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The effects of social protection policies on health inequalities: evidence from systematic reviews

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Abstract

Background

The welfare state distributes financial resources to its citizens – protecting them in times of adversity. Variations in how such social protection policies are administered have been attributed to important differences in population health. The aim of this systematic review of reviews is to update and appraise the evidence base on the effects of social protection policies on health inequalities.

Methods/design

Systematic review methodology was used. Nine databases were searched from 2007 to 2017 for reviews of social policy interventions in high-income countries. Quality was assessed using the Assessment of Multiple Systematic Reviews 2 tool.

Results

Six systematic reviews were included in our review, reporting 50 unique primary studies. Two reviews explored income maintenance and poverty relief policies and found some, low quality, evidence that increased unemployment benefit generosity may improve population mental health. Four reviews explored active labour market policies and found some, low quality evidence, that return to work initiatives may lead to short-term health improvements, but that in the longer term, they can lead to declines in mental health. The more rigorously conducted reviews found no significant health effects of any of social protection policy under investigation. . No reviews of family policies were located.

Conclusion

The systematic review evidence-base on the effects of social protection policy interventions remains sparse, of low quality, of limited generalisability (as the evidence base is concentrated in the Anglo-Saxon welfare state type), and relatively inconclusive. There is a clear need for evaluations in more diverse welfare state settings and particularly of family policies.

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Background

The *welfare state* relates to post-World War Two government measures for the provision of key services and social transfers including the state's role in education, health, housing, poor relief, social insurance, and public health policy in high-income countries [1]. By shaping policies related to healthcare, public health and social policy (e.g. cash transfers, housing and education), governments can influence the social determinants of health [2]. Welfare state provision varies extensively across Europe, and much previous research has made use of welfare state regime typologies to understand health inequalities with respect to the social determinants of health [3-5]. Social protection and cash transfers, which are a key components of the welfare state, therefore also vary widely. Liberal regimes, such as the UK, Ireland and the United States, are characterised by minimal state provision of welfare, modest and restricted social transfers and a heavy reliance on the private sector. Conservative regimes include Germany, France and Austria are distinguished by status differentiating welfare benefits and a high role for the third sector in provision. The Social Democratic regimes found in the Scandinavian countries are characterised by universalism, whereby the state has promoted social equality through comparatively generous social transfers and a commitment to full employment and income protection [6]. Countries such as Italy, Greece, Portugal and Spain, form a fourth 'Southern' regime which is characterised by a fragmented system of welfare provision and a strong emphasis placed on the family. The differing social protection levels provided by these regimes have to a greater or lesser extent mediated the impact of the social determinants of health – reducing the effects of individual market position on health [3]. Variations in how the welfare state is administered has been attributed to important differences in health outcomes [7]: countries characterised by universalistic policies (such as Sweden), have been found to have higher life expectancy, lower mortality rates across all socio-economic groups, and lower infant mortality rates [8-11]. However, comparative research examining how differences in the magnitude of health inequalities vary by welfare state has not found consistent evidence of lower health inequalities in the more extensive welfare states – this observation has been termed the Nordic public health puzzle [7, 11].

It has since been suggested that focusing on specific policy areas and social determinants, rather than welfare state regimes as a whole, will enable a deeper understanding of how particular national policies impact on health inequalities [12], as even within countries with similar welfare principles, policies will not necessarily be organised in the same way or even homogeneously across different policy sectors (for example, the UK is in principle more social democratic in terms of health care services but liberal in terms of social protection) [13, 14]. The aim of this review of systematic reviews (also called an umbrella review) is therefore to identify and synthesise the recent systematic review level evidence-base on the effects of social protection policies on health inequalities in Europe by identifying the impact of specific social protection interventions on health inequalities [11]. Social protection policies include income maintenance and poverty relief (e.g. cash transfers paid on the grounds of sickness or disability, unemployment, old age, or to specific groups such as lone parents) as well as active labour market policies (ALMPs) [1] (such as welfare to work policies for people with a disability or chronic illness, the unemployed, lone parents as well as workfare [15]) and family policies (such as parental leave or child support benefits). The review will therefore help to establish what - if any - effects specific welfare state policies have on health inequalities and, most importantly, identify potentially effective interventions that could be implemented to reduce health inequalities across European countries.

Bambra and colleagues [2] undertook one of the first reviews of this kind examining evidence from systematic reviews of the health effects of policies based on the wider social determinants of health – including social protection policies. Their review (which conducted searches up to April 2007), identified only a small systematic review evidence base that examined the effects of policies based on the social determinants of health in reducing health inequalities. In terms of social protection policies (income maintenance and poverty relief; ALMPs and family policies), just three reviews were

identified which is insufficient to make any firm conclusions. However, there has been an increasing focus on the effects of social protection on health inequalities in light of the financial crisis and austerity over the last 10 years [16], so our new review is timely.

Methods

Design

Overviews of systematic reviews – are a well-established methodology in public health research [2, 17-20]. They build on the strengths of individual reviews and add scale by integrating the findings of multiple reviews together [21]. The aim of the review was to understand the effects of welfare state social protection policies on health inequalities amongst children and adults in high-income and EU-28 member countries. The review is registered with PROSPERO, the International Prospective Register of Systematic Reviews (registration number: CRD42017080698). A completed PRISMA checklist is also included in Appendix S1.

Inclusion criteria

Following standard evidence synthesis approaches, the inclusion criteria for the review were determined *a priori* in terms of PICOS (Population, Intervention, Comparison, Outcome and Study design; [22]).

- **Population:** Children and adults (all ages) in any high-income country (defined as OECD members and additional EU-28 members not OECD membersⁱ). The population was kept purposively broad to allow the widest range of literature to be identified.

- **Intervention:** Social protection policies delivered by the welfare state namely: income maintenance and poverty relief (e.g. cash transfers paid on the grounds of sickness or disability, unemployment, old age, or to specific groups such as lone parents) as well as ALMPs (such as welfare to work, workfare) and family policies (such as parental leave or child support benefits). The focus on this review is the state's involvement with administering the welfare state through social protection policies. In reality, many organisations may distribute cash protection, including the voluntary sector, mutual aid associations, employers, trade unions and private sector companies. However, only policies mandated by or funded by local or national government organisations (whoever delivers them) are included.
- **Comparison:** We include systematic reviews that include studies with and without controls. Acceptable controls include randomised or matched designs.
- **Outcomes:** Socioeconomic health inequality outcomes. Health measures include (but are not limited to) morbidity, health behaviours, mortality, accidents, injuries, and we will consider outcomes related to health inequalities in terms of socio-economic status (defined as: individual income, wealth, poverty, education level, employment or occupational status, welfare benefit receipt; as well as area-level economic indicators and ethnicity given the strong relationship between ethnicity and lower SES particularly in the USA [23]). When available, cost effectiveness data was also collected.
- **Study design:** Only systematic reviews are included in the analysis. Following the methods of previous umbrella reviews [2, 24], publications needed to meet the two mandatory criteria of Database of Abstracts of Reviews of Effects (DARE): (i) that there is a defined review question (with definition of at least two of the participants, interventions, outcomes or study designs) and (ii) that the search strategy included at least one named database, in conjunction with

either reference checking, hand-searching, citation searching or contact with authors in the field.

A rigorous and inclusive literature search for existing systematic reviews was conducted, incorporating reviews that included a wide range of qualitative (e.g. focus groups, semi-structured and unstructured interviews, and ethnographic methods) and quantitative (e.g. randomised and non-randomised controlled trials and cluster trials, un/controlled prospective and retrospective cohort studies, prospective repeat cross-sectional studies, interrupted time series) study designs. Relevant quantitative and qualitative data was included. Data from associational studies (e.g. single cross-sections) and modelling and simulation studies (i.e. not studies of 'real world' implementation of policies) were not included.

Search strategy

As this updates the work of Bambra and colleagues (who conducted searches up to April 2007) [2] the searches ran from May 2007 to October 2017 (to ensure only new material was captured in this updated review). Nine databases were searched (host sites given in parentheses): Cochrane Library (includes Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, Cochrane Methodology Register, Database of Abstracts of Reviews of Effects, Health Technology Assessment Database, NHS Economic Evaluation Database; Wiley), Campbell Collaboration Library of Systematic Reviews (The Campbell Library), EconLIT (EBSCO), Applied Social Sciences Index and Abstracts (ASSIA; ProQuest), International Bibliography of the Social Sciences (IBSS; ProQuest), Sociological Abstracts (ProQuest), MEDLINE (Ovid), EMBASE (Ovid), PsycINFO (Ovid).

Searches were tailored to the specific host site (full search strategies are shown in Appendix S2). To complement searches, citation follow up from the bibliographies and reference lists of all included articles was conducted. No language restrictions were applied. Searches were limited to peer-

reviewed publications only. Authors were contacted to obtain any relevant information that was missing. If reviews did not have sufficient data, they were excluded from further analysis.

Screening and Data extraction

The initial screening of titles and abstracts using EndNote was conducted by three reviewers (FHB, KT, VM, with a random sample of at least 10% (in keeping with previous successful reviews [25, 26]) checked by both reviewers to ensure agreement). Agreement between the reviewers was 98%. Full text screening was conducted in duplicate by three reviewers (KT and FHB/VM) and discrepancies were resolved through discussion, including the project lead (CB) if necessary. The methods and main findings were extracted using a bespoke data extraction form (detailed in Appendix S3). Data extraction was conducted by KT, and checked in full by FHB. Any discrepancies on selection and extraction were resolved through discussion between the lead reviewers (KT and FHB) and the project lead (CB).

Quality appraisal and data synthesis

The quality of each review was determined using the updated version of the Assessment of Multiple Systematic Reviews: AMSTAR 2 [27], which was included as part of the data extraction form. The AMSTAR 2 enables appraisal of systematic reviews of randomised and non-randomised studies and asks questions on: 'a priori' design, duplicate study selection and data extraction, literature search details, status of publications included, included and excluded study reference lists, characteristics of included studies, risk of bias assessment of included studies, methods of combining findings, assessment of publication bias and conflict of interest. The overall rating, or confidence in the results, of a review is determined by identifying weaknesses in critical domains [27].

Data extraction only utilised the information from the systematic review (and any relevant supplementary material); we did not extract data from the original primary studies. The systematic

reviews were narratively synthesised by summarising findings from each review based on relevant primary studies. Effect sizes from meta-analyses were considered when interpreting findings, along with narrative summaries. In the results and discussion sections that follows, *primary studies* refers to empirical research studies evaluating the impact of a particular intervention. We typically use systematic review (or simply *review*) to highlight the conclusions of a particular systematic review, that often summarise the evidence of primary studies for a particular domain/intervention.

Results

A total of 10,149 citations were retrieved from the nine databases searched and downloaded to Endnote. Deduplication using Endnote resulted in 6,041 unique citations. Ninety-four papers were assessed for eligibility. Figure 1 details the process of inclusion and exclusion of studies from the review and the reasons for exclusion at the full paper stage (n = 88) are available in Appendix S4. In total, six systematic reviews were included in our review, reporting 50 unique primary studies. Due to the nature of social protection policy interventions, all of the interventions included in this umbrella review followed a 'targeted' approach to reducing health inequalities (providing assistance to at-risk groups only), rather than universal interventions that may show differential effects by socioeconomic position [28]. In terms of the types of interventions, two related to income maintenance and poverty relief [29, 30] and four concerned ALMPs [31-34]. No relevant equality reviews were located for family policies. Studies were located in the USA, Canada, Australia, New Zealand, Japan and a number of European countries (including the UK). The earliest review was published in 2011 and the latest in 2017. Using the AMSTAR2 tool, no reviews were rated as high in overall confidence in the results of the review. The Cochrane reviews of Gibson *et al.* [34], Lucas *et al.* [32] and Pega *et al.* [29] scored best with low to moderate scores. The remaining reviews were scored as critically low as all had more than one critical flaw, mainly the lack of a registered protocol, no listing and justification of excluded studies, and no consideration of quality or risk of bias of the primary studies when interpreting results

(Appendix S5). The reviews are narratively synthesised below by intervention type. The results are summarised in Tables 1 and 2.

Income maintenance and poverty relief

These policies refer to cash transfers or in work support (e.g. tax credits) paid on the grounds of sickness or disability, unemployment, old age, or to specific groups such as lone parents. Two reviews [29, 30] of the health inequality effects of income maintenance and poverty relief were included and the results are summarised below and in Table 1.

Pega et al. [29] conducted a review investigating the role of in-work tax credits for families. The authors found five relevant studies which were synthesised narratively. All studies were conducted in the USA and examined the role of in-work tax credits; specially the health impact of Earned Income Tax Credit – a refundable tax credit for low- to moderate-income working individuals and couples, particularly those with children. The review found no evidence for a health effect of in-work tax credit for families (except for mixed evidence for tobacco smoking), but authors concluded that the evidence found was small and methodologically limited with a high risk of bias. The review scored low using AMSTAR 2 as the risk of bias assessment used did not cover all recommended domains (Appendix S5).

The realist systematic review by O’Campo et al. [30] investigated the impact of unemployment insurance on poverty and health. Four relevant primary studies were included in the review - conducted in a number of European countries, Japan and the USA. They all investigated the role of unemployment benefit generosity on health. Improvements in mood disorders and wellbeing were strongly linked to unemployment generosity thought to be attributed to lower financial strain. One of

the studies, however, concluded that while unemployment generosity provides some degree of financial replacement, it does not buffer against the loss of status, self-confidence and security that comes from job loss. The confidence in the findings of the review are rated as critically low, with four of the applicable five critical domains not being met (Appendix S5).

[TABLE 1 inserted here]

Active labour market policies (ALMPs)

ALMPs [1] include welfare to work policies for people out of the labour market – those with a disability or chronic illness, the unemployed, lone parents – and includes workfare. Four reviews of the health inequality effects of ALMPs were included [31-34] and the results are summarised below and in Table 2.

Clayton et al. [31] conducted a review investigating return to work initiatives for people with a disability or long-term health condition in the UK. Five primary studies had relevant health outcomes and each intervention examined the effects of individualised support such as work-focused interviews, assistance with benefit claims, advice on in-work benefits, and employment training and advice. Only one of the studies found any significant changes in health: a small reduction (-2.9%) in the proportion of participants on the 'Pathways to Work' programme was noted after 10 months but not after 18 months [31]. The other studies – both quantitative and qualitative - found no health impacts of the interventions. The overall confidence in the results of this review is considered critically low based on AMSTAR 2, as more than one critical flaw was identified (see Appendix S5), including the lack of consideration of the quality or risk of bias of the primary studies in the interpretation of results.

The review by Lucas et al. [32] set out to assess the effects of financial and ALMP interventions for families on child health and psychosocial outcomes. Nine primary studies conducted in the USA and Canada were identified, the majority of which assessed the role of welfare reforms which combined cash incentives (e.g. negative taxation, income supplements) with work support or requirement to work (ALMPs) along with other changes to provision of welfare payments. Meta-analyses showed no overall effects on child health, measures of child mental health, or emotional state. There was tentative evidence that sanctions and work requirements in the interventions imposed additional stresses on families and had the potential to increase family breakdown and child abuse. The overall confidence in the results of this review is considered moderate based on AMSTAR 2 as it contained no critical flaws but some non-critical ones (Appendix S5). The review authors suggested that conclusions were limited by the fact that most of the interventions had only small effects on total household income (typically less than \$50 per month).

The review of qualitative studies by Campbell et al. [33] examined the health and wellbeing effects of mandated welfare to work programmes on lone parents. A total of 16 studies, conducted in the USA, Canada, Australia, New Zealand and the UK, were included. Participation in welfare to work was associated with increased stress, fatigue and depression. Welfare to work appeared to influence health through reduced control over the nature of employment and care of children. Access to social support allowed some lone parents to manage the conflict associated with employment, and to increase control over their circumstances, with potentially beneficial health impacts. The overall confidence in the results of this review is considered critically low based on AMSTAR 2, as more than one critical flaw was identified (see Appendix S5), including the lack of consideration of the quality or risk of bias of the primary studies in the interpretation of results.

Gibson et al. [34] conducted a review of quantitative studies investigating the role of welfare to work in improving lone parent and child health outcomes. The review which identified 12 studies, from the USA, Canada and the UK, performed a series of meta-analyses of maternal and child health from studies covering different follow-up periods. Overall the review suggested that welfare to work does not have important effects on health. The authors suggest that it is possible that effects on health were small because there was not much change in employment or income. The overall confidence in the results of this review is considered critically moderate with some weaknesses but no critical flaws (see Appendix S5).

[TABLE 2 inserted here]

Discussion

Effects of Social Protection Policies on Health Inequalities

Six systematic reviews were included in this umbrella review, comprising 50 unique primary studies. This work updates the review by Bambra and colleagues [2] who identified three studies, which related to social protection policies. Findings from the original review were mixed: one review [35] examined an income maintenance and poverty relief policy and found that welfare rights advice services had short term improvements on mental health outcomes amongst older people. The remaining two studies examined ALMPs [36, 37] and the findings in regards to health were inconclusive.

Our updated analysis has found an additional six reviews, but the evidence is still mixed and inconclusive. We found no studies of family policies (such as parental leave or child care) – something which is a significant evidence gap given the increasing awareness of the potential importance of such interventions for health and health equity [38, 39]. The two reviews examining income maintenance

and poverty relief policies [29, 30] found financial support for poor families had no significant effects on child health but a strong relationship between unemployment generosity and improved mental health as a result of unemployment insurance. In terms of ALMPs, the four reviews included here [31-34] suggest no long term effects on health or negative health effects: one review found only small and short term health effects of return to work initiatives for people with a disability or long-term condition [31]; a quantitative review (and meta-analysis) of interventions for families found no effects on child health [32]; a qualitative review found adverse health effects (increased stress, fatigue, and depression) on lone parents [33]; whilst a quantitative review (including meta-analysis) concluded that programmes for lone parents do not have important health effects [34]. Some review authors commented that the lack of any health effect of ALMPs may have been due to the fact that the increases in income that the programmes provided were only very small [32, 34] – this is potentially also supported by the benefit generosity review which found that larger benefit payments led to better health outcomes [30].

A key issue that is not clear from the current review evidence base is the different mechanisms through which different aspects of social protection can impact on health and health inequalities. Income maintenance and poverty relief policies would be expected to have different health effects than ALMPs. Drawing on the material theory of health inequalities, it would be hypothesised that income maintenance and poverty relief policies would positively impact on the health of the most vulnerable (those experiencing low or no income due to sickness or disability, unemployment, old age, or lone parents) – or at least prevent deterioration of their health - by increasing their income [40]. This in turn would reduce - or at least prevent any increase in - health inequalities. However, there are clear caveats to this as it has also been demonstrated - both epidemiologically and in terms of the O'Campo et al. [30] systematic review included here - that benefit generosity matters in terms of the health protection effects of income maintenance and poverty relief policies. Welfare systems that

provide only minimal levels of social welfare that mean that recipients still remain in poverty (such as in the Anglo-sphere countries of the USA, Canada, Australia, New Zealand and the UK) do not protect the health of recipients to the same extent as those that provide more generous levels of income support (e.g. in the Nordic countries) [8]. Future research should examine how changes in benefit generosity impact on the health of the most vulnerable in different welfare contexts.

In terms of ALMPs, then the underpinning mechanisms in terms of health protection or improvement would be based around more psychosocial theories of health inequalities [40]. Here it will be theorised that by being supported to be trained and supported back in to the labour market, participants would feel more valued, less stigmatised and be more optimistic and feel more in control about their future [34]. This in turn would be expected to have positive knock-on effects on health, particularly in terms of mental health and well-being indicators. Further, in material theory terms, if participation in ALMP led to increased income then further improvements in health would also be anticipated [34]. Again though, clearly the design and implementation of ALMP matter in terms of the potential health effects. ALMP that are compulsory, coercive, involve sanctions, or are stigmatised, will be expected to have less positive health impacts than those which are voluntary and less coercive or are accompanied by more generous welfare benefits [34]. The reviews examined here though cannot be used to test these potential mechanisms because they all relate to interventions conducted in the Anglosphere (the USA, Canada, Australia, New Zealand and the UK) where ALMP are at the more coercive end of the scale. Future research therefore needs to ensure that different types of ALMP interventions are examined comparatively.

Although the systematic review evidence base on the effects of social protection policy interventions still remains small, our work advances the comparative public health research literature - which has

been dominated by descriptive studies of the general association between welfare state types and health inequalities - by examining evaluations of actual interventions in a specific welfare state policy domain. In a context of economic crisis that has affected Europe, the capacity of social protection systems to avoid or contain impoverishment of the population in economically adverse situations that are not usually short time stages is largely unknown. Political decisions in this area do not have the possibility of being based on the evidence given the scarcity of knowledge and evaluation. On the other hand, there is no knowledge about family policies (such as parental leave or child care) although it is known that the child population is a priority population for international and national development policies and that it has become impoverished. For example, it is estimated that 26.9% of children in the EU-28 were at risk of poverty or social exclusion [41]. It is essential therefore that further research focuses on family policies and how more generally income maintenance and ALMPs can affect the outcomes of children in the short and long term.

Strengths and limitations

The review has many strengths, using an established methodology, following a strict protocol, building on previous work and undertaking a detailed and comprehensive international literature search for qualitative and quantitative reviews, as well as conducting quality appraisal using a validated tool – AMSTAR 2. However, there are also several limitations to our umbrella review as a result of the nature of the evidence base. A major limitation of the included reviews was their design as three had critical flaws and even the three Cochrane reviews had non-critical flaws. Future reviews should more consistently and transparently describe their methodologies using a standardised approach, such as PRISMA [42]. A lack of appropriate risk of bias assessment of the primary studies was identified across most of the included reviews and therefore, the quality of the primary studies is generally unknown. Where this was assessed, primary studies were commonly found to have a high risk of bias. Further, the small size of the evidence base and the lack of reviews of family policies is another limitation in

terms of drawing strong conclusions [43]. All studies measured health inequalities in terms of the health of the most vulnerable (rather than on the social gradient in health [40]). Many of the primary studies were conducted in the USA or other liberal welfare state regime countries - the UK, Ireland, Canada and Australia, so we acknowledge that interventions may work differently in other welfare contexts as noted above. Another limitation, common to all umbrella reviews is that we have only synthesised the results of systematic reviews and the relevant primary studies included within them. It is very likely that additional primary evaluations have been conducted either after the systematic reviews have been completed, or perhaps they did not fit the criteria for inclusion in the systematic reviews. Furthermore, it is possible that there is publication bias (that negative results are less likely to be published) with regards to the primary studies. Positive intervention effects in primary studies are compounded in systematic reviews and umbrella reviews as the primary study evidence base may be skewed. This umbrella review is therefore a synthesis of the results of systematic reviews not a synthesis of all primary evaluations of such interventions. It however represents the best available review level evidence currently available.

Conclusions

Understanding the role of the welfare state in the social patterning of health is a longstanding theme within comparative public health research. However, the majority of work has examined general associations between welfare state types and health inequalities. There has been very little research examining the effects of specific welfare state policies on health inequalities. This review of existing systematic reviews has sought to fill this gap by identifying the effects of specific social protection policy interventions on health inequalities. The systematic review evidence-base, although it has grown over the last decade, remains sparse and of low quality. We found evidence of beneficial (mental) health effects for more generous unemployment benefits but no long term health effects or negative health effects for ALMPs. We found no reviews of family policies. Further work is required to

explore the quality of the primary studies, improve the quality of the evidence syntheses, examine underpinning causal mechanisms and explore why effects are not maintained in the long-term.

Competing interests

The authors declare that there is no conflict of interest.

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Authors' contribution

FHB, CB and KT led the drafting and revising of the manuscript with input from VM, JC, TE and DGG.

All authors read and approved the final manuscript. CB is the guarantor of the review.

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Table 1: Summary of systematic reviews exploring the effects of income maintenance and poverty relief policies

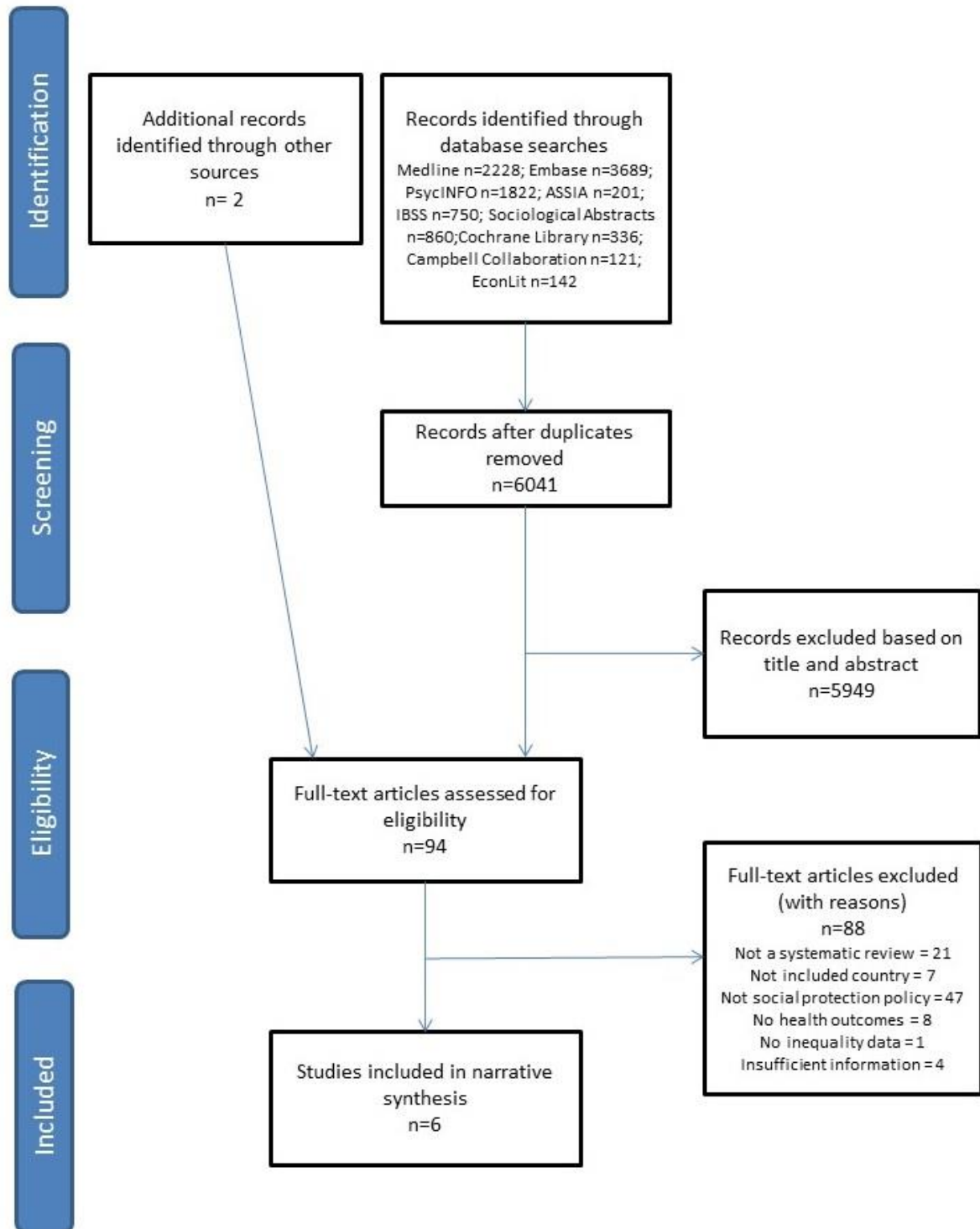
Study	No. of relevant studies	Context (country, search timeframe)	Population	Intervention(s)	Summary of results	AMSTAR 2 rating
Pega et al. [29]	5 (of 5)	USA; inception to 2006	Working age adults	Earned Income Tax Credit (EITC) – refundable tax credit for low- to moderate-income working individuals and couples, particularly those with children.	No evidence for an effect of in-work tax credit for families on health status (except for mixed evidence for tobacco smoking).	Low
O'Campo et al. [30]	4 (of 33)	OECD countries; 2000-2013	Unemployment benefit recipients	Unemployment benefit generosity.	Evidence suggests that there is a strong relationship between unemployment generosity and improved mental health (well-being, mood disorders, self-confidence) due to unemployment insurance which the authors consider to be a consequence of lower financial strain.	Critically low

Table 2: Summary of systematic reviews exploring the effects of active labour market policies

Study	No. of relevant studies	Context (country, search timeframe)	Population	Intervention(s)	Summary of results	AMSTAR 2 rating
Clayton et al. [31]	5 (of 42)	UK; 2002 - 2007	Incapacity related benefit recipients	Personal advisor, work-focused interviews, job search activities, training, employment advice.	<p>ONE: No statistically significant difference in probability of sick/disabled clients leaving Incapacity Benefits between intervention and comparison areas.</p> <p>New Deal: Benefit reciprocity decreased for both existing claimants and new claimants.</p> <p>Pathways: A slight reduction in the probability of claiming Incapacity Benefits and reporting a limiting health problem 10.5 months after intervention (disappeared by 18 months). Qualitative work found that claimants did not feel the programme had any impact on their health.</p>	Critically low
Lucas et al. [32]	8 (of 9)	USA and Canada; Various to 2006	Poor families	Welfare reform for poor families to improve the circumstances for children.	No effect was observed on child health, measures of child mental health, or emotional state. Non-significant	Moderate

					effects favouring the intervention group were seen for child cognitive development and educational achievement.	
Campbell et al. [33]	16 (of 16)	New Zealand, Canada, USA, UK and Australia; 1950 - 2009	Lone parents	Mandatory Welfare to Work interventions (i.e. those with mandatory eligibility criteria).	Adverse health impacts, such as increased stress, fatigue, and depression were commonly reported, though employment and appropriate training was linked to increased self-worth.	Critically low
Gibson et al. [34]	12 (of 12)	USA, Canada, UK; inception to 2016	Lone parents	Welfare to Work interventions designed to encourage or require lone parents to look for work. Earnings top-ups, stopping or reducing benefits, training, helping to pay for child care and limits on how long benefits are paid have all been used to increase lone parent employment.	Welfare to Work does not have important effects on health.	Moderate

Figure 1: PRISMA flow diagram



ⁱ The World Bank classifies as high-income countries those countries with GNI per capita income of \$12,736 or more for the current 2016 fiscal year. Further details can be found at: <http://data.worldbank.org/income-level/OEC> The list of OECD countries includes Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Israel, Japan, Korea Republic, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom and United States. Additional EU-28 countries not included on the previous list were also added (including Bulgaria, Croatia, Cyprus, Latvia, Lithuania, Malta and Romania).