	0.112	0.088	0.023	0.078	0.071
Hotels & Restaurants	0.037	0.029	0.022	0.008	0.023	0.014
Transport, Storage & Communication	0.067	0.046	0.057	0.050	0.064	0.085
Financial Intermediation	0.059	0.066	0.044	0.065	0.050	0.031
Real Estate & Business Activities	0.100	0.106	0.167	0.113	0.123	0.145
Public Administration & Defence	0.088	0.051	0.075	0.103	0.078	0.094
Education	0.074	0.144	0.128	0.220	0.187	0.192
Health & Social Work	0.107	0.102	0.128	0.153	0.151	0.124
Social & Personal Services	0.036	0.028	0.057	0.044	0.037	0.027
Private Households & Extra-Territorial Organizations	0.006	0.004	0.004	0.011	0.005	0.012
Region						
London	0.090	0.110	0.128	0.115	0.119	0.097
South East	0.196	0.228	0.234	0.231	0.210	0.212
South West	0.091	0.087	0.084	0.071	0.078	0.084
East Anglia	0.043	0.027	0.044	0.036	0.046	0.037

East Midlands	0.090	0.081	0.053	0.063	0.082	0.068
West Midlands	0.087	0.086	0.084	0.055	0.064	0.101
North West	0.117	0.109	0.079	0.099	0.091	0.099
Yorkshire & Humber	0.093	0.083	0.101	0.080	0.073	0.060
North	0.064	0.050	0.053	0.078	0.073	0.088
Wales	0.048	0.038	0.049	0.050	0.055	0.049
Scotland	0.080	0.102	0.093	0.124	0.110	0.107
Observations (Total = 49,985)	**46,133**	**1,567**	**227**	**477**	**219**	**1,362**

Note: Number of observations and the sample means are calculated based on the sample for the psychological distress model.

Full results

Table 1: Ordered and binary logistic regressions, where temporary work = Seasonal/Agency Temping/Casual

Dependent Variable	Psychological distress	Psychological anxiety	Life dissatisfaction	Poor general health
Variable		**Coefficients**		
Futures	0.206***	0.231	0.228*	0.138*
Switchers-In	0.330**	0.567**	0.389**	0.221*
Temps	0.406***	0.072	0.314**	0.020
Switchers-Out	0.040	-0.419	0.259*	0.015
Pasts	0.055	0.064	0.149	0.151*
Smoking Behaviour				
Number of Cigarettes per day	0.009***	0.027***	0.015***	0.020***
Demographics				
Age	-0.008***	0.008*	0.009***	0.007***
Female	0.351***	0.736***	-0.004	0.128***
Marital Status (Reference: Never married)				
Married or cohabitating	0.013	-0.069	-0.504***	0.041
Widowed/divorced/separated	0.332***	0.459***	0.307***	0.044
Household Structure				
No. of Dependent Children	0.034**	0.021	0.119***	-0.041**
Educational Attainment (Reference: No Qualifications)				
Degree	0.178**	0.031	0.256**	-0.242***
Further education	0.073	0.043	0.237***	-0.144**
A-level	0.029	-0.193	0.292***	-0.157**
O-levels/GCSEs	-0.043	-0.132	0.198**	-0.180***
Other qualifications	-0.074	-0.250	-0.066	-0.134*
Housing Tenure (Reference: Social housing)				
Outright owner	-0.110*	0.040	-0.309***	-0.196***
Own with mortgage	-0.067	-0.006	-0.172**	-0.229***
Private renter	0.044	0.249*	-0.024	-0.075
Job Characteristics				
Union Covered, Member	0.072*	0.154	0.142***	0.099**
Union Covered, Not Member	-0.062	-0.085	0.023	0.020
Annual Labour Income	-0.016	-0.066	-0.032	-0.096***

Hours Worked per Week	0.005***	-0.001	0.008***	0.001
Manager / supervisor	0.074**	-0.150*	0.020	-0.060*
Holding a second job	0.019	-0.152	0.069	-0.097**
Promotion opportunities available	-0.124***	-0.238***	-0.106***	-0.103***
Pay includes bonus / profit share	0.023	-0.031	-0.015	-0.050*
Employer provided pension available	0.038	0.004	0.021	-0.027
Pay includes annual rises	-0.121***	-0.051	-0.178***	-0.033
Shift worker	-0.056	-0.345***	-0.009	-0.143**
Flexibility in job location (Reference: work at employers' premises)				
Work from home	0.159	0.148	-0.214*	-0.110
Other work location	-0.007	-0.194	-0.073	-0.054
Work needs travelling	-0.010	-0.069	-0.149**	-0.020
Occupation One Digit Classification (Reference: Other)				
Managers and Administrators	0.050	-0.216	-0.102	-0.248***
Professional	0.107	-0.131	-0.030	-0.149*
Associate Professional and Technical	0.049	-0.261	-0.005	-0.121
Clerical and Secretarial	0.035	-0.055	0.086	-0.143*
Craft and Related	-0.140*	-0.197	-0.057	-0.087
Personal and Protective Service	-0.035	-0.067	-0.124	-0.024
Sales	0.121	0.077	0.084	-0.115
Plant and Machine Operatives	-0.106	0.135	-0.099	-0.022
Employing Sector (Reference: Private Firm)				
Civil Service	0.051	0.252	-0.001	0.035
Local Government	0.073	0.067	-0.095	-0.006
Other Public	0.099	0.069	0.015	0.027
Non-Profit	0.143	0.029	-0.126	0.070
Firm Size -Number of Co-workers (Reference: Over 500)				
0-49	-0.003	-0.210*	-0.022	0.021
50-499	0.025	-0.120	0.072	0.012
Standard Industrial Classification (Reference: Agriculture and Fishing)				
Mining and Quarrying	-0.065	0.518	-0.003	-0.254
Manufacturing	0.215	0.346	0.046	0.111
Electricity, Gas and Water	0.419*	0.932*	0.033	0.173
Construction	0.055	0.363	-0.049	-0.055

Wholesale and Retail Trade	0.195	0.421	0.061	0.042
Hotels and Restaurants	0.259	0.589	0.191	0.043
Transport, Storage and Communication	0.192	0.484	0.086	0.043
Financial Intermediation	0.325**	0.582	0.107	0.007
Real Estate and Business Activities	0.240	0.544	0.141	-0.018
Public Administration and Defence	0.241	0.440	0.097	-0.007
Education	0.181	0.392	0.019	-0.130
Health and Social Work	0.217	0.792*	0.082	0.038
Social and Personal Services	0.262	0.708	0.166	0.081
Private Households and Extra-Territorial Organizations	0.249	0.776	-0.030	-0.033
Region Dummies Included	*Yes*	*Yes*	*Yes*	*Yes*
Year Dummies Included	*Yes*	*Yes*	*Yes*	*Yes*
Cut Thresholds				
Cut 1	0.254		-2.420	-2.128
Cut 2	0.860		-0.181	0.207
Cut 3	1.274		1.446	1.984
Cut 4	1.606		2.722	4.003
Cut 5	1.913		4.150	
Cut 6	2.206		5.829	
Cut 7	2.492			
Cut 8	2.785			
Cut 9	3.093			
Cut 10	3.453			
Cut 11	3.911			
Cut 12	4.567			
Log Likelihood	-81797.125	-8696.485	-45684.203	-54300.87
chi^2 (p-value)	0.000	0.000	0.000	0.000
Pseudo R^2	0.009	0.057	0.014	0.016
Number of observations	50,275	50,751	32,098	47,801

Note: All ordered logistic and logistic regressions control for repeat observations through standard error clustering correction for intra-group correlations. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels respectively.

Table 2: Ordered and binary logistic regressions, where temporary work = Fixed Term Contract

Dependent Variable	Psychological distress	Psychological anxiety	Life dissatisfaction	Poor general health
Variable		**Coefficients**		
Futures	0.105	0.226	0.161	0.190**
Switchers-In	0.177	0.180	0.338**	0.059
Temps	0.033	0.320	0.097	0.022
Switchers-Out	-0.098	-0.637	0.024	-0.191
Pasts	-0.033	0.326*	-0.055	0.054
Smoking Behaviour				
Number of Cigarettes per day	0.008***	0.028***	0.016***	0.021***
Demographics				
Age	-0.008***	0.008*	0.010***	0.007***
Female	0.326***	0.727***	-0.025	0.119***
Marital Status (Reference: Never married)				
Married or cohabitating	-0.005	-0.152	-0.526***	0.009
Widowed/divorced/separated	0.334***	0.400**	0.331***	0.018
Household Structure				
No. of Dependent Children	0.031*	0.003	0.128***	-0.041**
Educational Attainment (Reference: No Qualifications)				
Degree	0.200**	0.042	0.268**	-0.245***
Further education	0.104*	0.033	0.268***	-0.146**
A-level	0.033	-0.209	0.282***	-0.151**
O-levels/GCSEs	-0.030	-0.103	0.198**	-0.174**
Other qualifications	-0.088	-0.180	-0.053	-0.115
Housing Tenure (Reference: Social housing)				
Outright owner	-0.109	0.054	-0.313***	-0.190***
Own with mortgage	-0.073	0.038	-0.193**	-0.226***
Private renter	0.037	0.258*	-0.024	-0.060
Job Characteristics				
Union Covered, Member	0.082*	0.159	0.135**	0.098**
Union Covered, Not Member	-0.041	-0.063	0.059	0.052
Annual Labour Income	-0.029	-0.097*	-0.038	-0.103***
Hours Worked per Week	0.006***	-0.0002	0.008***	0.001
Manager / supervisor	0.089***	-0.110	0.030	-0.051

Holding a second job	0.034	-0.165	0.052	-0.095**
Promotion opportunities available	-0.139***	-0.265***	-0.095***	-0.102***
Pay includes bonus / profit share	0.041	-0.009	-0.017	-0.030
Employer provided pension available	0.039	0.018	0.012	-0.036
Pay includes annual rises	-0.115***	-0.048	-0.178***	-0.024
Shift worker	-0.048	-0.340***	-0.018	-0.135**
Flexibility in job location (Reference: work at employers' premises)				
Work from home	0.175	0.222	-0.169	-0.107
Other work location	-0.020	-0.189	-0.097	-0.051
Work needs travelling	-0.020	-0.099	-0.145**	-0.002
Occupation One Digit Classification (Reference: Other)				
Managers and Administrators	0.034	-0.203	-0.141	-0.234***
Professional	0.067	-0.172	-0.088	-0.148*
Associate Professional and Technical	0.033	-0.295	-0.040	-0.139*
Clerical and Secretarial	0.043	-0.127	0.067	-0.157**
Craft and Related	-0.141*	-0.212	-0.067	-0.065
Personal and Protective Service	-0.061	-0.114	-0.168	-0.004
Sales	0.106	0.093	0.095	-0.069
Plant and Machine Operatives	-0.109	0.115	-0.118	-0.026
Employing Sector (Reference: Private Firm)				
Civil Service	-0.003	0.194	0.035	0.059
Local Government	0.059	0.024	-0.066	-0.036
Other Public	0.085	0.048	0.015	-0.005
Non-Profit	0.117	-0.084	-0.082	0.048
Firm Size – Number of Co-workers (Reference: Over 500)				
0-49	-0.019	-0.180	-0.012	0.034
50-499	0.001	-0.085	0.065	0.003
Standard Industrial Classification (Reference: Agriculture and Fishing)				
Mining and Quarrying	-0.114	0.945	0.192	-0.225
Manufacturing	0.229	0.600	0.140	0.175
Electricity, Gas and Water	0.437*	1.134*	0.108	0.208
Construction	0.088	0.541	0.041	0.003
Wholesale and Retail Trade	0.197	0.617	0.126	0.056
Hotels and Restaurants	0.279	0.773	0.297	0.089

Transport, Storage and Communication	0.202	0.855*	0.180	0.132
Financial Intermediation	0.341**	0.860*	0.215	0.099
Real Estate and Business Activities	0.256	0.780*	0.211	0.028
Public Administration and Defence	0.293*	0.805	0.188	0.093
Education	0.261	0.659	0.143	-0.003
Health and Social Work	0.262	1.125**	0.199	0.145
Social and Personal Services	0.285	1.043**	0.301	0.154
Private Households and Extra-Territorial Organizations	0.234	0.827	-0.079	-0.002
Region Dummies Included	*Yes*	*Yes*	*Yes*	*Yes*
Year Dummies Included	*Yes*	*Yes*	*Yes*	*Yes*
Cut Thresholds				
Cut 1	0.153		-2.405	-2.112
Cut 2	0.761		-0.150	0.218
Cut 3	1.177		1.490	2.001
Cut 4	1.509		2.766	4.061
Cut 5	1.816		4.180	
Cut 6	2.113		5.945	
Cut 7	2.406			
Cut 8	2.706			
Cut 9	3.021			
Cut 10	3.386			
Cut 11	3.855			
Cut 12	4.509			
Log Likelihood	-80949.348	-8597.350	-45249.369	-53903.311
chi^2 (p-value)	0.000	0.000	0.000	0.000
Pseudo R^2	0.009	0.058	0.015	0.016
Number of observations	49,985	50,452	31,944	47,521

Note: All ordered logistic and logistic regressions control for repeat observations through standard error clustering correction for intra-group correlations. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels respectively.

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