

TECHNICAL

COVID-19 and employment changes in Wales

Promising interventions to improve health and health equity

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Introduction

Alma Economics was commissioned by Public Health Wales to identify and describe promising interventions from published literature that could mitigate the adverse effects of the Covid-19 related employment changes on health and health equity of current and future generations in Wales. For this purpose, we developed a map summarising current evidence on labour market interventions that can be implemented to improve health and health equity outcomes for people in Wales, and protect them from the employment hardship caused by the Covid-19 crisis.

Our evidence map addresses the following research questions:

- (i) What interventions have been proposed, designed and/or implemented to mitigate the negative impacts of employment adversities (mainly occurring in the context of the new pandemic and past economic downturns) on health and health inequities for current and future generations?
- (ii) What is the nature of the evidence relating to each identified intervention?
- (iii) What are the promising interventions that can potentially protect the health of people in Wales from the adversities caused by the pandemic?

This technical report summarises key findings from our scoping exercise, carried out to inform the development of our search protocol. It also presents our protocol in detail, including our search strategy and approach to selecting and reviewing relevant studies. Finally, it describes key information from the selected studies covering the following areas: (i) study characteristics, (ii) type of interventions, and (iii) health and health equity outcomes.

This document is accompanied by (i) a narrative summary that presents overarching findings from our evidence map and discusses different employment interventions that can be implemented to tackle changes caused by the pandemic, and thus improve health and health equity outcomes for people in Wales; (ii) an Excel workbook (the Research Extraction Sheet, RES) providing further information on the studies included in the map; (iii) an online tool mapping the available evidence. The online map can be found here: <https://evidencemap.herokuapp.com/>

Scoping exercise

Background

Existing evidence suggests a twofold relationship between employment and health: employment can improve people's health, and healthy people are more likely to be employed than their non-healthy counterparts (Ross and Mirowsky, 1995). According to Dooley (2003), different employment states have distinct health impacts. The author argues that the subjective wellbeing of underemployed people (including working part-time involuntarily or experiencing job insecurity) is lower than the subjective wellbeing of those who are adequately employed.

Paul and Moser (2009) argue that unemployment is negatively correlated with good health outcomes, particularly mental health. Unemployment is shown to be a particularly detrimental experience for young people entering the labour market. For example, there is evidence suggesting that early-career and youth unemployment have long-lasting negative effects on future employment opportunities (Schmillen and Umkehrer, 2017) and mental health later in life (Lee et al., 2019). Nygren et al. (2015) find a positive correlation between early unemployment (that is, unemployment among people aged 16-21 years old) and hypertension in adult age. This positive correlation is observed after controlling for earlier hypertension, unemployment in adult age, and confounders and risk factors for hypertension (e.g., family history of hypertension, alcohol consumption, exercise, BMI, parental working class, family unemployment).

This work focuses on one of the sides of this two-way relationship—namely, employment changes affecting health—and investigates the contribution of labour market interventions to improved health outcomes and reduced health inequities for workers. We also explore health outcomes of labour market policies and interventions for families, centring on indirect benefits for young children through the provision of employment support to parents.

Nicholson et al. (2012) suggest that parents' low-income and low-quality working conditions (e.g., job insecurity and low levels of agency), as well as long working hours, can negatively affect children's health and development. Using data on children aged 0-5 years old, the authors illustrate that children from low-income families are more likely to experience poorer health outcomes than children from wealthier families. Additionally, long working hours mean that parents invest less time in children's development. The authors conclude that these negative effects can persist into middle childhood and in later life, and they emphasise the need for policies that tackle these adverse effects. Moreover, family-friendly employment policies that aim to mitigate the negative impact of the recent pandemic for parents and children are urgently needed to reduce the burden on children, according to UNICEF (2020).

Objectives

To inform the evidence mapping protocol, we carried out a scoping exercise. This exercise identified current evidence on existing labour market interventions and their health outcomes. It also helped refine the main search strategy and ensured that the protocol is tailored to the research questions and captures existing knowledge.

This scoping exercise involved in two stages. Firstly, we identified the research questions. Secondly, we used keywords related to the research questions to conduct targeted searches in databases that included both primary and secondary evidence in the field (Campbell Collaboration, Cochrane Database of Systematic Reviews, Jstor, PubMed, Google Scholar, World Health Organization (WHO), OECD). Based on the evidence located during the scoping exercise, we (i)

adapted the inclusion and exclusion criteria and (ii) finalised the keywords and databases that we used later in the evidence mapping.

The scoping exercise seeks to identify important interventions for addressing employment changes occurring as a result of the current pandemic and past economic downturns in Wales, in other UK nations, and overseas. It also aims to explore health and health equity outcomes for workers, observed to flow from these interventions. While this exercise suggests positive outcomes, the evidence map also identifies disbenefits and unintended consequences.

The scoping exercise mainly includes systematic reviews and some primary research studies on the contribution of labour market policies to workers' health during the Covid-19 pandemic in Wales and internationally, and other economic downturns and crises. It also explores other labour market interventions (implemented outside of the context of downturns) that can bring positive health effects. In line with the scope of the evidence mapping, the review includes studies that (i) focus on health outcomes, (ii) are published in 2010 and onwards, and (iii) examine employment interventions implemented in the 20th or 21st century.

Findings from our scoping exercise suggest that the literature in this area mainly considers topics that are out of the scope of this study. These topics include (i) the links between health and employment, (ii) health interventions that aim to help people find a job or become more productive (e.g., psychological support), (iii) work-focused interventions that support people with mental health conditions, disabilities, or drug misuse issues to acquire skills and re-enter/remain active in the labour market. That said, there are several studies that investigate the health benefits of Covid-19 and other employment-related interventions, which can help us provide well-grounded answers to the research questions.

Interventions following the Covid-19 pandemic and economic downturns

Overall, findings from our scoping exercise suggest that there are two broad types of interventions implemented to address employment hardship caused by the new pandemic: (i) income support, extended unemployment insurance, and other cash transfers to people who have lost their jobs (OECD, 2020a) and (ii) job retention through wage subsidies or short-time work schemes (OECD, 2020b).

These types of policies, along with skills acquisition and job search assistance schemes, have been a key part of national policy responses to protect jobs and incomes from the adverse economic effects of the Covid-19 pandemic in Wales. Examples of Covid-19 related interventions for people in both employment and unemployment in Wales include:

- the Coronavirus Job Retention Scheme,
- the Kickstart Scheme, which aims to create job opportunities for young claimants (16-24 years old) of Universal Credit in Wales and other UK countries,
- self-employment income support scheme,
- self-isolation payments to people with low income who cannot work from home and have to self-isolate,
- online training for furloughed workers,
- 'new style' benefits such as Employment and Support Allowance and Jobseekers Allowance (JSA), aimed for people who work less than 16 hours per week but wish to work more,
- employability skills programmes helping people to improve their job skills,
- ReAct: Redundancy support, which funds people to attend courses that will help them improve their job skills,

- ReAct and Access, which links workers who have been made redundant or were unemployed for less than 2 years to potential employers.¹

Existing literature explores both active and passive labour market policies. Active policies are mainly used to create employment and promote labour market integration. Indicative examples of active policies include job search assistance schemes, work-sharing, and training programmes for unemployed and underemployed workers. Active labour market policies (including training, job search assistance, subsidised employment, and public work programmes) have also been used to tackle youth unemployment (Caliendo and Schmid, 2016). The authors find that job search support results in positive employment outcomes for young participants, while there is mixed evidence regarding the youth employment impact of training and subsidised employment. They also find that participation in public work programmes can have zero or even negative effects on labour market outcomes for young people. Passive labour market policies (e.g. benefits), which provide replacement of income during periods of unemployment and/or job search, have also been widely used to provide income support during downturns (Cazes et al., 2011).

Key impacts on health and health equity

The scoping exercise suggests that labour market policies can substantially impact the health of both the employed and unemployed populations. Recent literature (including research carried out over the last 10 years) mainly investigates the effects of policies on workers' mental health and psychological wellbeing.

The mechanisms through which labour market interventions affect health outcomes vary depending on whether policies are active or passive (defined in the previous section). Active labour market policies affect health and health equity outcomes through employment functions and mechanisms similar to the 'latent functions' of employment set out by Jahoda (1982). These mechanisms include time structure, regular social contact, engagement in activities for a collective purpose, regular activity, sense of mastery and control, security and income. Passive labour market policies such as unemployment benefits seem to affect health and health equity outcomes by increasing one's sense of security (for example, with respect to income). Moreover, labour legislation can generate positive health outcomes through employment protection.

Covid-19 employment-related interventions

Covid-19 employment-related interventions in the UK have been associated with workers' mental health and wellbeing positively. In particular, programmes such as the Job Retention Scheme and short working hours can enhance mental health and wellbeing. Using the COVID-19 United Kingdom Household Longitudinal Study (UKHLS) and focusing on people aged 18-65 years old, Burchell et al. (2020), argue that workers who continued working part-time during the Covid-19 pandemic, those under the Job Retention Scheme, and full-time workers who have started working part-time during the pandemic shared the same levels of mental health with people who continued working full-time. In contrast, the authors maintain that people who became or continued to be unemployed during the pandemic had lower mental health levels than full-time workers.

The study concludes that the introduction of a shorter working week for all (except for people who work in under-pressure sectors) will lead to an increase in the employment rate during the Covid-19 pandemic, as furloughed people will start working again. Thus, this intervention will help protect the mental health and wellbeing of individuals who will be able to enjoy employment-related

¹ More information can be found on the Welsh Government website: <https://gov.wales/get-financial-help-pay-your-bills-during-coronavirus-pandemic>

benefits, such as regular activity, social contact, collective purpose, status and identity, boosted self-esteem, and life satisfaction.

Similarly, other active labour market interventions furthering labour market participation seem to improve health. Achdut and Refaeli (2020) propose that unemployment during the Covid-19 pandemic is linked to psychological distress among Israeli young people (aged 20-35 years old). The authors suggest that active labour market interventions (including fast-tracking of vocational training and skills acquisition, and employment service placements) will boost participants' optimism and sense of control on daily routines, thus leading to enhanced mental health outcomes for young people.

Labour market policies during and/or after economic downturns

Evidence suggests that labour market policies during and/or after past economic crises can have positive effects on health outcomes. According to a study exploring the impact of economic crises on health in Wales, the implementation of active labour market interventions can enhance workers' mental health and wellbeing (Elliott et al., 2010). The study detects positive effects of skills-based programmes on mental health materialised through boosting participants' sense of control.

In line with Elliot et al. (2010), a scoping review carried out by Puig-Barrachina et al. (2020) argues that active labour market policies have a positive impact on mental health and quality of life. In particular, (i) job search assistance increasing the chances of finding a job, (ii) job training helping people develop their skills, and (iii) subsidised employment schemes providing employment to those seeking a job positively affect workers' mental health and wellbeing (in terms of life satisfaction, depression, anxiety, psychological distress, and suicide rates). The pathways through which these active labour market policies enhance health through economic crises include the provision of time structure, meaningful patterns of time use, good alternatives to employment, sense of mastery and control, self-efficacy, and coping mechanisms against setbacks.

Another scoping review by Moore et al. (2017) explores job club interventions (that is, job-search skills development programmes). The study suggests that these interventions can help reduce depressive symptoms of unemployed people, mostly through boosting self-efficacy and resistance efforts in the face of setbacks.

Using 2010 data from 22 European countries, Carr and Chung (2014) explore the effect of employment insecurity on life satisfaction and the impact of both passive and active labour market policies on the same health-related outcome. Active labour market policies (such as training or job search programmes and subsidised employment) and passive labour market policies (such as unemployment benefits) can help reduce the employment insecurity stemming from not being able to find a job and income reduction in case of job loss, respectively. Less employment insecurity is observed to lead to enhanced psychological wellbeing (measured using life satisfaction). The study concludes that more generous labour market policies (such as longer duration or higher unemployment benefits) have a larger positive effect on employment security and, thus, life satisfaction.

Using state fixed-effect models on US data on people aged 20-64 years old over the period 1968-2008, Cylus et al. (2014) observe that higher unemployment benefits reduce the negative impact of economic downturns on suicide rates. In particular, the authors conclude that unemployment benefits provide a safety net to employees in case of job loss, which affects their mental health positively and reduces suicide rates.

Malmusi et al. (2015) explore the health effects of unemployment benefit policies concluding that generous schemes can reduce financial difficulties and psychological distress for unemployed

people. The authors also found that family support employment policies (such as job-protected leave, public childcare, paid leave, public allowances) can lead to reduced child poverty, and enhanced health and development outcomes for children. Ng et al. (2017) identify potential mechanisms through which family support policies affect child outcomes, including: (i) increased time that parents can invest in their children, (ii) increased or maintained standard of living, and (iii) more and of better-quality childcare support options.

Malmusi et al. (2015) highlight the importance of employment protection in increasing job security and quality, thus leading to enhanced physical and mental health outcomes for workers and reduced health inequities. Labour legislation aiming to protect job security and quality could impact mental health inequities based on class and gender differences.

Another policy that has lately been at the centre of policy discussions in Wales and internationally, is the Universal Basic Income (UBI). Research by the World Health Organization (WHO) suggests that basic income can potentially help people control their lives and narrow health inequities during times of economic instability (Haagh and Rohregger, 2019). The study suggests that the scheme could be combined with other income security measures, such as better control of working life or stable contracts. Reed and Lansley (2016) agree that a basic income scheme can help reduce inequity and child poverty.

According to Ruckert et al. (2018), UBI will increase the income of low-income families proportionately more than the higher-income families, contributing to reductions in health inequities. This study also explores the evidence on the health outcomes of similar policies, such as the basic income support implemented in the US state of Alaska. This evidence suggests that UBI could be beneficial for child health development, such as increasing birth weight and improving neonatal nutrition. Similar results are found by Gibson et al. (2020), who conducted a scoping exercise of the health effects of basic income. The authors find that basic income interventions have a strong positive impact on birth weight as well as on recipients' mental health.

Labour market policies implemented outside the context of economic downturns

Our scoping exercise also identifies the health effects of labour market interventions that were not implemented in the context of economic crises. For example, the literature suggests that active labour market policies can positively affect workers' physical and mental health. In particular, a study using a difference-in-difference approach on a 2006/2007 Swedish sample proposes that training programmes can reduce the likelihood of unemployed people aged 16-64 years old being prescribed medications relating to cardiovascular and mental health problems. This is mainly because the programmes change participants' daily routines (Caliendo, 2019).

Moreover, passive labour market policies, such as the provision of minimum income benefits are shown to be associated with lower mortality rates at the national level (Nelson and Fritzell, 2014). There is also literature focusing on the effect of passive labour market interventions on life satisfaction. For example, Ochsen and Welsch (2012) argue that employment protection, as well as a higher level of unemployment benefits, positively affect life satisfaction. Based on 1975-2002 data from 10 European countries, the authors propose that longer duration of unemployment benefits positively affects the life satisfaction of older employees. The results are consistent with studies indicating that higher levels of unemployment benefits, as well as active labour market policies, increase life satisfaction of people aged 15-64 years old. This occurs primarily through

improving social connections and pursuing a collective purpose (Wulfgramm, 2014, 2011).²

Another study exploring the impact of exogenous income transfers on children's outcomes brings forth evidence of improved parenting. This, in turn, generated enhanced child outcomes, such as the reduced prevalence of drug-dealing activities in young adulthood (Akee et al., 2010). Research has also explored the impact of family income and wealth on children's health and early adulthood outcomes. Using a UK sample, Kuehnle (2014) notes that family income has a significant but small effect on children's health when accounting for endogenous factors. She, thus, concludes that income transfers to working parents are not likely to improve children's health substantially.

In contrast, a survey on the links between family income and child health in the UK remarks that income does not affect the health of children aged 0-1 years old, but it has an impact on children aged 2-17 (Apouey and Geoffard, 2013). Other evidence suggests that parents' unemployment also affects the mental health of adolescent children, although the evidence is restricted to girls (Bubonya et al., 2017).

² Wulfgramm (2011) uses 2006-2008 data on the German activation programme 'One-Euro-Job', focusing on 16-64 years old. Wulfgramm (2014) used data from 21 European countries for the period 2002-2009, focusing on workers between 15 and 64 years of age.

Methodology

This section sets out the methodology followed to retrieve evidence included in the evidence mapping. It outlines the information sources, our search strategy to explore evidence relevant to the research questions, the inclusion and exclusion criteria reflecting the research questions, and our search process.

Key information sources and databases

The research team searched for evidence in the following data sources, which cover academic literature, as well as policy documents and other grey literature.

- Campbell Collaboration,
- Databases of published and unpublished academic literature: Google Scholar, PsycArticles, PubMed, JSTOR, Science Direct, SSNR eLibrary, IDEAS/RePec, EconPapers/RePec, Cochrane Database of Systematic Reviews.
- Databases of national and international policy reports and research aiming to inform policies: What Works: Wellbeing, What Works Centre for Local Economic Growth, OECD, World Health Organization (WHO), Economics Observatory, Institute for Fiscal Studies.
- Websites of health service providers and charitable organisations: Children in Wales, Place2Be, Health Foundation.
- Think tanks: the Bevan Foundation, WISERD, the Wales Centre for Public Policy, Education Policy Institute, the Early Intervention Foundation, the Education Foundation, Reform, Demos, IPPR, New Schools Network, Centre for Social Justice, Policy Network, Chatham House, the Sutton Trust, the Education Endowment Foundation, Resolution Foundation, Future Generations Commissioner for Wales, Compass Online, Joseph Rowntree Foundation, Centre for Welsh Studies.

Search strategy

Table 1 presents a list of keywords reflecting the research objectives used to identify relevant sources of international evidence. These keywords were combined into search strings, using Boolean operators (AND/OR/NOT) and other database-specific search operators to arrive at a long list of materials. This list was screened to see if all studies meet the inclusion criteria set out in the next section. Regarding academic literature, we researched publication titles, keywords, and abstracts; for grey literature, we looked into the full text. Welsh-language searches were limited to academic literature databases.

The full search strings across the different datasets can be found in the Research Activity Sheet, which also includes the outcomes from our searches (the numbers of retrieved items).

Table 1. Keywords and search strings

Keyword 1 Health outcomes	health; health inequ* [inequalities, inequality, inequities, inequity]; health equ* [equalities, equality, equities, equity]; wellbeing (well-being); distress; psychological; suicide; mortality; life satisfaction; depression; depressive symptoms; anxiety; stress; deprivation
Keyword 2 Labour market policies and interventions	labour (labor) market; employment; unemployment; economic; intervention* [intervention/interventions]; policy; policies; initiative* [initiative/initiatives]; regulation; legislation; institution* [institution/institutions]; program* [program, programme; program; programs]; scheme* [scheme; schemes] unemployment benefit; furlough; Job Retention Scheme; basic income; [minimum/maximum/living] wage* [wage/wages]; transfer payment; family support; education; training; minimum income benefit; shorter working [week/hours]; maximum working [week/hours]; behavioural nudges
Keyword 3 Demographic groups	youth; young people; famil* [family/families]; parents; child* [child; children] outcome* [outcome/outcomes]; newborn* [newborn/newborns]; infant* [infant/infants*]; toddler* [toddler/toddlers]; early years; fetal development; poverty; low income; gender; minorit* [minority/minorities]
Keyword 4 Time period	covid-19; pandemic; [economic] cris* [crisis/crises]; [economic] downturn* [downturn/downturns]; recession* [recession/recessions]

Inclusion criteria

The search process yielded 7,172 English studies. We did not find any studies in Welsh. We recorded and maintained the search results in a specialised software package called Zotero. Zotero is a free, open-source reference management tool that stores citation information (e.g., author, title, and publication fields) and can organise, tag, and perform advanced searches.

Two members of the research team screened the titles and abstracts, removed duplicates, and rejected items that were irrelevant to the research questions. The resulting 317 papers that could potentially meet the inclusion criteria were added in a “long list” of research studies. After having compiled a long list, two members of our team read the papers and reports in full to check if they meet the inclusion criteria (set out in Table 2). Items that met our criteria were then compiled into a “short list” of papers. Our short list came to include 83 papers that meet all the inclusion criteria.

An independent researcher selected a random sample of studies from the long list and followed the screening process. They read the full text of the randomly selected papers and verified that they met the inclusion criteria to be added to the short list. They agreed with the results of the initial screening process for 97% of the randomly selected papers. The 3% of the papers for which there was a disagreement explored labour market policies and non-health-related outcomes; these papers mainly touched upon health-related outcomes in the background section. In light of the fact that the studies’ primary focus was out of the scope of this work, and following discussions with the independent reviewer, the project researchers and the project director opted to exclude these

papers from the final (short) list.

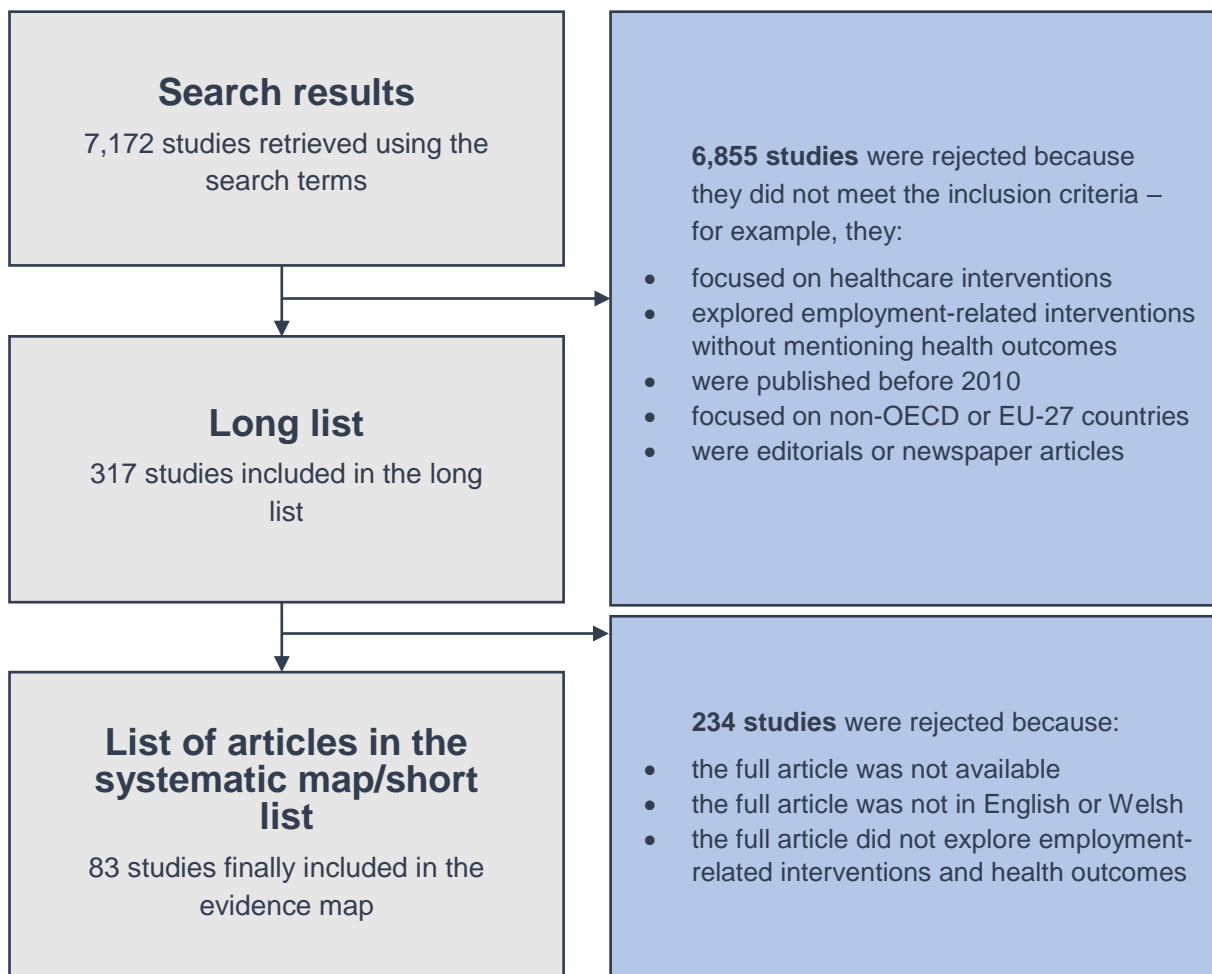
Table 2. Inclusion and exclusion criteria

Theme	Inclusion criteria	Exclusion criteria
Context and Intervention types	<ul style="list-style-type: none"> • Employment-related interventions that have a health and health equity and inequity impact on the current and future generations • Other types of employment-related interventions (universal, policy, in specific settings, for particular sub-populations) that specifically target health outcomes 	<ul style="list-style-type: none"> • Any health-related interventions for working populations (health behaviour interventions, healthcare interventions) • Any employment-related intervention which is part of a health intervention scheme • Any employment-related intervention targeting only groups with learning difficulties, and/or mental health conditions
Demographic groups	<ul style="list-style-type: none"> • Working age population (16-64 years old) • Young people (16-24 years old) • Families with children aged 0-3 years old, including pregnancy 	
Outcomes	<ul style="list-style-type: none"> • Health-related outcomes (physical health, mental health, psychological wellbeing, and health equity/inequity) 	<ul style="list-style-type: none"> • Non-health related outcomes
Evidence type & research methods	<ul style="list-style-type: none"> • All (experimental, quasi-experimental, cross-sectional, descriptive, qualitative etc.) 	
Geographic location	<ul style="list-style-type: none"> • UK, OECD countries, EU-27 countries 	<ul style="list-style-type: none"> • Non-OECD or EU-27 countries
Date of research	<ul style="list-style-type: none"> • Post-2010 research 	<ul style="list-style-type: none"> • Pre-2010 peer-reviewed and grey literature
Language	<ul style="list-style-type: none"> • English and Welsh 	<ul style="list-style-type: none"> • Research in any other language
Time-period covered	<ul style="list-style-type: none"> • Findings associated with interventions after the 20th century 	<ul style="list-style-type: none"> • Findings associated with interventions before the 20th century
Types of publication	<ul style="list-style-type: none"> • Peer-reviewed journal articles; non-peer reviewed academic outputs (reports, working papers, etc.); government-commissioned research; publications by other research organisations; expert consensus • Evidence reviews and original studies 	<ul style="list-style-type: none"> • Guidelines • Editorials/newspaper articles

Search process

Figure 1 presents the flow chart summarising the results of our mapping.

Figure 1. Search strategy



Data management

We also developed a Research Extraction Sheet (RES) in MS Excel to document information of the studies included in the evidence mapping. It covers the following topics: (i) high-level study information (e.g., title, authors, type of publication, etc.), and (ii) detailed information regarding study approach and findings (e.g., abstract, methodology, type of employment-related interventions analysed, health impact etc.). It also includes a detailed summary of findings for each study.

The RES incorporates essential information used to produce the research narrative. This information is also presented in our interactive evidence map tool.

Key findings

Study characteristics

In total, 83 studies met the inclusion criteria and were retained in the final list. In terms of publication type, most are articles published in academic journals (n=58), 10 are working papers, and 15 are policy reports. The identified studies cover 8 countries and regions, including England (n=3), Wales (n=2), the UK (n=13), EU countries (n=14), a combination of EU countries and the UK (n=13), and other OECD countries, such as Canada and the US (n=21). 14 papers address additional international background, covering EU and other OECD countries. 3 studies – rather theoretical and broad in scope – do not focus on particular countries. In terms of time period, we categorised existing studies into three periods of analysis: (i) Covid-19 period (n=12), (ii) periods of economic crises and downturns (n=15), and (iii) periods non-characterised by economic downturns or Covid-19 (n=56).

Regarding the demographic groups, 5 studies examine the health effects of employment interventions on young people, 12 focus on families with young children (including pregnancy), and 46 refer to health impacts for the working-age population. We also located 4 papers discussing policies targeting more than one demographic group. 2 papers consider policies focusing on families with young children and working-age people and 2 studies explore interventions for young people, families with young children, and the working-age population. Finally, 16 studies analyse policies that affect population health without specifying the demographic group under consideration.

From a methodological perspective, quasi-experimental studies³ dominate the research design (n=30). Other methodologies include 17 evidence and literature reviews, 11 case studies, 9 systematic reviews, 9 cross-sectional studies, 1 experimental design, 1 qualitative analysis, and 5 studies that combine different methodologies (mixed methods).

Labour market interventions and health outcomes

The studies also examine a wide range of labour market interventions and health outcomes. The research covers 6 broad categories of labour market interventions, which are broken down into sub-type policies:

- Active labour market policies: active labour market programmes (combining different policy measures); youth programmes; education and training programmes; job creation; job search assistance; benefit sanctions
- Passive labour market policies: benefits and income transfers to the unemployed
- Covid-19 related labour market policies: Job Retention Scheme; Kickstart scheme; shorter working week
- Family support policies: family support policies (combining different policy measures); free or affordable childcare; family allowances; parental leave; 'Welfare-to-Work'

³ The "quasi-experimental" category mainly includes studies with before/after research designs (for example, difference-in-differences, propensity score matching, and regression discontinuity). It also includes studies analysing panel data and using other methodologies that aim to gauge links from employment interventions to health outcomes without relying on a before/after framework (for example, fixed effects).

interventions

- Income transfers: Universal Basic Income; tax credit and cash transfers
- Labour legislation: flexicurity; flexible arrangements; Employment Protection Legislation; minimum or living wages

The health outcomes include (i) general health (self-perceived health), (ii) physical health, including morbidity, mortality, and cardiovascular disorders, (iii) mental health, (clinically diagnosed mental health conditions and suicide rates), (iv) psychological wellbeing, including self-reported life satisfaction and wellbeing, (v) child outcomes, such as birth weight and gestational length, and (vi) health equity or inequity outcomes, referring to health equities among different socio-economic or demographic groups.

It should be noted that one study might examine more than one labour market interventions and more than one type of health outcomes. 27 studies examine different types of active labour market policies and their effects on general, physical, mental health, psychological wellbeing, and health equity or inequity outcomes. 21 studies consider the association between passive labour market policies and health outcomes (except for child outcomes). The Covid-19 related interventions are the focus of 6 papers and reports, which investigate their impact on physical and mental health, psychological wellbeing, and health equity outcomes. 15 studies chart the links between family support policies and potential health outcomes, especially child outcomes. Finally, 17 academic papers and research reports delve into income transfers and 22 studies into labour legislation.

The research findings on the health outcomes of the above-discussed interventions are presented in detail in the narrative summary and the online tool.

Evidence map

Once all the relevant evidence was digested, the final stage of the evidence mapping was to extract the key findings from the literature. The evidence map categorises the research studies into the 6 broad categories of labour market interventions and the 6 types of health and health equity outcomes. The evidence map is available online at: <https://evidencemap.herokuapp.com/>

Each cell includes the number of papers that correspond to specific types of interventions and health outcomes. By clicking on a cell, a tab appears. This tab includes the titles of the research studies exploring the x sub-type of intervention and the y health outcome. Users can also select each research study, and, in doing so, they are re-directed to another tab providing additional information on the specific study.

Supplementary information includes (i) the abstract (for grey literature: aim and research questions), (ii) the publication type, (iii) methodology, (iv) demographic group, (v) period of analysis, (vi) country, and (vii) specific measures of health outcomes falling under broader categories (e.g., cardiovascular disorders for physical health, mental health scores, and life satisfaction for wellbeing). Our map is interactive; it includes filters that allow users to swiftly explore the evidence of interest. Users can choose between the following filters: country, type of publication, methodology, demographic group, period of analysis, and impact (positive, negative, mixed, or no impact).

References

- Achdut, N., Refaeli, T., 2020. Unemployment and Psychological Distress among Young People during the COVID-19 Pandemic: Psychological Resources and Risk Factors. *Int. J. Environ. Res. Public Health* 17, 7163. <https://doi.org/10.3390/ijerph17197163>
- Akee, R.K.Q., Copeland, W.E., Keeler, G., Angold, A., Costello, E.J., 2010. Parents' Incomes and Children's Outcomes: A Quasi-experiment Using Transfer Payments from Casino Profits. *Am. Econ. J. Appl. Econ.* 2, 86–115. <https://doi.org/10.1257/app.2.1.86>
- Apouey, B., Geoffard, P.-Y., 2013. Family income and child health in the UK. *J. Health Econ.* 32, 715–727. <https://doi.org/10.1016/j.jhealeco.2013.03.006>
- Bubonya, M., Cobb-Clark, D.A., Wooden, M., 2017. Job loss and the mental health of spouses and adolescent children. *IZA J. Labor Econ.* 6, 6. <https://doi.org/10.1186/s40172-017-0056-1>
- Burchell, B., Wang, S., Kamerāde, D., Bessa, I., Rubery, J., 2020. Cut hours, not people: no work, furlough, short hours and mental health during the COVID-19 pandemic in the UK | *Understanding Society*.
- Caliendo, M., 2019. Health Effects of Labor Market Policies: Evidence from Drug Prescriptions (VfS Annual Conference 2019 (Leipzig): 30 Years after the Fall of the Berlin Wall - Democracy and Market Economy). Verein für Socialpolitik / German Economic Association.
- Caliendo, M., Schmidl, R., 2016. Youth unemployment and active labor market policies in Europe. *IZA J. Labor Policy* 5, 1. <https://doi.org/10.1186/s40173-016-0057-x>
- Carr, E., Chung, H., 2014. Employment insecurity and life satisfaction: The moderating influence of labour market policies across Europe. *J. Eur. Soc. Policy* 24, 383–399. <https://doi.org/10.1177/0958928714538219>
- Cazes, S., Heuer, C., Verick, S., 2011. Labour Market Policies in Times of Crisis, in: Islam, I., Verick, S. (Eds.), *From the Great Recession to Labour Market Recovery: Issues, Evidence and Policy Options*. Palgrave Macmillan UK, London, pp. 196–226. https://doi.org/10.1057/9780230295186_8
- Cylus, J., Glymour, M.M., Avendano, M., 2014. Do generous unemployment benefit programs reduce suicide rates? A state fixed-effect analysis covering 1968-2008. *Am. J. Epidemiol.* 180, 45–52. <https://doi.org/10.1093/aje/kwu106>
- Dooley, D., 2003. Unemployment, Underemployment, and Mental Health: Conceptualizing Employment Status as a Continuum. *Am. J. Community Psychol.* 32, 9–20. <https://doi.org/10.1023/A:1025634504740>
- Elliott, E., Harrop, E., Rothwell, H., Shepherd, M., Williams, G., 2010. The Impact of the Economic Downturn on Health in Wales: A Review and Case Study.
- Gibson, M., Hearty, W., Craig, P., 2020. The public health effects of interventions similar to basic income: a scoping review. *Lancet Public Health* 5, e165–e176.
- Haagh, L., Rohregger, B., 2019. Universal basic income policies and their potential for addressing health inequities.
- Jahoda, M., 1982. *Employment and Unemployment* (Cambridge Books). Cambridge University Press.
- Kuehnle, D., 2014. The causal effect of family income on child health in the UK. *J. Health Econ.* 36, 137–150. <https://doi.org/10.1016/j.jhealeco.2014.03.011>
- Lee, J.O., Jones, T.M., Yoon, Y., Hackman, D.A., Yoo, J.P., Kosterman, R., 2019. Young Adult Unemployment and Later Depression and Anxiety: Does Childhood Neighborhood Matter? *J. Youth Adolesc.* 48, 30–42. <https://doi.org/10.1007/s10964-018-0957-8>

Malmusi, D., Borrell, C., Suhrcke, M., Toffolutti, V., O'Campo, P., Carles, M., Mitchell, C., Freiler, A., Julià, M., Vanroelen, C., Tarafa, G., Ollé-Espluga, L., Sánchez, E., Artazcoz, L., Vinberg, S., Benach, J., Melis, G., Gelormino, E., Tabasso, M., Belak, A., 2015. Social and economic policies matter for health equity. Conclusions of the SOPHIE project.

Moore, T.H.M., Kapur, N., Hawton, K., Richards, A., Metcalfe, C., Gunnell, D., 2017. Interventions to reduce the impact of unemployment and economic hardship on mental health in the general population: a systematic review. *Psychol. Med.* 47, 1062–1084.

<https://doi.org/10.1017/S0033291716002944>

Nelson, K., Fritzell, J., 2014. Welfare states and population health: the role of minimum income benefits for mortality. *Soc. Sci. Med.* 1982 112, 63–71.

<https://doi.org/10.1016/j.socscimed.2014.04.029>

Ng, E., Julià, M., Muntaner, C., O'Campo, P., 2017. Family support policies and child outcomes: a realist-scoping review. *Community Work Fam.* 20, 292–306.

<https://doi.org/10.1080/13668803.2016.1262328>

Nicholson, J.M., Strazdins, L., Brown, J.E., Bittman, M., 2012. How parents' income, time and job quality affect children's health and development. *Aust. J. Soc. Issues* 47, 505–525. <https://doi.org/10.1002/j.1839-4655.2012.tb00263.x>

Nygren, K., Gong, W., Hammarström, A., 2015. Is hypertension in adult age related to unemployment at a young age? Results from the Northern Swedish Cohort. *Scand. J. Public Health* 43, 52–58.

<https://doi.org/10.1177/1403494814560845>

Ochsen, C., Welsch, H., 2012. Who benefits from labor market institutions? Evidence from surveys of life satisfaction. *J. Econ. Psychol.* 33, 112–124.

<https://doi.org/10.1016/j.joep.2011.08.007>

OECD, 2020a. Supporting people and companies to deal with the COVID-19 virus: Options for an immediate employment and social-policy response.

OECD, 2020b. Job retention schemes during the COVID-19 lockdown and beyond.

Paul, K.I., Moser, K., 2009. Unemployment impairs mental health: Meta-analyses. *J. Vocat. Behav.* 74, 264–282.

<https://doi.org/10.1016/j.jvb.2009.01.001>

Puig-Barrachina, V., Giró, P., Artazcoz, L., Bartoll, X., Cortés-Franch, I., Fernández, A., González-Marín, P., Borrell, C., 2020. The impact of Active Labour Market Policies on health outcomes: a Scoping review. *Eur. J. Public Health* 30, 36–42.

<https://doi.org/10.1093/eurpub/ckz026>

Reed, H., Lansley, S., 2016. Universal Basic Income: An idea whose time has come?

Ross, C.E., Mirowsky, J., 1995. Does Employment Affect Health? *J. Health Soc. Behav.* 36, 230–243.

<https://doi.org/10.2307/2137340>

Ruckert, A., Huynh, C., Labonté, R., 2018. Reducing health inequities: is universal basic income the way forward? *J. Public Health* 40, 3–7.

Schmillen, A., Umkehrer, M., 2017. The scars of youth: Effects of early-career unemployment on future unemployment experience. *Int. Labour Rev.* 156, 465–494.

<https://doi.org/10.1111/ilr.12079>

UNICEF, 2020. Family-friendly policies and other good workplace practices in the context of Covid-19: Key steps employers can take.

Wulfgramm, M., 2014. Life satisfaction effects of unemployment in Europe: The moderating influence of labour market policy. *J. Eur. Soc. Policy* 24, 258–272.

<https://doi.org/10.1177/0958928714525817>

Wulfgramm, M., 2011. Can activating labour market policy offset the detrimental life satisfaction effect of unemployment? *Socio-Econ. Rev.* 9, 477–501.

