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The Disability Employment Paradox? Reconciling trends in disability, health and employment in the UK, 2014-2022

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Abstract

The last decade has seen a significant worsening of health in the UK, driven by an increase in mental health conditions, with a consequent increase in the number of disabled people. At the same time overall employment growth has been strong and the employment rate of disabled people has grown faster than that of non-disabled people. How can we reconcile this apparent paradox of declining health and growing employment? Using detailed observational data for 2014-2022 from a large survey of the UK population we employ counterfactual analysis to explore this puzzle. We present three key findings. First, the rise in the employment rate of disabled people and the narrowing of the disability employment gap (DEG) cannot be attributed to changes in the health of the disabled population. Second, the narrowing of the DEG is predominantly associated with a parallel reduction in the education attainment gap between disabled and non-disabled people. Finally, despite increased employment among disabled people, the growing size of the disabled population has reduced the growth of the overall employment rate. Our work has a number of implications for policy targeted at improving the employment outcomes of disabled people. While the DEG has narrowed, disability prevalence has increased, leading to lower employment rates than would otherwise have prevailed. Hence, there is still a crucial role for the health care sector in improving labour market outcomes and thus overall welfare levels in the UK. Moreover, the interdependence of health and employment status requires joined up health care and labour market policy making.

Keywords: disability, employment, education, mental health, physical health

JEL classification: I14, J14, J21, J70

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1. Introduction

The intersection of health and employment status represents a critical concern for public policy, fundamentally shaping economic stability, social welfare, and individual wellbeing. Work status is a core determinant of financial security (Bourquin et al. 2020; Black, 2008) and is influenced by both physical and mental health (Bryan et al., 2022; Jones et al., 2020). The UK has higher levels of economic inactivity than most of its close OECD comparators; more than one in five working-age people are out of work and not looking for work, largely for reasons of ill-health and disability. This is higher than in Australia, Canada, Denmark, Germany, the Netherlands and Sweden (OECD, 2025). At a macro level, a rising fiscal burden associated with providing sickness and disability benefits, on top of the growing demands placed on the health care system, calls for a deeper understanding of the dramatic changes experienced by the UK's working-age population over the last decade. These changes may be summed up in a striking paradox. Mounting evidence points to a significant deterioration in working-age health, notably driven by declines in mental health (Latimer et al., 2025), and a corresponding increase in the prevalence of disability. Concurrently, employment rates recovered from the 2008–2010 recession to reach record highs before the COVID-19 pandemic (Office for National Statistics, 2025a). Post-pandemic, while employment has stabilised, health-related economic inactivity has surged, fuelling a lively and complex policy debate (BBC, 2023; Kirk-Wade and Harker, 2023) that is further complicated by concerns over data reliability.

A particularly notable feature of the pre-pandemic labour market was the continuous fall in the Disability Employment Gap (DEG) - the difference in employment rates between disabled and non-disabled people. This trend suggested some success in the policies designed to integrate disabled

individuals into the workforce.[1] Our core research question seeks to resolve the central tension created by these divergent realities: how can we reconcile the documented worsening health trends with the concurrent and sustained improvement in the employment outcomes of disabled people?

We address this question using nine years of detailed observational data (2014 to 2022) from the UK's largest survey of employment status and health. Using a categorisation of physical and mental health derived from 17 distinct health conditions and reported severity, we present counterfactual scenarios to show how employment trends may have been different had the health profile of the working age population remained as it was ten years ago. We also address a concern expressed in the literature (and public debate) that changes in the way that health is reported may have led to mechanical changes in the disability employment rate.

Our analysis yields three key findings. First, the rise in the employment rate of disabled people and the narrowing of the DEG cannot be attributed to changes in the health of the disabled population. We observe a concurrent rise in mental health conditions - a trend linked to lower employment rates - despite an overall increase in less severe impairment. Second, we demonstrate that the narrowing of the DEG is predominantly associated with a parallel reduction in the education attainment gap between disabled and non-disabled people, while overall employment increases have been driven by broader factors, including aggregate labour demand and the possible influence of changes to the benefit system and employment support. Finally, we show that the UK's overall employment rate would be higher today had the nation not experienced increased prevalence of disability. Thus, while disabled individuals are finding more employment opportunities, the growing size of the disabled population acts as a significant headwind to aggregate employment rates.

The paper proceeds as follows. After briefly reviewing the literature on trends in employment and health, we present our own data and methodology and document the changes in mental and physical health disability since 2014. We then project counterfactual scenarios, holding constant health, for the separate employment rates of disabled and non-disabled people, before bringing the two together to estimate the counterfactual DEG. Finally, we estimate the impact of changing health on overall

[1] In 2016-17, the UK government pursued a short-lived target to halve the DEG, and the Scottish Government stills aims to do so by 2038.

employment. The paper concludes by discussing the implications of these paradoxical trends for future health, economic, and welfare policies.

2. Background

A long-standing policy goal in the UK has been to increase employment rates among working age people, and in particular among groups with lower labour market attachment such as disabled people. There appeared to be good progress in the period before the COVID pandemic: the overall employment rate rose from 70.4% following the Great Recession (November 2009-January 2010) to a record high (since at least 1971) of 76.5% just before COVID (December 2019-February 2020) (Office for National Statistics, 2025a). The corresponding rate among disabled people increased even more rapidly, from 43.6% in the second quarter of 2013 to 53.4% in the first quarter of 2020 (DWP, 2024).[2] The picture after that is less clear because of well documented problems with the key statistical source, the Labour Force Survey (LFS) (Corlett and Slaughter, 2024): published LFS data suggest that overall employment fell back by at least a percentage point and remained there, while an adjusted series based on alternative sources suggests employment recovered to pre-pandemic levels (Corlett, 2024). Meanwhile the employment rate of disabled people has plateaued since the pandemic according to the LFS (DWP, 2025). The combined effect of these trends is that the DEG (as measured by the LFS) fell from 33.1 percentages points (pp) (April-June 2013) to 28.7pp at the start of COVID (January-March 2020) after which it stabilised (DWP, 2025). So, despite the apparent stagnation since COVID, the overall picture of disabled people's employment rates over the last decade is one of modest progress. This appears to be a continuation of the steadily declining DEG observed over the preceding decade (Jones and Wass, 2013).[3]

In contrast to the relatively rosy longer-term picture of employment, there is mounting evidence of worsening population health (BCG Centre for Growth and NHS Confederation, 2024; Health Foundation, 2023) and consequently higher levels of disability (DWP, 2025). Life expectancy has stalled in the last decade (Raleigh, 2024) and mortality rates have increased since COVID (Latimer et al., 2025). While there is some disagreement in trends in general health across the main GB and UK surveys, they all show that mental health has worsened (Latimer et al., 2025). The trends appear

[2] Comparable data are not available before April 2013 because the wording of the disability questions in the survey data changed at that point.

[3] It should be noted that surveys other than the LFS may not exhibit the same reductions (Baumberg et al., 2015).

particularly acute among young adults (Gagné et al., 2022; Zhang et al., 2023); consistent with this, there have been sharp increases in prescriptions for anti-depressants and drugs for psychosis and related disorders among this age group (McCurdy and Murphy, 2024). Data from other countries supports these trends (Blanchflower et al., 2024; AIHW, 2025), suggesting they are not unique to the UK.

In the context of these rising trends, there has also been some debate about whether the increases in reported mental illness wholly or partly reflect an increased medicalisation of conditions that would not previously have been considered problems (Geiger and Prinz, 2025; Wass and Jones, 2020; Geiger, 2025). For example, increases in reported long-term mental illness from the mid-1990s to the early 2010s were not accompanied by increases in experienced symptoms (Geiger, 2020). In contrast, however, the studies noted above do indicate that experienced symptoms worsened more recently, and especially since 2015 (Gagné et al., 2022; Zhang et al., 2023). Moreover, suicides have risen (Office for National Statistics, 2024) and 'deaths of despair' also appear to have increased (Latimer et al., 2025). This potential reporting issue affects interpretation of our results and so we present additional evidence on trends in mental health in section 4.1.

3. Data and Method

Our main data source is the UK Annual Population Survey (APS). This is a large cross-sectional dataset, derived from the LFS, containing a representative sample of households and individuals from across the UK each year. We use nine years of data covering the period 2014 to 2022 and retain all working age people (16-64)[4] for the analysis. The total sample size across all nine years is 1,345,150. To utilise a comprehensive set of variables, including detailed information about health conditions, we use the Secure Access version of the data (Office for National Statistics, 2023).[5]

Individuals in the APS are asked to report whether they have any physical or mental health conditions or illnesses lasting or expecting to last 12 months or more. If they do have a long-term health condition, they are asked to state whether this reduces their ability to carry out day-to-day activities, and can give one of three responses: "Yes, a lot"; "Yes, a little"; or "Not at all". Since 2014, this information has been used to identify individuals who are disabled according to the Equality Act 2010

[4] This age range is chosen as it matches that used by the UK Government to measure the DEG.
[5] Secure access is via the UK Data Service Secure Lab https://ukdataservice.ac.uk/help/secure-lab/what-is-securelab/

definition.[6] People responding "Yes, a lot" or "Yes, a little" are classified as disabled while those responding "Not at all" are classified as non-disabled, alongside all individuals without a long-term health condition or illness.

We further subdivide the disabled population into those that have a more severe impairment (answering "Yes, a lot" to the limitation question) and those that have a less severe impairment (answering "Yes, a little"). We also divide the non-disabled population according to whether or not they have a long-term health condition.

All respondents reporting a long-term health condition are asked to provide more detail on the nature of their problem by selecting one or more options from a list of 17 distinct health conditions (see Appendix A). We use this information to classify the population into those that have a mental health condition only, those that have a physical health condition only, those that have both a mental and a physical health condition and those where the nature of the health condition is unknown ("other").[7]

This allows us to divide the working age population into 13 mutually exclusive categories, as shown by Table 1 which includes the proportions falling into each category over the whole period 2014-2022. As well as health, we include a number of other personal and household characteristics in our analysis, which are known to be correlated with the probability of employment. These include age, sex, highest educational qualification, marital status, presence of children by age, ethnicity and home ownership status.

All our analysis is conducted using person-level weights to account, as much as possible, for the response bias which has affected the APS over recent years.[8]

For each year, we estimate a standard linear regression model:

[6] https://www.legislation.gov.uk/ukpga/2010/15/section/6

[7] This last category includes people who have a long-term health condition but either did not provide an answer to the question on type of health condition or selected only "Other health problems or disabilities".

[8] Given the known problems with the data (Corlett and Slaughter, 2024), we sought advice from the Office for National Statistics about how to minimise response bias. While there is no ideal solution, we follow their recommendation to apply the person-level weights supplied with the APS (personal communication, 8 July 2024).

$$y_{it} = \beta_t^0 + \mathbf{h}_{it}\boldsymbol{\beta}_t^h + \mathbf{x}_{it}\boldsymbol{\beta}_t^x + \varepsilon_{it} \quad (1)$$

Here $y_{it} = 1$ if individual i was employed in year t and 0 otherwise, $\mathbf{h}_{it}$ is a 1×13 vector of health categories (Table 1), and $\mathbf{x}_{it}$ includes all other characteristics. Note that we are using repeated cross-sectional data so any given individual will appear in just one year. Estimating equation (1) for a given year t yields the following fitted model:

$$\bar{y}_t = \hat{\beta}_t^0 + \bar{\mathbf{h}}_t\widehat{\boldsymbol{\beta}}_t^h + \bar{\mathbf{x}}_t\widehat{\boldsymbol{\beta}}_t^x \quad (2)$$

Here $\bar{y}_t$ is the actual employment rate in year t and $\bar{\mathbf{h}}_t$ and $\bar{\mathbf{x}}_t$ contain the means of each health category and other explanatory variable respectively in year t. The estimated coefficient on the constant is $\hat{\beta}_t^0$ and the other coefficients are contained in $\widehat{\boldsymbol{\beta}}_t^h$ and $\widehat{\boldsymbol{\beta}}_t^x$. It should be noted that $\hat{\beta}_t^0$ will include the average of the unobserved factors affecting employment in any given year *t*. These may include the overall level of labour demand as well as the impact of employment support schemes for disabled people, such as Access to Work and the introduction of Fit Notes (Gabbay et al., 2015). On the supply side, $\hat{\beta}_t^0$ will also capture work incentives shaped by the benefit system (discussed in the Conclusion).

Alongside the actual employment rate, we also calculate three counterfactual employment rates that provide an estimate of what the employment rate would have been if certain population characteristics had remained unchanged since 2014. To find our first counterfactual employment rate in year t, we use the estimated coefficients from equation (2) but apply these to the means from 2014 such that:

$$y_t^* = \hat{\beta}_t^0 + \bar{\mathbf{h}}_{2014}\widehat{\boldsymbol{\beta}}_t^h + \bar{\mathbf{x}}_{2014}\widehat{\boldsymbol{\beta}}_t^x \quad (3)$$

Other alternative counterfactuals fix only health and other variables respectively at their 2014 means.

$$y_t^{h^*} = \hat{\beta}_t^0 + \bar{\mathbf{h}}_{2014}\widehat{\boldsymbol{\beta}}_t^h + \bar{\mathbf{x}}_t\widehat{\boldsymbol{\beta}}_t^x \quad (4)$$

$$y_t^{x^*} = \hat{\beta}_t^0 + \bar{\mathbf{h}}_t\widehat{\boldsymbol{\beta}}_t^h + \bar{\mathbf{x}}_{2014}\widehat{\boldsymbol{\beta}}_t^x \quad (5)$$

To estimate counterfactuals for the DEG, we simply compute y_t^*, $y_t^{h^*}$ and $y_t^{x^*}$ for the non-disabled and disabled populations respectively and plot the differences.

4. Results

4.1 Trends in disability and employment

We first illustrate the disability employment paradox by documenting the salient trends over the last decade. As shown in Figure 1, the prevalence of disability has increased steadily, from 17.5% of the working age population in 2014 to 22.7% in 2022. This was mainly driven by a 3.2pp increase in the percentage of people with a less severe impairment, but the prevalence of more severe impairment also increased over this period, by 2.0pp.

Consistent with evidence reported above about the rise in mental health problems, it is clear from Figure 2 that there has been a particular increase in the number of working age people reporting a disabling mental health condition. The percentage of people with a less severe impairment involving a mental health condition only has more than doubled from 1.3% in 2014 to 3.0% in 2022. There has also been a substantial increase in the prevalence of more severe impairment due to mental health conditions only, from 1.0% to 1.8%. By contrast, the prevalence of disability due to physical health conditions has remained largely unchanged, although it is still the case that many more people are disabled due to physical health conditions than mental health conditions. The last decade has also seen a rise in the number of disabled people reporting both physical and mental health conditions indicating that comorbidity is becoming a growing problem in the working age population.

Figure 3 shows the category of disability which has increased in prevalence the most: people with a less severe impairment and a mental health condition only. Again, consistent with evidence from other surveys, younger people (particularly females) are most likely to be in this category and have experienced the most growth in prevalence. The number of females aged 16-24 in this category has tripled over the last decade from 1.9% in 2014 to 5.9% in 2022, with a similar increase for females aged 25-34. The increase in prevalence has also been higher for younger males (relative to older males), although not quite as high as for young females.

Turning to employment rates, the APS data plotted in Figure 4 show that the overall employment rate in the UK has been growing steadily, albeit plateauing somewhat since 2019.[9] The employment rate of disabled people is much lower than that of non-disabled people, manifesting a large DEG. However, between 2014 and 2019 disabled people saw their employment rate grow at a faster rate than that of non-disabled people, thus reducing the DEG over time from 32pp in 2014 to 28pp in 2019. This trend of an improving DEG slowed markedly during the pandemic, but it had reduced slightly to 27pp by 2022.

Figure 5 shows that employment has been rising for all types of condition and severity within the disabled population. However, those with a mental health condition have experienced the greatest increase in employment. Among those with less severe impairments and a mental health condition only, employment rose from 51% in 2014 to 68% in 2022; the increase was 49% to 66% for those with both a mental and physical health condition. From a lower base, there was also strong employment growth among people with more severe impairments, from 15% to 26% for those with a mental health condition only, and from 13% to 21% for those with both a mental and physical health condition.

4.1 Additional evidence of trends in mental health

Rising employment rates among disabled people, especially those with mental health conditions, have raised questions about the reporting of health conditions in surveys (Geiger and Prinz, 2025; Wass and Jones, 2020; Geiger, 2025). It is argued, for example, that greater awareness and understanding of mental health have led to increased reporting of certain, often mild, conditions. If the employment rate associated with these 'new' conditions is higher than that for previously reported conditions (as seems likely if they are mild), then observed employment among disabled people will rise even though there has been no underlying change to employment propensity (holding constant the interpretation of disability). Such a change in reporting behaviour would lead to biased estimates of both the trend in the DEG (Geiger and Prinz, 2025; Wass and Jones, 2020) and the coefficients in our models.[10] It is therefore important to assess the likely extent of changes in reporting behaviour.

[9] Compared with the official statistics based on the LFS, the APS data show a less pronounced fall in the employment rate at the start of the pandemic and a recovery by 2022, rather than continued stagnation.
[10] See Appendix C for a fuller explanation.

The graphs presented above show evidence of increased disability linked to less severe mental health conditions, and no change in physical (only) disability. This would be consistent with an increased tendency to report mild mental health problems. However there has also been an increase, albeit smaller, in more severe mental health disability, which does not fit this simple story so easily. Meanwhile, employment increased across all types of disability and in fact the greatest proportionate increase was among people with a more severe mental health (only) disability.

To try to resolve these ambiguities, we turned to another data source, Understanding Society, which has tracked a national sample of households since 2009 (University of Essex, 2024). While the data do not enable us to construct exactly analogous measures of disability to the APS variables, we can look at trends in mental health captured by two alternative validated measures, the 12-item General Health Questionnaire (GHQ) (Goldberg et al, 1997) and the Short Form 12 survey (SF-12) (Ware et al, 1996). GHQ is a screening instrument for mild psychological distress, while the SF-12 is a generic health measure comprising both mental health and physical health components that can both be expressed as components scores: the Mental Health Component (MCS) and the Physical Health Component (PCS) respectively. These instruments, and especially GHQ, are useful because they focus mainly on functionings or symptoms, rather than labels such as 'mental health', 'anxiety' and 'depression', as used in the APS. We followed a sample of 65,292 16-64 year olds, by sex and age group, from 2010 to 2022 (weighted to be representative of the UK population in each year). Consistent with the APS results, both GHQ and the mental health component of SF-12 (MCS) show worsening mental health from around 2015 (Appendix Figures B1 and B2), while the PCS shows a very slight decline in physical health (Appendix Figure B2). While all age groups exhibit declining mental health, the trends are most striking among females aged 16-24 years according to both GHQ and MCS (Appendix Figures B3 and B4), again consistent with the trends in APS.

To go further, we can directly examine which items are driving these trends. We focus here on the GHQ because it is formed from the simple sum of the individual item scores.[11] While there is consistent deterioration across almost all items (Appendix Figures B5-B16), including feeling unhappy or depressed, the change is particularly striking for specific symptoms related to: an ability to concentrate, a feeling of playing a useful role, an ability to overcome difficulties, loss of confidence

[11] In contrast, the MCS and PCS are more complicated weighted sums, each including both physical and mental elements, and so are more difficult to interpret (Ware et al, 2002).

and a feeling of worthlessness. Similar to the overall GHQ, the trends in specific symptoms tend to be steeper for 16-24 year old females.

This evidence suggests that reports of increased mental health problems do reflect a worsening of symptoms and experiences, and not simply a more widespread identification with labels such as 'mental illness'. What is important for our counterfactual estimates is the effect on employment of these 'new' conditions and the extent of any initial underreporting. In the most relevant cases, we can show that the counterfactual employment rates are upward biased (see Appendix C). Therefore, a reasonable conclusion is that our counterfactual employment rates represent an upper bound on the effects of holding characteristics constant at 2014 values.

4.3 Unpacking the DEG trend

Now we unpack the DEG trend by estimating counterfactual scenarios whereby certain characteristics are fixed at their 2014 levels. We start by looking at the employment rate of disabled people. In Figure 6, the actual employment rate of disabled people $\bar{y}_t$ is plotted alongside various counterfactuals.

The employment rate of disabled people has been steadily rising over the last decade from 46% in 2014 to 55% in 2022. Comparing the actual rate with the counterfactual rate $y_t^{h^*}$ that holds health at its 2014 level, Figure 6 shows that the increasing employment rate cannot be attributed to changes in the health profile of the disabled population (for example between more severe and less severe impairments and between physical health and mental health conditions). If health had not changed, our model predicts that the employment of disabled people would have grown at about the same rate. This may seem puzzling given the substantial changes in health over this period, but we can decompose the health effects further using more detailed counterfactuals. Thus, Figure 6 also shows that the employment rate of disabled people would have been about 1pp lower in 2022 had the proportion of disabled people with more severe impairments remained unchanged at 2014 levels (while allowing the distribution of health conditions between physical and mental health to change in line with actual proportions).[12] However, if health conditions were fixed and severity was allowed to

[12] Let $\bar{h}_t^{cl}$ be the actual proportion of people in year t with health condition c and a less severe impairment and let $\bar{h}_t^{cm}$ be the actual proportion of people in year t with health condition c and a more severe impairment. Both scalars are elements of the health vector $\bar{\mathbf{h}}_t$. When keeping severity fixed, the counterfactual proportion of people in year t with health condition c and a less severe impairment is assumed to be $\frac{\bar{h}_{2014}^{cl}}{\bar{h}_{2014}^{cl}+\bar{h}_{2014}^{cm}}(\bar{h}_t^{cl}+\bar{h}_t^{cm})$ and the counterfactual

vary, this would have resulted in the employment rate of disabled people increasing by a further 1pp.[13] These two effects (declining severity and increased prevalence of mental health conditions) therefore cancel each other out resulting in no overall health effect on the employment rate of disabled people.

An alternative candidate variable to explaining employment changes is education: over the last ten years, the working age population in the UK has become more educated as younger cohorts leave full time education with higher qualifications on average than their older counterparts; in addition, evidence indicates that educational qualifications are particularly important for disabled people's employment and can explain part of the DEG (Bryan et al., 2025). To account for this, our models include dummy variables to capture the highest qualification level achieved by a person: degree or equivalent; higher education; GCE, A-level or equivalent; GCSE grades A*-C or equivalent; other qualifications; or no qualification. Figure 7 confirms that disabled people are less qualified than non-disabled people on average, but that there have been significant improvements in educational attainment for both groups over the period. The proportion of disabled and non-disabled people with a degree increased by some 10pp between 2014 and 2022, though with no change in the 15pp gap between them. Most strikingly, the proportions holding no qualifications dropped over the same period, with the gap between disabled and non-disabled falling from 13pp in 2014 to 8pp in 2022.

Figure 8 shows that if average education levels of disabled people remained at 2014 levels, the employment rate would only have reached 52% in 2022. In other words, about one third (3pp) of the 9pp growth in the employment rate of disabled people between 2014 and 2022 can be attributed to education. By computing counterfactuals that hold the other variables constant in turn (results not reported), we conclude that the rest is not explained by changes in the other characteristics of the disabled population. Figure 8 confirms that holding all variables at their 2014 levels (y_t^*) does not explain any more of the trend than does education alone.

proportion of people in year t with health condition c and a more severe impairment is assumed to be $\frac{\bar{h}_{2014}^{cm}}{\bar{h}_{2014}^{cl}+\bar{h}_{2014}^{cm}}(\bar{h}_t^{cl}+\bar{h}_t^{cm})$.

[13] When keeping health condition fixed, the counterfactual proportion of people in year t with health condition c and a less severe impairment is assumed to be $\frac{\bar{h}_{2014}^{cl}}{\sum_c \bar{h}_{2014}^{cl}}\sum_c \bar{h}_t^{cl}$ and the counterfactual proportion of people in year t with health condition c and a more severe impairment is assumed to be $\frac{\bar{h}_{2014}^{cm}}{\sum_c \bar{h}_{2014}^{cm}}\sum_c \bar{h}_t^{cm}$.

To understand the overall effect on the DEG, we must also consider the effects of health, education and other characteristics on the employment rate of non-disabled people. Figure 9 shows that again changes in health have had limited effect. In this case, however, this is due to the vast majority of non-disabled people being classified as having no health problems in each year (and also, by the definition of disability, any health problems reported do not affect daily activities). In the counterfactual where education is fixed at 2014 levels, the employment rate of non-disabled people would have been 1pp lower in 2022 (again, other factors have little additional explanatory power).

By putting all these counterfactuals together, we can estimate what the DEG would have looked like under different scenarios (illustrated in Figure 10). While rising education levels have helped to improve the employment rates of both disabled and non-disabled people, it is clear that disabled people have benefited disproportionately. The DEG would have been 2pp higher had the education levels of both disabled and non-disabled people remained fixed at 2014 levels. However, the effects of keeping health fixed are negligible.

When considering the effects of education, it should be appreciated that the trends in the data represent the entry into the labour market of new cohorts with higher qualification levels than the departing older cohorts. The changes do not reflect the acquisition of additional qualifications at the individual level. The increase in education in the new cohorts is disproportionately associated with higher employment among disabled people relative to non-disabled people and so the DEG narrows. While we cannot definitively say that the effect of education is causal, we can eliminate macroeconomic conditions or the impact of benefit changes (which are captured in the regression constant terms) as confounding factors (correlated with both rising employment and rising education). Another possible confounding mechanism is that less discrimination may lead to more education and also more employment. However, a meta-analysis by Lippens et al. (2023) that looks at evidence from hiring experiments from 2005 and 2020, suggests that hiring discrimination against disabled people has remained relatively stable over this 15-year period. Further, a systematic review by Derbyshire et al. (2024) found that anti-discrimination legislation is not effective at improving the employment prospects of people with disabilities.

4.4 Unpacking the overall employment trend

We have seen that the employment rates of both disabled and non-disabled people have increased over the last decade while the DEG continues to fall due to disabled people having higher employment growth. However, the DEG remains very wide due to disabled people still having much lower rates of employment than non-disabled people. The fact that the prevalence of disability has risen since 2014 therefore puts downward pressure on the overall employment rate.

Figure 11 shows how the actual growth in the overall employment rate compares to the different counterfactuals described by equations (3), (4) and (5) above. This shows that changing levels of health (specifically the increased prevalence of disability) have affected the UK employment rate. Had health remained constant at 2014 levels, we estimate that the employment rate would have risen to 77% in 2022, over 1pp higher than its actual level in that year. This difference is similar in magnitude to how much lower the employment rate would have been had there been no improvement in education levels.

Conclusion

The last decade has seen a significant worsening of health in the UK, driven by an increase in mental health conditions, with a consequent increase in the number of disabled people. At the same time (except for the period since COVID) overall employment growth has been strong and the employment rate of disabled people has grown faster than that of non-disabled people, leading to a reduction in the DEG. How can we reconcile this apparent paradox of declining health and growing employment?

We have shown that the changing composition of health among disabled people does not explain their increased employment rate or, by extension, the reduced DEG. While more disabled people are now reporting mental health conditions relative to physical health conditions, this change has been accompanied by an increase in less severe impairments. In fact, the narrowing of the DEG can more readily be attributed to improved education levels that have disproportionately benefited disabled people and could have reduced the DEG by 2pp between 2014 and 2022.

The lack of health effects on the employment of disabled people and the DEG does not imply that declining health does not have adverse consequences for employment overall. Because there are now more disabled people, and the DEG remains large, employment is lower than it would otherwise have

been without the increase in disability. We estimate that if health had not declined from its 2014 level, the employment rate could have been over 1pp higher in 2022. This highlights the real economic costs of declining health, particularly mental health among young people, and the need for policies to reverse this trend.

Our results stand against a backdrop of reforms to the system of disability and incapacity benefits. These were generally intended to incentivise employment and reduce the benefits bill. Existing evidence suggests limited success; for example the number of Personal Independence Payments recipients is no lower than under the previous system (Hoynes et al., 2024) and sanctioning non-compliant benefit claimants may have no effect (DWP, 2023). The reforms are not observed in our data, but to the extent that they did change incentives, they may have contributed somewhat to closing the DEG, in addition to the reduction of a third that we attribute to education.

There are some caveats to our results. First, they are based on cross-sectional regressions so we cannot confidently assign causality. In particular, we cannot draw the inference that continued improvements in education would lead to similar increases in employment as observed in the past. Past improvements in education could have coincided with broader changes in other policies or attitudes (unobserved in our data) that favoured the employment of disabled people. The stalling of employment and rise in health-related inactivity among young people since the COVID pandemic emphasises the need to couple better education with other health and labour market interventions, such as improving access to mental health care for young people and providing appropriate mental health training for managers in the key sectors employing young people (McCurdy and Murphy, 2024).

Second, our counterfactuals assume there were no significant changes to the reporting of health conditions. We have presented evidence from multiple sources of real declines in health; nonetheless our counterfactual employment rates, holding health constant, may still be overestimates.[14] This would imply that reporting changes may account for some of the measured increase in employment among disabled people and that health played a smaller role in restricting employment than we estimate. Eliminating such biases in future research will require much more detailed objective data on functionings and experienced health states (Geiger and Prinz, 2025).

[14] See the Appendix C for a fuller explanation.

There are also concerns about the quality of LFS/APS data in the post-pandemic period. These affect not just the headline employment rate, but also employment among specific groups, notably disabled people.[15]

Regardless of these caveats, our results point to some important features that must be acknowledged to form a firm foundation for policy targeted at improving the employment outcomes of disabled people. Heterogeneity is important; effective policy needs to recognise variation in age, gender, education, and the type and severity of health conditions, as well as the complex intersectionality between these different characteristics. Further, while the DEG has narrowed we show that the health of the working age population has deteriorated, and disability prevalence has increased - employment rates would have been higher had this not happened. Hence, there is still a crucial role for the health care sector in improving labour market outcomes and thus overall welfare levels in the UK. Moreover, the interdependence of health and employment status requires joined up health care and labour market policy making that also recognises the role of employers in removing barriers to work. It is encouraging to see these issues discussed in the recent Keep Britain Working Review (Mayfield, 2025), which makes a number of recommendations designed to reverse the trend in inactivity.

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[15] There has been ongoing improvement to LFS sampling and interviewing, but ultimately we still await its replacement with the new Transformed LFS (Office for National Statistics, 2025b).

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Tables and Figures

Table 1 – Health and disability status of the working age population, 2014-22 (%)

		No health condition	Mental health condition only	Physical health condition only	Both mental and physical health condition	Other health condition
Non-disabled		68.3	1.2	8.9	0.8	1.3
Disabled	Less severe impairment	-	2.0	6.4	2.0	0.8
	More severe impairment	-	1.3	3.3	3.2	0.4
N = 1,345,150						

Figure 1 – Disability prevalence by severity of impairment (% of working age population)

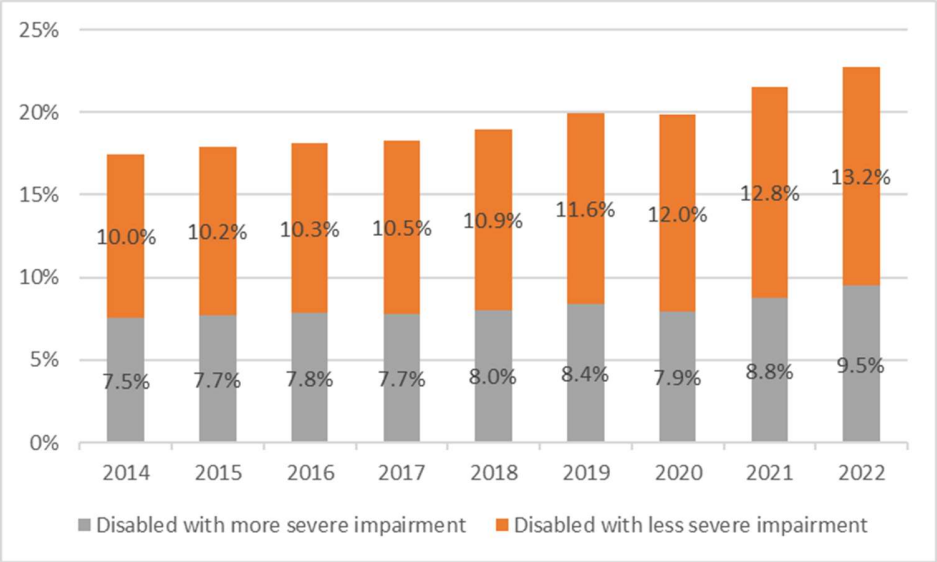


Figure 2 – Disability prevalence by severity of impairment and health condition (% of working age population)

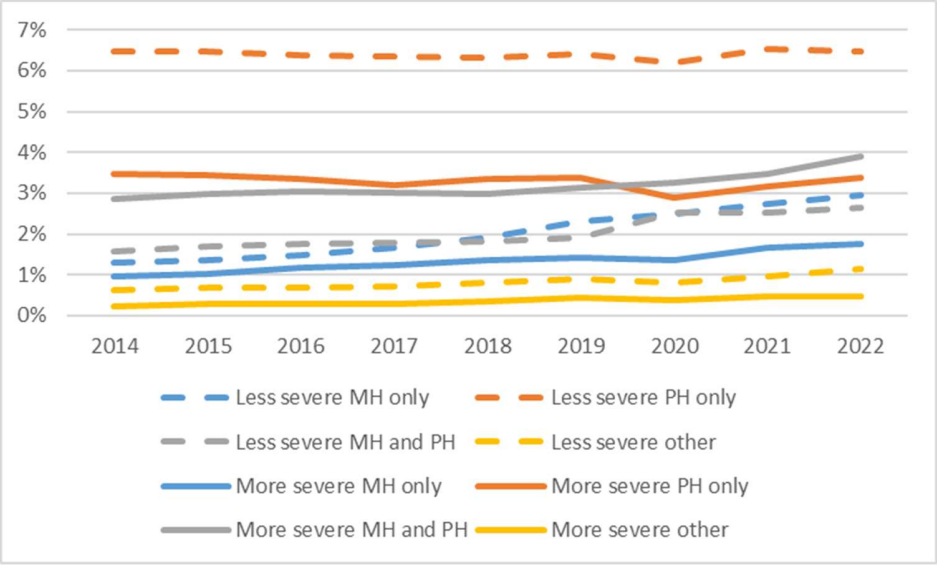


Figure 3 – Prevalence of less severe mental health disability by age and sex

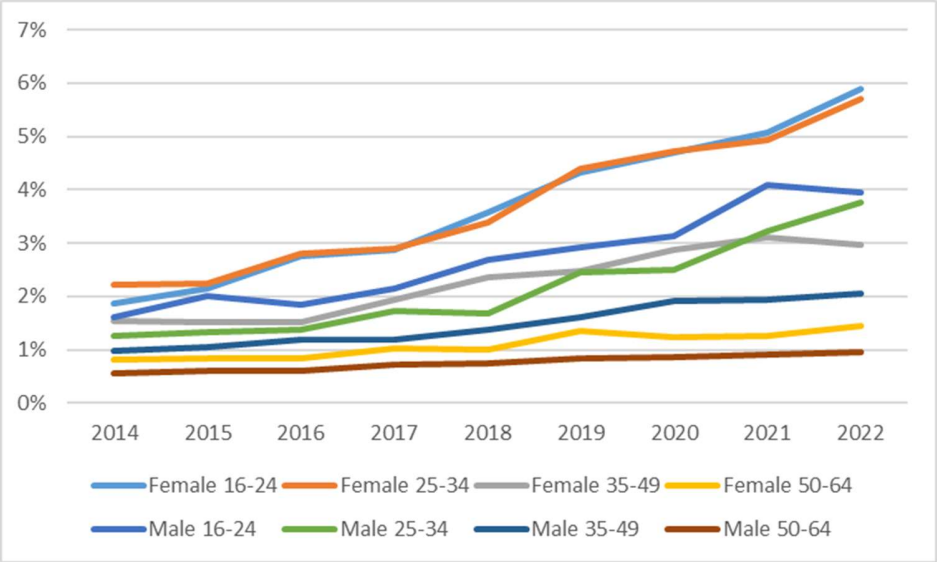


Figure 4 – Employment rates by disability

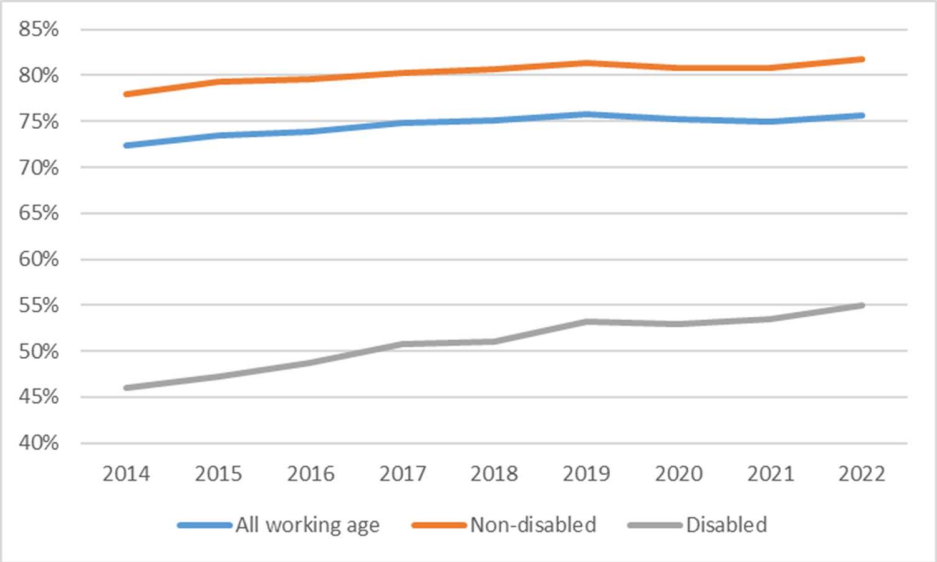


Figure 5 – Employment rates by severity of impairment and health condition

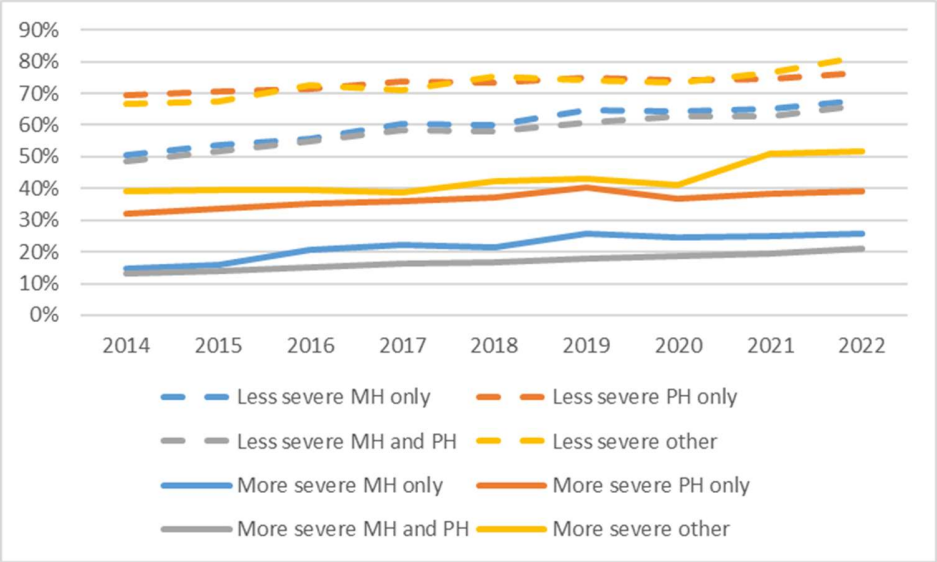


Figure 6 – Employment rate of disabled people: Counterfactual trends by health status

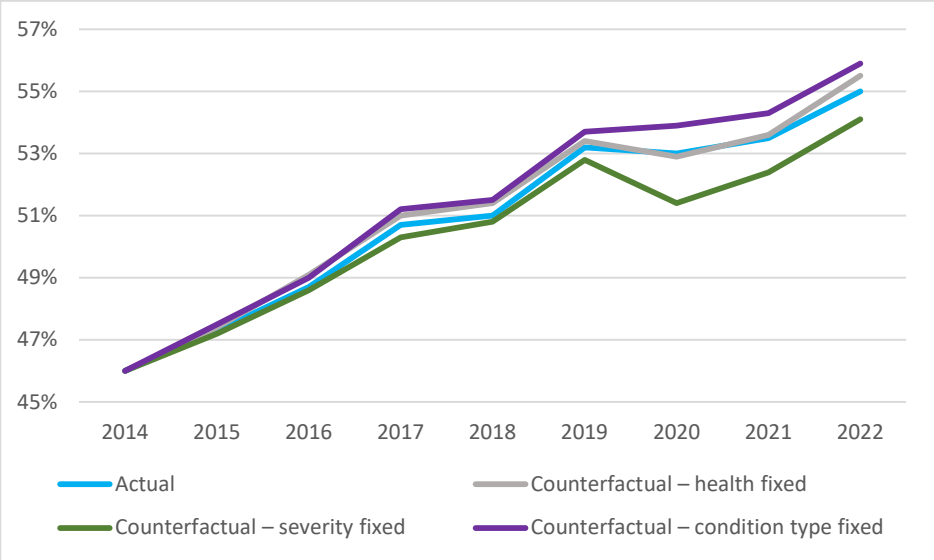


Figure 7 – Education levels by disability (percentage of working age population)

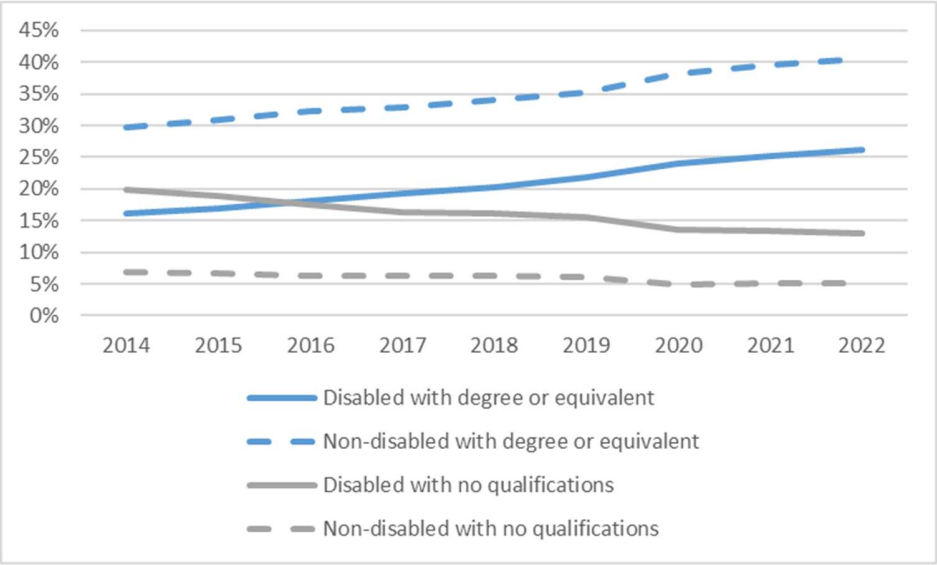


Figure 8 – Employment rate of disabled people: Counterfactual trends

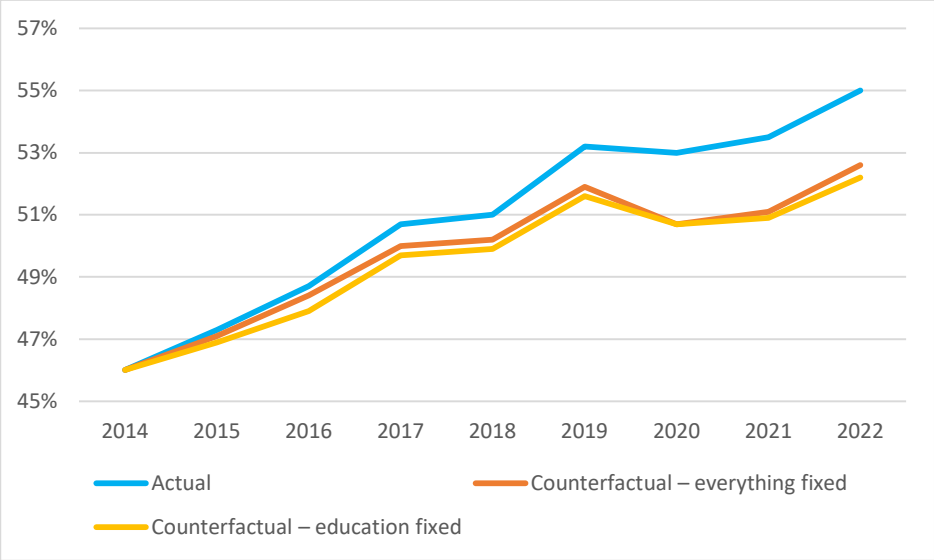


Figure 9 – Employment rate of non-disabled people: Counterfactual trends

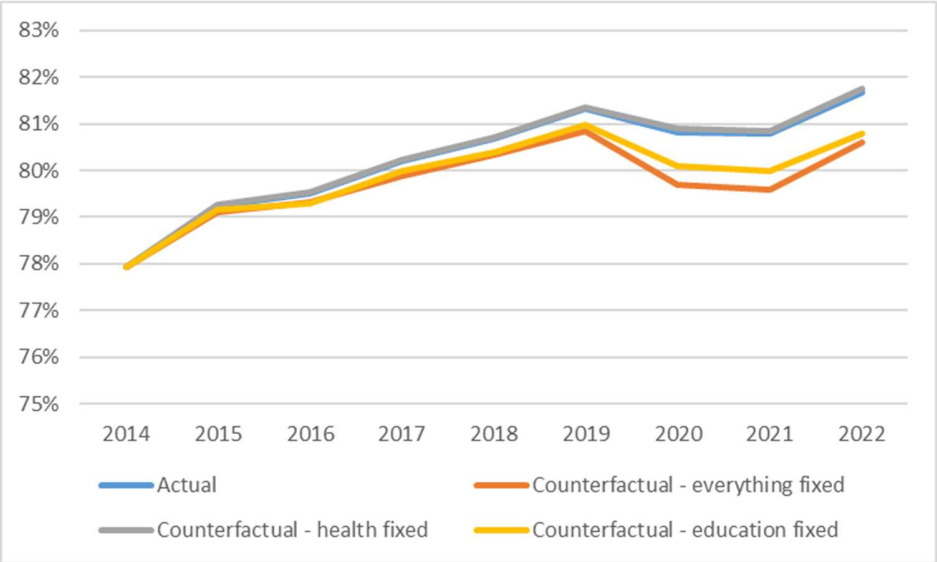


Figure 10 – DEG: Counterfactual trends

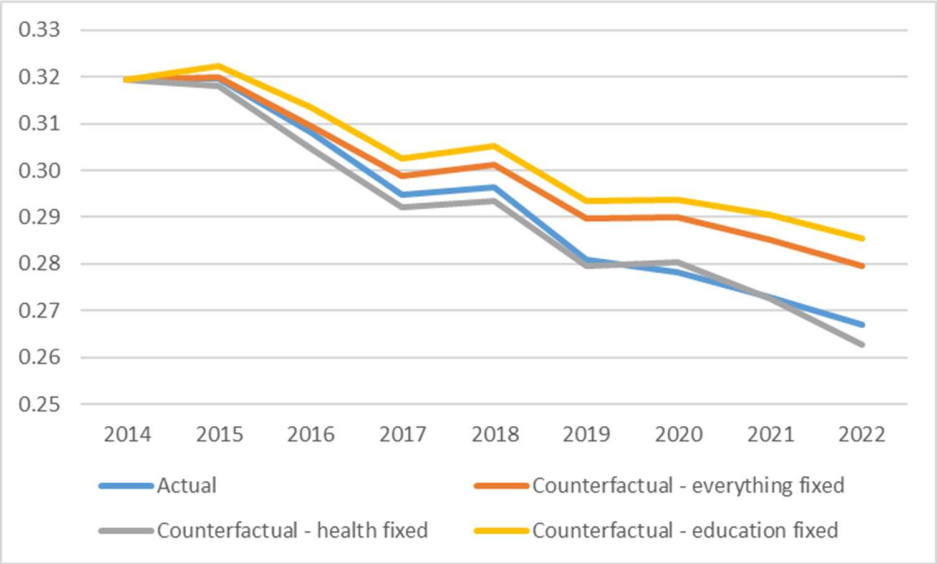
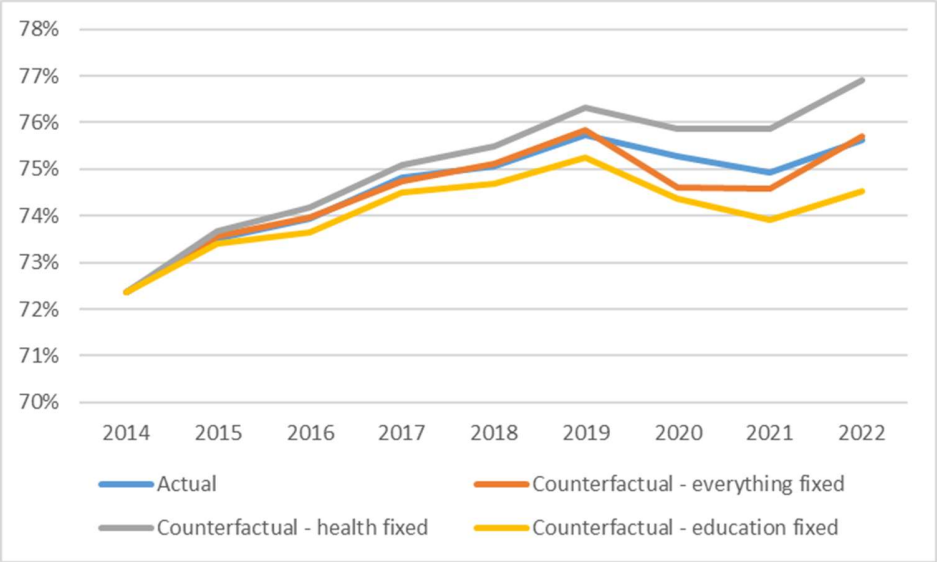


Figure 11 – Overall employment rate: Counterfactual trends



Appendix A: Table A1 - Health conditions in the Annual Population Survey (APS)

Description of condition	Mental/physical?
Problems or disabilities (including arthritis or rheumatism) connected with arms or hands	Physical
Problems or disabilities (including arthritis or rheumatism) connected with legs or feet	Physical
Problems or disabilities (including arthritis or rheumatism) connected with back or neck	Physical
Difficulty in seeing (while wearing spectacles and contact lenses)	Physical
Difficulty in hearing	Physical
A speech impediment	Physical
Severe disfigurement, skin conditions, allergies	Physical
Chest or breathing problems, asthma, bronchitis	Physical
Heart, blood pressure or blood circulation problems	Physical
Stomach, liver kidney or digestive problems	Physical
Diabetes	Physical
Depression, bad nerves or anxiety	Mental
Epilepsy	Physical
Severe or specific learning difficulties (mental handicap)	Mental
Mental illness, or suffer from phobia, panics or other nervous disorders	Mental
Progressive illness not included elsewhere (e.g. cancer, multiple sclerosis, symptomatic HIV, Parkinson's disease, muscular dystrophy)	Physical
Autism (2020 onwards)	Mental
Other health problems or disabilities	Neither

NOTE: For a classification of conditions as mental vs. physical see Munford et al. 2016)

Appendix B

Figure B1

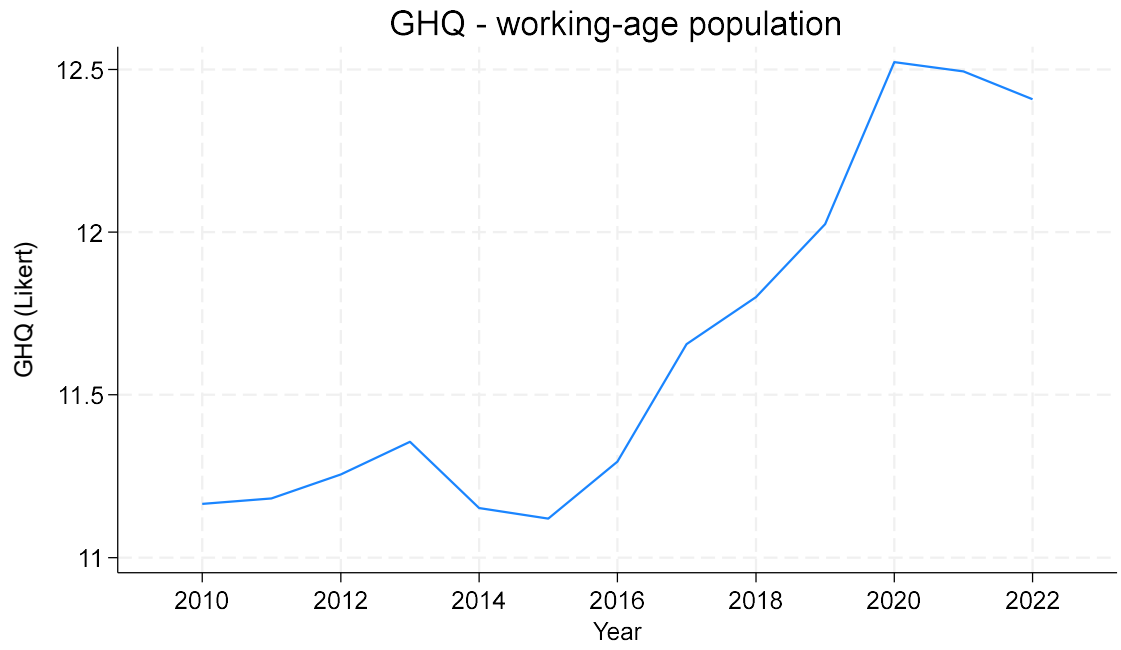


Figure B2

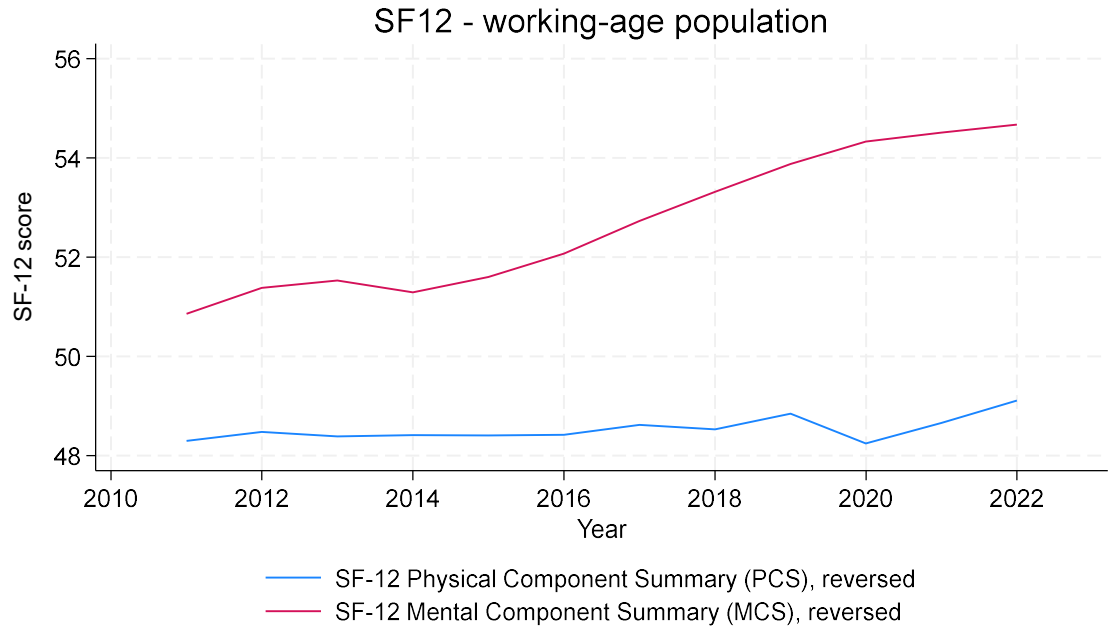


Figure B3

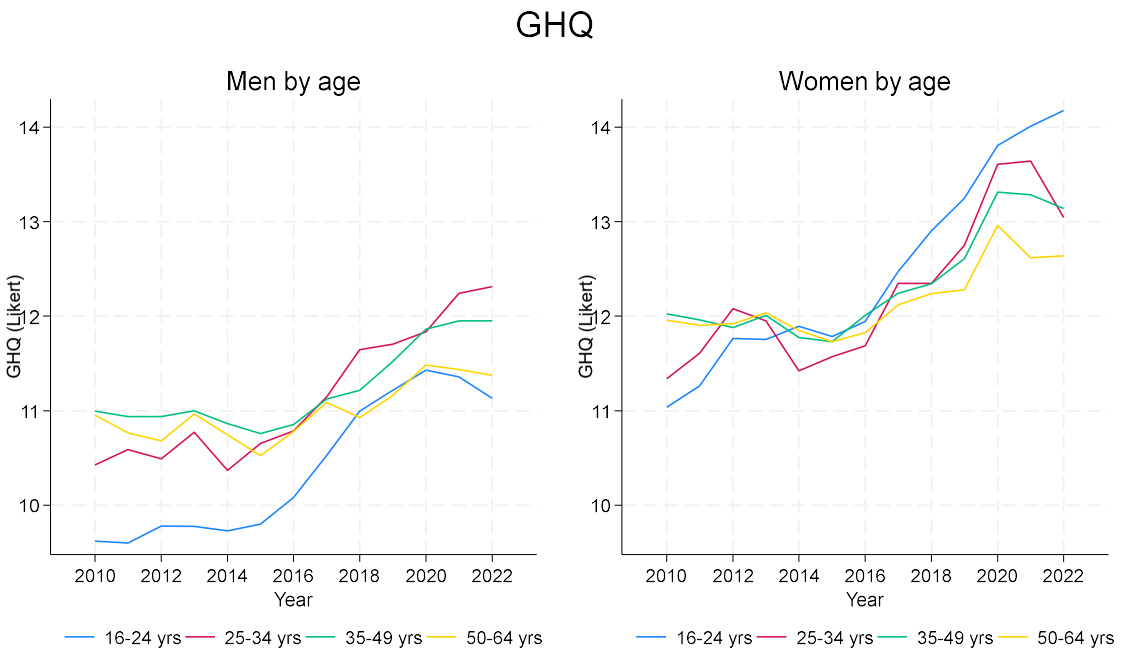


Figure B4

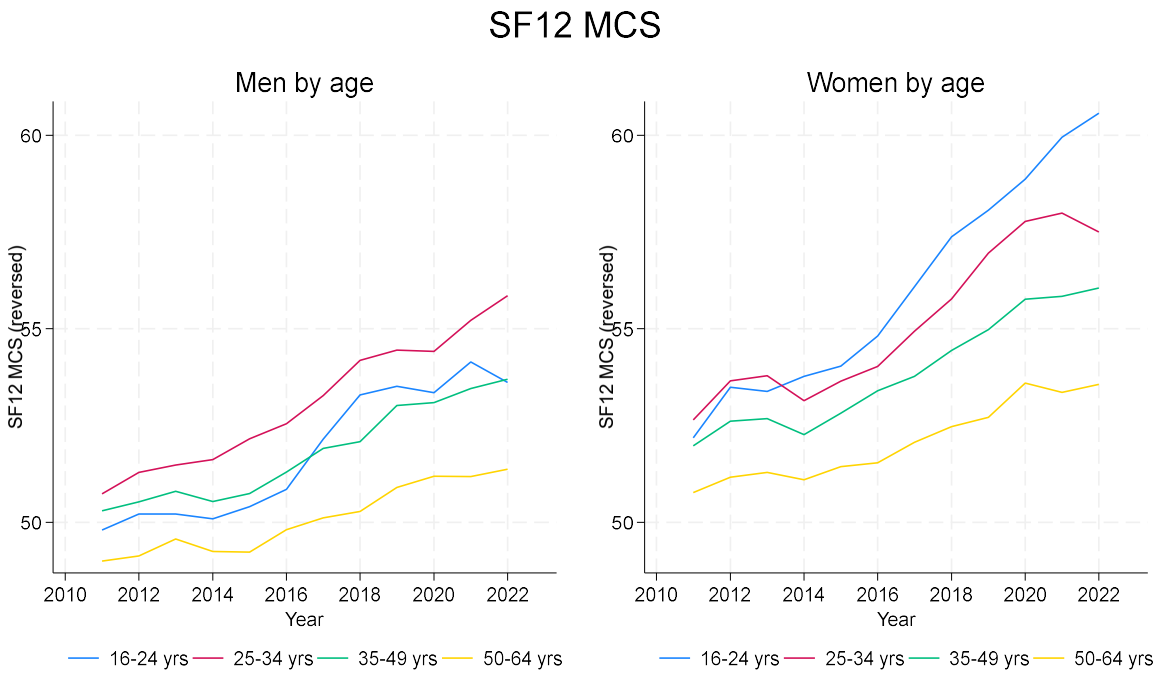


Figure B5

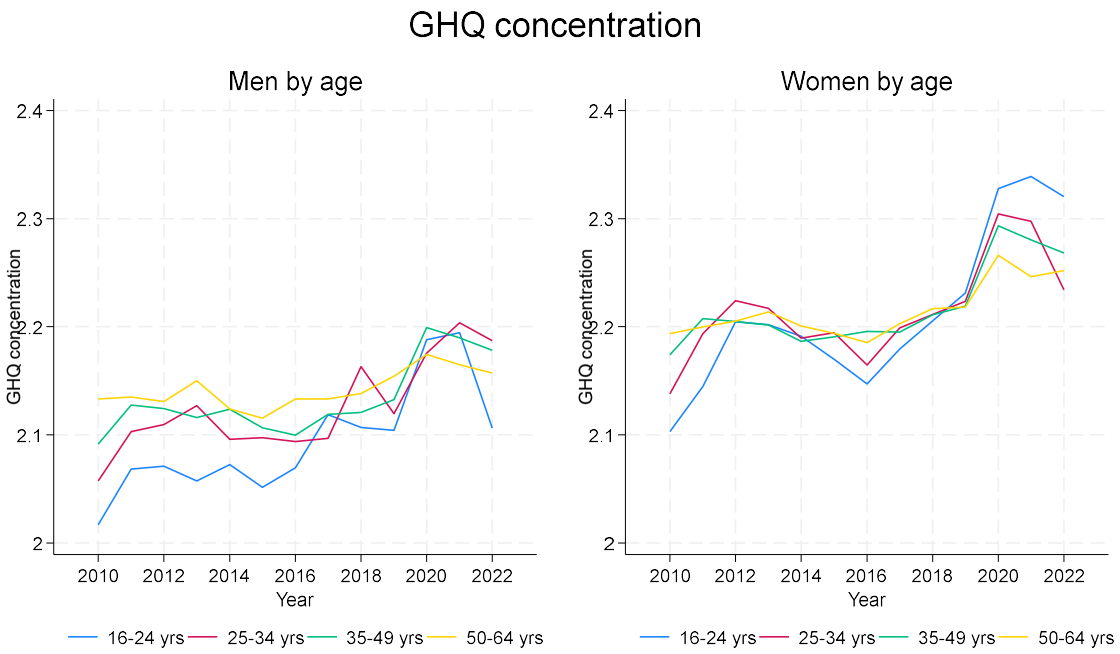


Figure B6

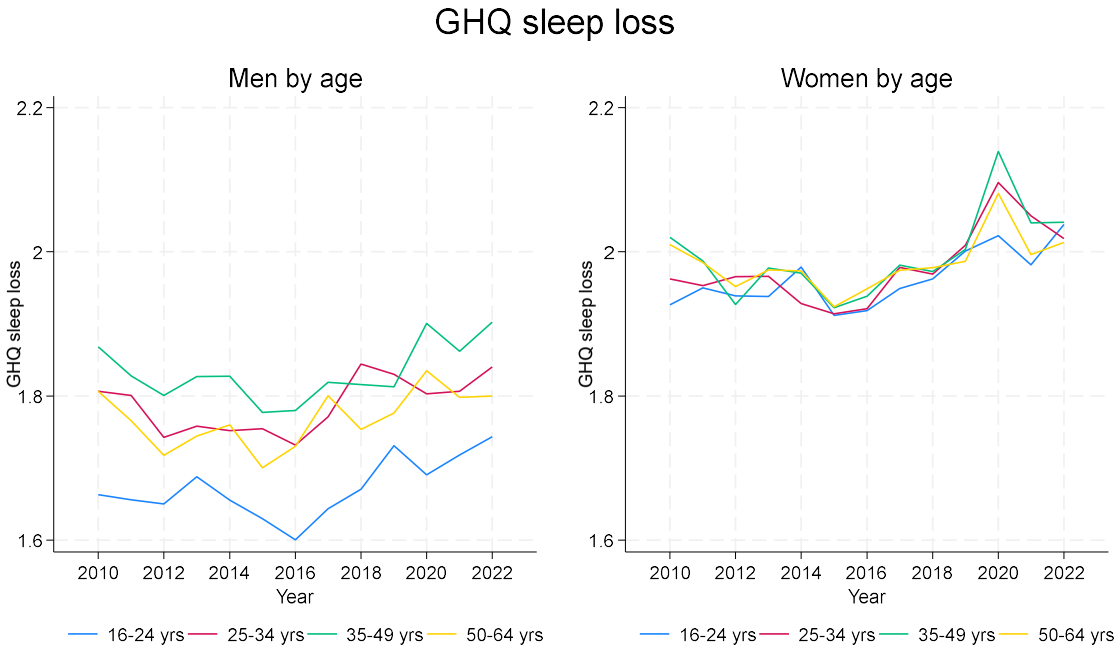
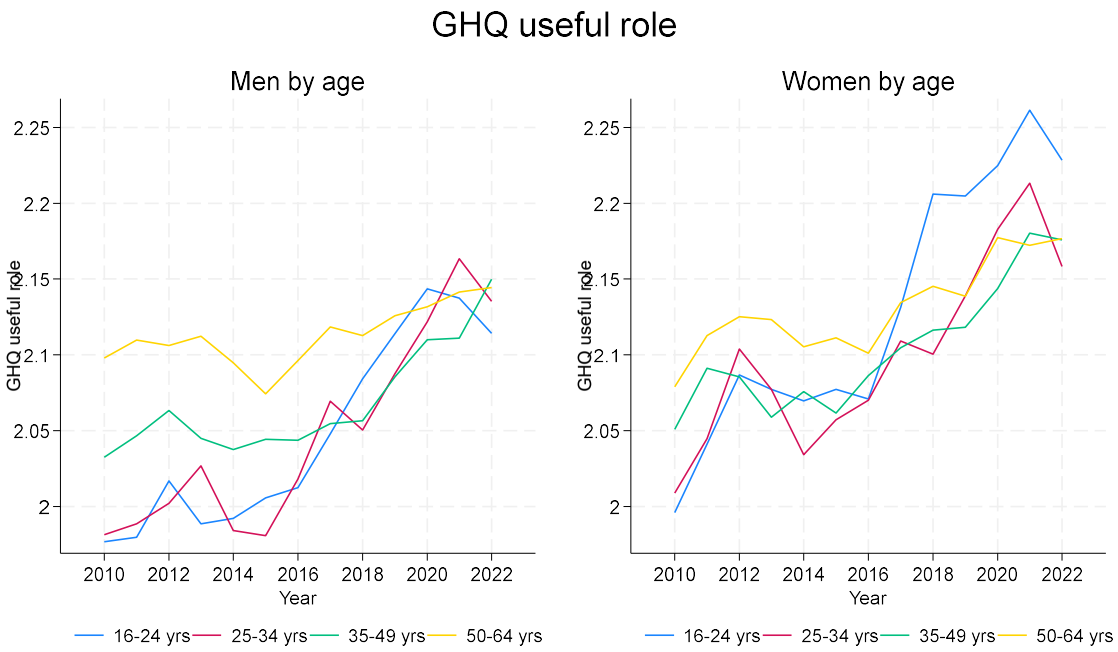


Figure B7



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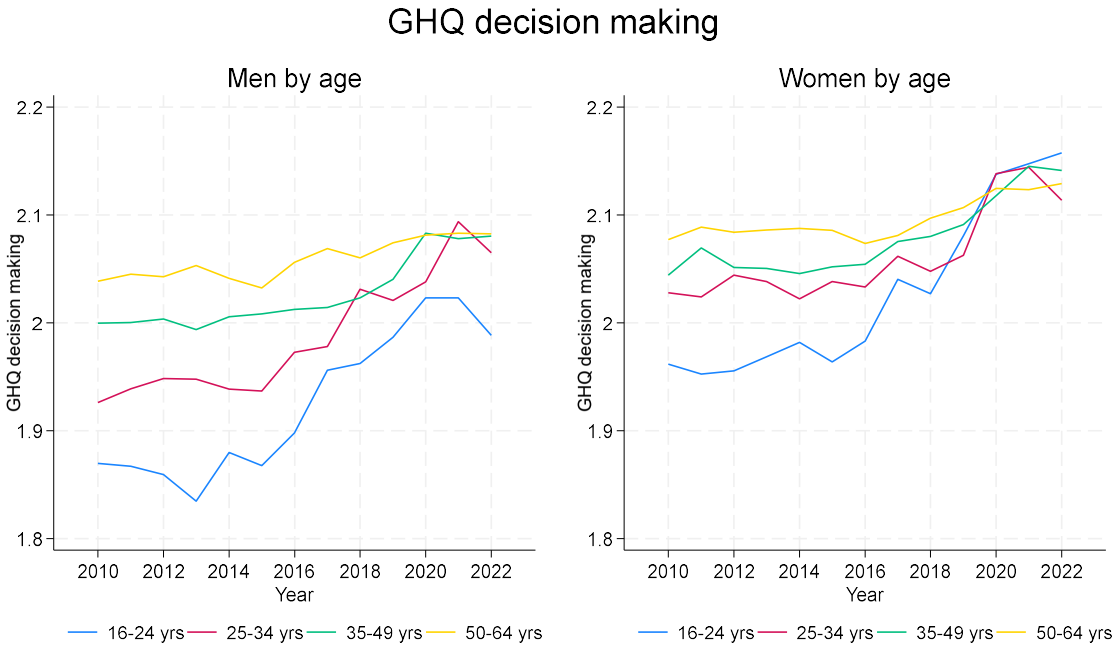


Figure B9

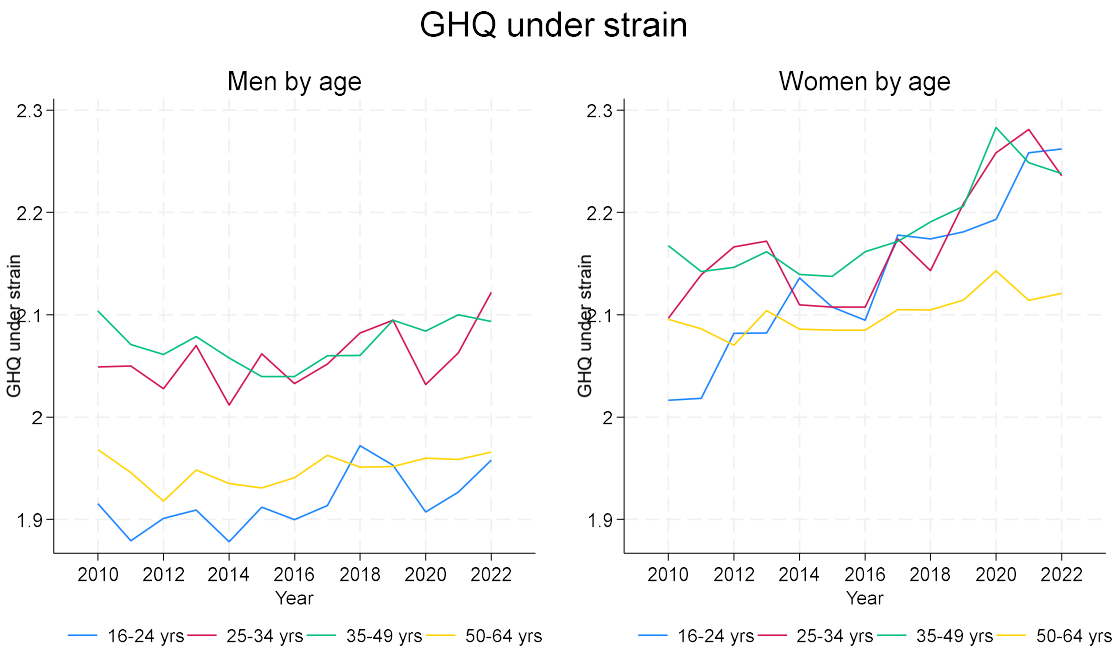


Figure B10

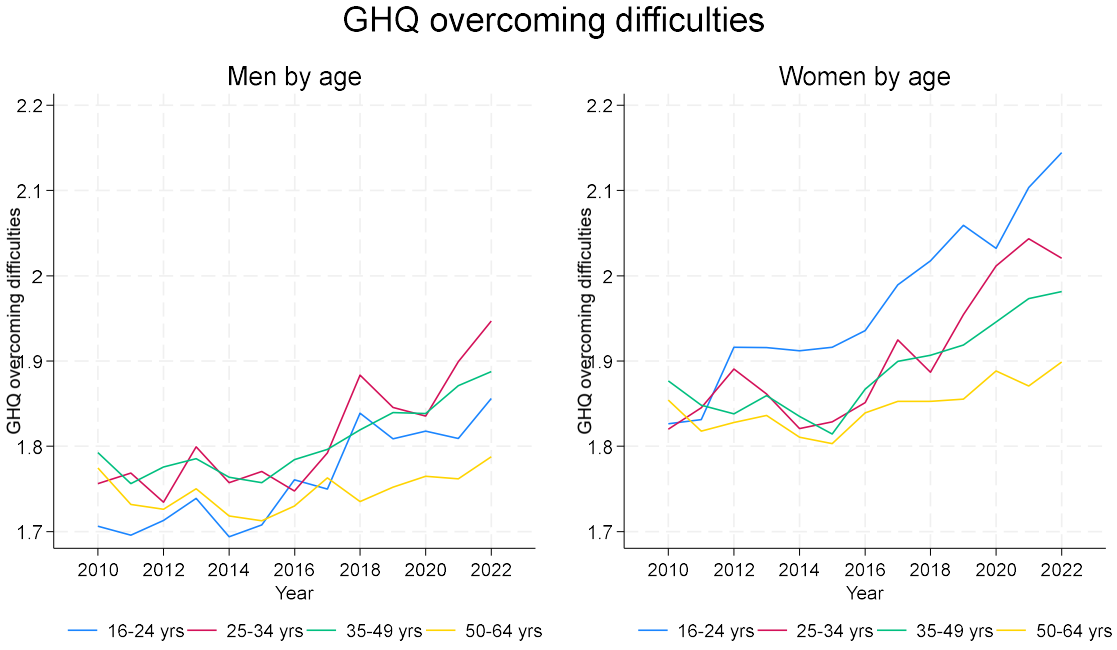


Figure B11

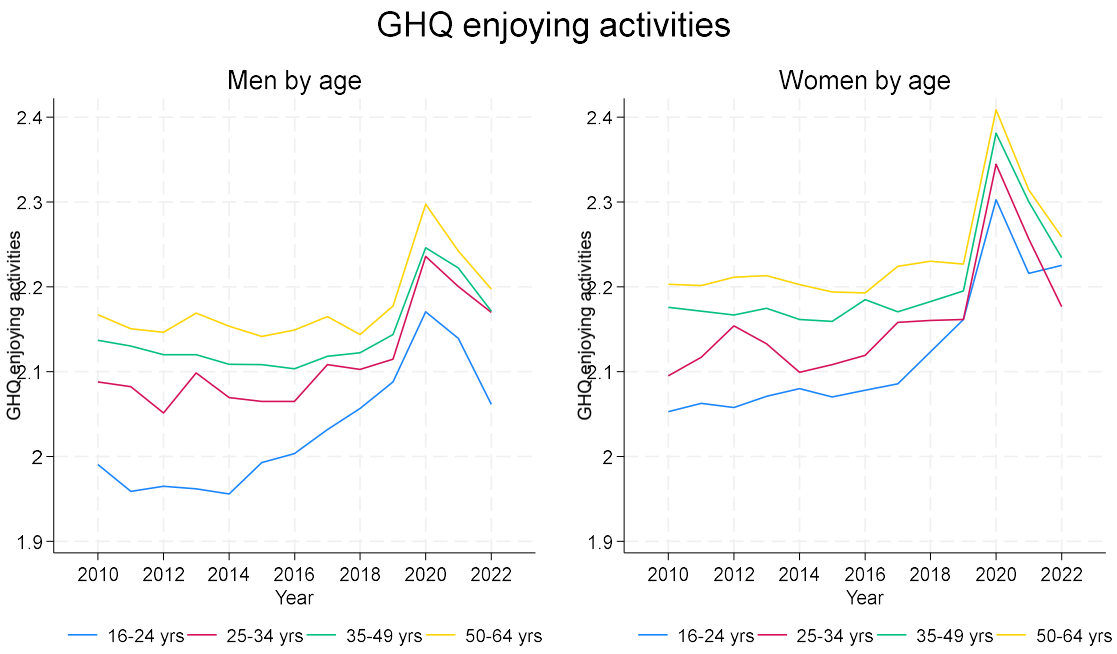


Figure B12

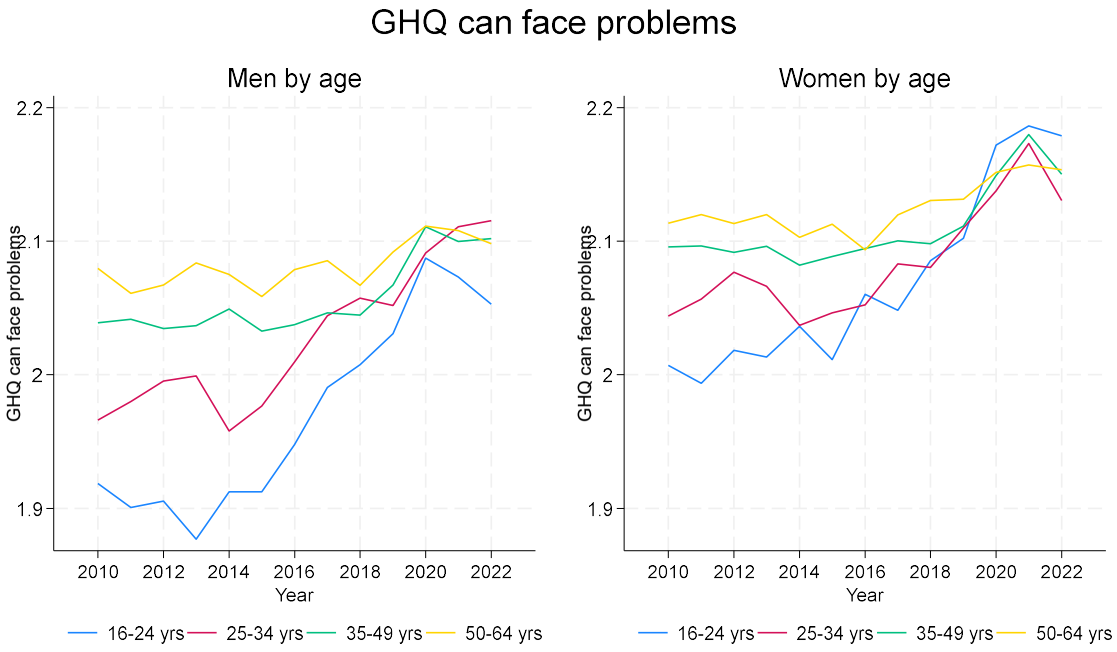


Figure B13

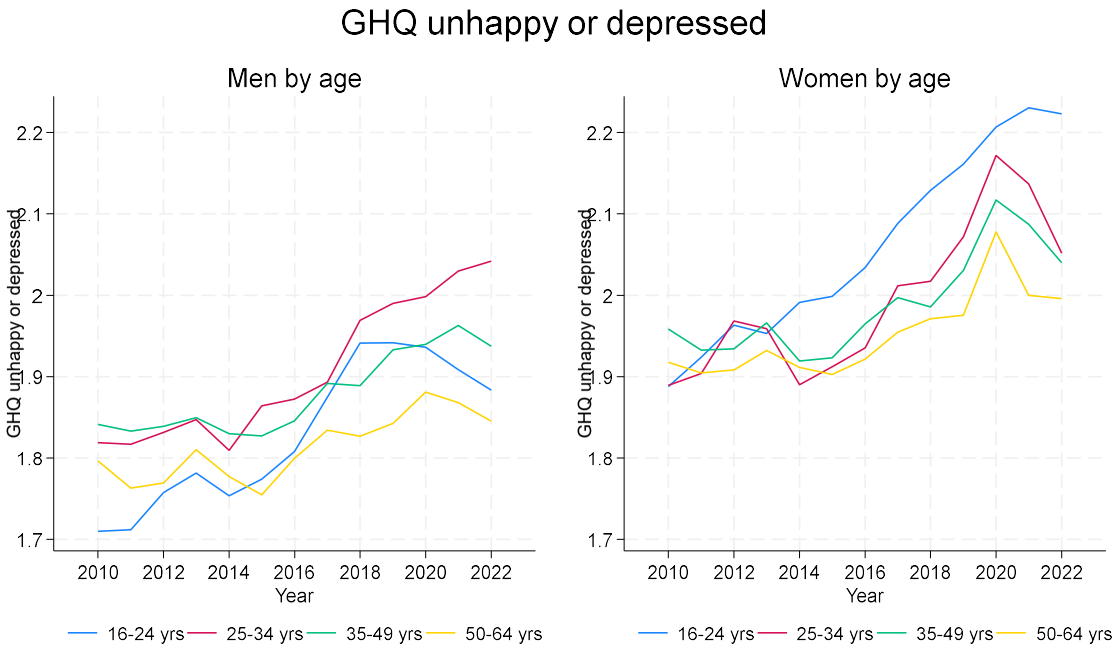


Figure B14

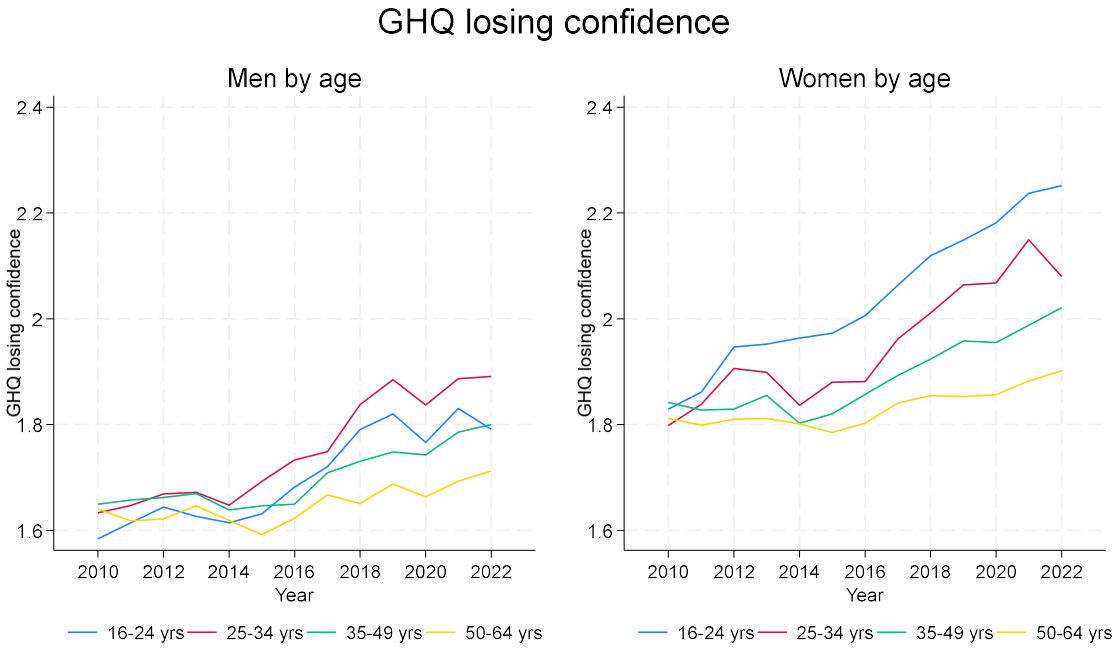


Figure B15

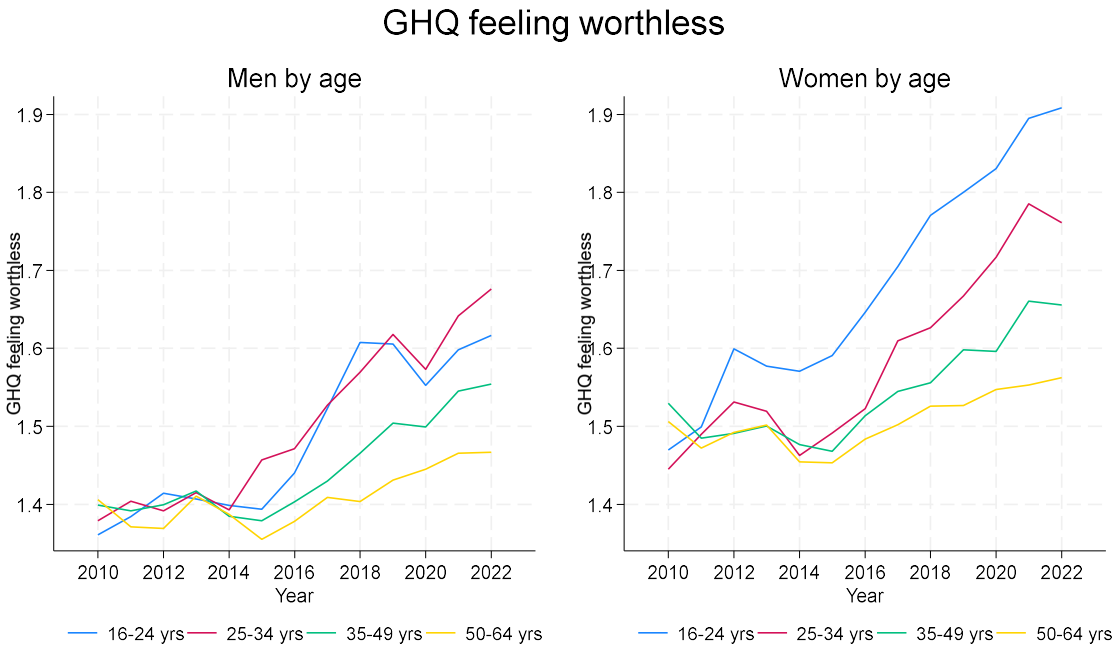
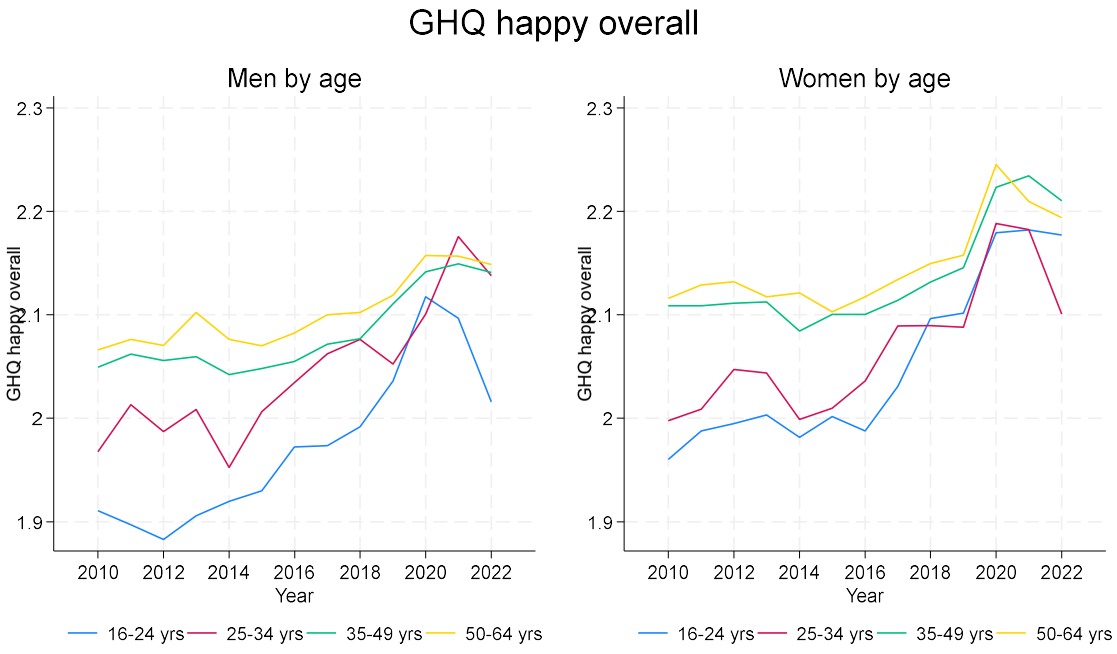


Figure B16



Appendix C

The effects of changes in the reporting of health on counterfactual predictions of employment

Our analysis centres on the prediction of counterfactual employment rates by means of substituting baseline health for contemporaneous health in a regression model. However, if the reporting of health changes over time, our counterfactual predictions may be incorrect.[16] We consider the potential errors using a very simple model of employment, with a single dummy variable capturing reported poor health, together with a model of reporting behaviour as a function of underlying health.

Consider a model of employment for two years, $t = 0,1$:

$$y_{it} = \alpha_t + \beta_t^h h_{it} + \mathbf{x}_{it}\boldsymbol{\beta}_t^x + \varepsilon_{it} \quad \text{(S1)}$$

where $y_{it} = 1$ if individual i was employed in year t and 0 otherwise, h_{it} is a dummy variable equal to 1 if the individual reports poor health and zero otherwise, $\mathbf{x}_{it}$ includes all other relevant characteristics and the error term ε_{it} has a mean of zero.

The employment rate based on this model is:

$$\bar{y}_t = \alpha_t + \beta_t^h \bar{h}_t + \bar{\mathbf{x}}_t\boldsymbol{\beta}_t^x \quad \text{(S2)}$$

Here $\bar{y}_t$ is the actual employment rate in year t and $\bar{h}_t$ and $\bar{\mathbf{x}}_t$ contain the proportion of people in poor health and the means of the other explanatory variables in year t.

Taking year 0 as a baseline, we are interested in what the employment rate would be in year 1 if mean health remained at its baseline level but other characteristics changed in line with their observed values:

$$\bar{y}_1^{c1} = \alpha_1 + \beta_1^h \bar{h}_0 + \bar{\mathbf{x}}_1\boldsymbol{\beta}_1^x \quad \text{(S3)}$$

We could predict $\bar{y}_1^{c1}$ based on OLS estimates of (S1) from year 1, substituting the baseline health level $\bar{h}_0$ in the prediction. However, the concern is that health reporting may have changed between years 0 and 1, and more specifically that health conditions may be reported in year 1 that would not

[16] Note that this issue concerns changes to individual self-reporting. We are not considering changes in the measurement of health, arising from changes to the definitions of health variables in the data sets in question. In our analysis period, there are no changes to health-related variable definitions.

have been reported as such in year 0. This presents a problem for predicting counterfactual employment in year 1 because β_1^h no longer represents the effect that poor health, as reported in year 0, would have in year 1.

To assess the effect of changes in reporting behaviour, we specify a linear probability model of reported health as a function of underlying health:

$$h_{it} = \gamma_t + \delta_t h_{it}^* + v_{it} \tag{S4}$$

where h_{it}^* is a continuous, non-negative index of (poor) health, δ_t is positive, and the error term v_{it} has a mean of zero. The possible changes in reporting behaviour can be expressed as changes to both parameters in this model. First, an increase in γ_t will lead to an increase in reports of poor health for the same levels of underlying health. Second, in increase δ_t will make reporting more sensitive to a worsening of underlying health than it would have otherwise been.

Substituting (S4) into (S1) yields an expression for employment in terms of underlying health:

$$y_{it} = \alpha_t + \beta_t^h \gamma_t + \beta_t^h \delta_t h_{it}^* + \mathbf{x}_{it}\boldsymbol{\beta}_t^x + \beta_t^h v_{it} + \varepsilon_{it} \tag{S5}$$

Now, since the proportion of individuals in poor health is given by $\bar{h}_t = \gamma_t + \delta_t \bar{h}_t^*$ (from (S4)), the counterfactual employment rate specified in (S3) can be rewritten:

$$\bar{y}_1^{c1} = \alpha_1 + \beta_1^h \gamma_0 + \beta_1^h \delta_0 \bar{h}_0^* + \bar{\mathbf{x}}_1 \boldsymbol{\beta}_1^x \tag{S6}$$

It is clear that this counterfactual holds constant not just underlying health but also reporting behaviour (the reporting parameters take their baseline values). This counterfactual therefore ignores any changes to reporting between the two years.

In contrast, from (S5), a counterfactual that holds constant underlying health only is given by:

$$\bar{y}_1^{c2} = \alpha_1 + \beta_1^h \gamma_1 + \beta_1^h \delta_1 \bar{h}_0^* + \bar{\mathbf{x}}_1 \boldsymbol{\beta}_1^x \tag{S7}$$

This counterfactual correctly keeps underlying health at it baseline level, whilst allowing for any changes in how that health would be reported in year 1. We can now compare $\bar{y}_1^{c2}$, the desired counterfactual, with $\bar{y}_1^{c1}$, the counterfactual that we can feasibly estimate:

- If reporting behaviour does not change, they are identical and so our estimate is correct.
- Since $\beta_1^h < 0$, an increase in γ_t implies that $\bar{y}_1^{c1}$ will be an overestimate of the desired counterfactual employment rate (since $\beta_1^h \gamma_0 > \beta_1^h \gamma_1$).
- Furthermore, since $\bar{h}_0^* > 0$, an increase in δ_t also implies that $\bar{y}_1^{c1}$ will overestimate of the desired counterfactual employment rate (since $\beta_1^h \delta_0 \bar{h}_0^* > \beta_1^h \delta_1 \bar{h}_0^*$).

Therefore, overall, a change in reporting behaviour of the type suggested will lead us to overestimate the counterfactual employment rate.