Creating Hope Together

Scotland's Suicide Prevention Strategy 2022-2032

A rapid review of policy interventions to address social determinants of suicide

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Executive summary

- The link between social determinants of health and suicide is well-established. Evidence suggests that national or population-level interventions or policies addressing social determinants are effective in preventing suicide. However, there has been no review of global policy interventions addressing social determinants of suicide to date.
- The current review addressed this gap in the literature by conducting a scoping review of policy interventions addressing social determinants of suicide from 2013-2023. Twenty-six studies and three reviews met inclusion criteria and their findings presented and discussed.
- Policy interventions were grouped by social determinants of suicide. Most included studies and reviews focused on policy interventions targeting income and social protection policies, unemployment and job security, and access to health services.
- We found that policy interventions targeting income and social protection policies (e.g., increased minimum wage) were largely effective in reducing suicide rates. Policy interventions focused on unemployment and job security were only effective for specific subgroups; most notably policies were protective for men but not for women. The findings were mixed for health service and housing policy interventions.
- There was a lack of research on policy interventions addressing education, childhood development and discrimination and no policy interventions addressing structural conflict and working life conditions. Policy interventions addressing these social determinants of suicide should be a priority for future research. In addition, no studies were conducted in in the UK. Therefore, future research is needed to examine the effectiveness of policy interventions addressing social determinants of suicide in UK and Scottish populations.

1. Introduction

The Scottish Government launched the National Suicide Prevention Strategy 'Creating Hope Together' (2022-2025) in 2022. A major focus of this strategy is to build a whole-of-government and whole-of-society approach to address the social determinants of suicide (supported by local policies and action; Outcome 1, Action 1.1), with the goal of identifying potential opportunities for linking suicide prevention to government-led policies and interventions. In order to support the delivery of Action 1.1, the Academic Advisory Group (AAG) was commissioned to conduct a scoping review exploring worldwide policy interventions addressing social determinants of suicide since 2013.

Social determinants of health and suicide

Social determinants of health are defined by the World Health Organisation (WHO) as "the conditions under which people are born, grow, work, live and age, and the wider set of forces and systems shaping the conditions of daily life" (WHO, 2023). Addressing social determinants of health is vital to improve wellbeing and reduce longstanding inequities (Braveman & Gottlieb 2014; WHO, 2023). Given the well-established link between social determinants (e.g., income inequality, unemployment, and education; e.g., Machado et al., 2015; Milner et al., 2013; Norström & Grönqvist, 2015) and suicide, there is a need for more universal or population-level interventions. There is some evidence that national or population-level interventions or policies addressing social determinants are effective in preventing mental health problems, including suicide (McAllister et al., 2018; Shah et al., 2021). However, to our knowledge, there has been no review of global policy interventions which address the social determinants of suicide. The purpose of this scoping review, then, is to fill this knowledge gap.

Research questions:

1. What policy interventions have been conducted worldwide addressing the social determinants of suicide?
2. What is the evidence of the impact of these policy interventions on the incidence of suicide?

2. Methods

Ethical approval was not required for the current study.

Search strategy

The current review follows the Arksey and O'Malley (2005) framework, which includes 1) specifying the research question, 2) identifying relevant literature, 3) selecting studies, 4) mapping out the data, and 5) summarising, synthesising and reporting the results. The following databases were systematically searched: CINAHL, Medline, and PsycINFO. The original search was conducted on 10th January 2024 and was restricted to English language, peer-reviewed articles, published between 2013-2023. Separate searches were conducted independently for each database using subject headings from three categories: (i) policy, (ii) social determinants and (iii) suicide. The final search involved combining searches based on these three constructs (see Appendix 1, 2 and 3).

Inclusion criteria

For inclusion in the review, a study had to: (a) be a peer-reviewed primary study or review; (b) focus on policy interventions addressing social determinants of suicide; (c) examine death by suicide as an outcome (d) be published in English language and (e) be published between 2013-2023. Case studies, commentaries, letters to editors, conference abstracts, reports, book chapters and dissertations were excluded from the review.

Screening

The first author assessed the retrieved studies' titles and abstracts for inclusion. In cases where it was unclear if a study met the inclusion criteria, the study was retained to be screened by full-text. The first author screened all remaining studies by full-text. To check inter-rater reliability, a member of the research team independently screened a random 10% sample of title and abstracts and a random 10% sample of full-texts, achieving 79% and 80% concordance, respectively. All discrepancies in decisions about studies to be included or excluded were resolved following discussion.

Data extraction

Data relating to included studies were extracted by the first author and a random 10% sample was cross-checked by another member of the research team. Extracted data included author name, publication year, participant characteristics, study design, intervention type (including social determinants targeted), comparison group, outcome measure (measure of suicide deaths), and results. Participant characteristics extracted included age (mean and standard deviation [SD], % female and ethnicity. Study characteristics extracted included the outcome measure for death by suicide (including source of information and whether/ which International Classification of Diseases codes were used), and the study results (see Table 1 and 2).

3. Results

As shown in Figure 1, 828 articles were retrieved from the initial search. Search results from each database were exported to Endnote and duplicates were automatically removed, with any remaining duplicates manually removed by the first author. Following deduplication, there were 763 articles. After applying eligibility criteria to the 763 articles at the title and abstract screening stage, 105 articles remained. The full texts of 105 articles were then screened. Following this, 25 articles which met the inclusion criteria were selected for

review. Four additional articles were identified through handsearching. This resulted in a total of 29 articles included in the final set.

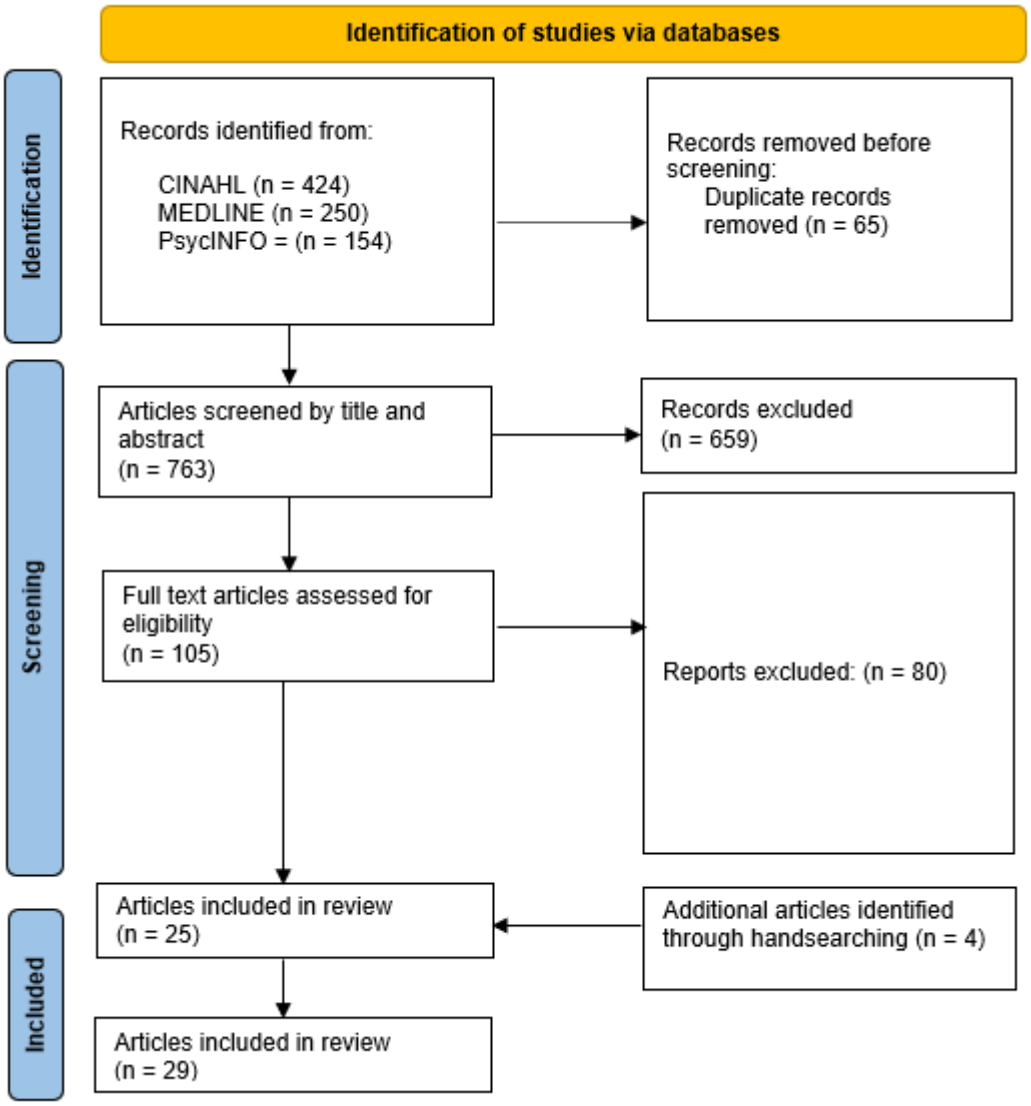

Figure 1. PRISMA diagram.

3.1 Study characteristics of policy interventions

The majority of included articles were conducted in the United States (US; N = 14), with other studies conducted in Brazil (N = 2), Italy (N = 2), Lithuania (N = 1), the Netherlands (N = 1), and Indonesia (N = 1). The remaining eight articles were each conducted across multiple countries. Most studies were observational, examining retrospective data. Suicide deaths were identified using various databases (e.g., held by the US Centers for Disease Control and Prevention) and were mostly classified using the International Classification of Diseases (ICD) codes. Most included articles examined income and social protection policy interventions (N = 10), unemployment and job security policy interventions (N = 4), and access to healthcare interventions (N = 4). Additional policy interventions were focused on housing, food insecurity, discrimination, education, and child development. Some included policy interventions addressed multiple social determinants of health. While not directly targeting social determinants of health, we also included studies focused on alcohol and smoking. These were included given the prevalence of alcohol and smoking in Scotland (Scottish Health Survey, 2021) and the well-established link between social deprivation and alcohol and smoking (Bellis et al., 2016; Shortt et al., 2015). Additionally, three reviews were identified (Kim, 2018; Shand et al., 2022; Xuan et al., 2016).

3.1.1 Income and social protection

Nine studies and one review examined the impact of various income and social protection policies on suicide deaths (Alves et al., 2018; Antonakakis & Collins, 2015; Christian et al., 2019; Dow et al., 2020; Gertner et al., 2019; Kaufman et al., 2020b; Kim, 2018; Machado et al., 2022; Rambotti et al., 2020; Toffolutti & Suhrcke, 2019). Three studies found that the implementation of a cash transfer programme significantly decreased suicide rates (Alves et al., 2018; Christian et al., 2019; Machado et al., 2022). Three studies found

that higher minimum wages were associated with decreased suicide rates (Dow et al., 2020; Gertner et al., 2019; Kaufman et al., 2020b). In two studies, however, these effects were restricted to those with lower educational attainment (Dow et al., 2020; Kaufman et al., 2020b). Two studies found that earned income tax credit significantly decreased suicide rates over time in the US (Dow et al., 2020; Rambotti et al. (2020).

Two longitudinal studies of countries in the European Union (EU) found that fiscal austerity (e.g., a cut in government spending) significantly predicted suicide deaths (Antonakakis & Collins, 2015; Toffolutti & Suhrcke, 2019). However, findings were nuanced. For instance, in the overall sample and male only sample, findings were significant across various age groups, particularly for the 65-89 year group, suggesting that males and the 65-89 year group are the most impacted by cuts in government spending. In contrast, fiscal austerity did not have a significant impact upon suicide rates in females, with the exception of an increase in suicide rates one year later in the 25-44 age group (Antonakakis & Collins, 2015). In the study by Toffolutti and Suhrcke (2019), austerity significantly increased suicide rates, however this finding depended on which countries were included. For instance, austerity significantly increased suicide rates when examined in 17 countries (excluding countries that were formerly part of Yugoslavia or the Soviet bloc) and 23 countries (excluding the Baltics, Hungary and Romania), but not in 28 countries. Finally, in a review of 19 studies across different countries, greater implementation of social protection policies (e.g., increase in welfare spending) led to significantly lower suicide rates in 16 studies, while two studies found no association and one study reported mixed findings with suicide rates (i.e., both low and high levels of social protection policies and poverty were associated with increased suicide rates, which varied across countries; Kim, 2018).

3.1.2 Unemployment and job insecurity

Three studies (Kaufman et al., 2020a; Mattei et al., 2019; Mattei et al., 2020) and one review (Shand et al., 2022) examined active labour market programmes and unemployment policies. Kaufman et al. (2020a) reported a non-significant association between the unemployment insurance recipiency rate (i.e., the percentage of unemployed persons who received unemployment insurance) and suicide rates. In addition, the interaction between recipiency rate and unemployment in regular programmes on suicide rates was non-significant. However, effects were protective for specific subgroups only, including men, White Americans, and adults aged 45-54 and 55-64 years. Mattei et al. (2019) found that active labour markets significantly reduced the effect of unemployment on suicide rates over time, among men aged 45-54 years only. Likewise, Mattei et al. (2020) found that social expenditure for unemployment significantly reduced the effect of credit to GDP ratio and suicide over time. In all three studies, effects were protective for men (of specific ages), but not for women (Kaufman et al., 2020a; Mattei et al., 2019; Mattei et al., 2020). In a systematic review of six studies across various countries, Shand et al. (2022) found that government responses to unemployment (e.g., unemployment benefits, spending on active labour market programs and employment protection legislation) were associated with decreases in suicide.

3.1.3 Health services

Four studies examined health service policy interventions in the US (Choudbury & Plemmons, 2023; Hughes et al., 2023; Lang, 2013; Ortega, 2023). Two of these examined health insurance policies in the US over time (Lang, 2013; Ortega, 2023). Lang (2013) found that states enacting laws requiring insurance coverage to include mental health at parity with physical health had decreased suicide rates, relative to states not requiring mental health to be at parity with physical health. Likewise, Ortega (2023) found a non-significant decrease in suicide deaths one to four years following Medicaid expansion, with the largest decrease four

years post-expansion. However, in the fifth year following Medicaid expansion there was no longer a difference between expansion and non-expansion states. Additionally, one longitudinal and one experimental study examined differences in suicide rates between states which implemented prescriptive authority policies (i.e., Louisiana and New Mexico; granting authority for psychologists to prescribe medications) and states which did not (i.e., other US states; Choudbury & Plemmons, 2023; Hughes et al., 2023). Choudbury and Plemmons (2023) found significant increases in suicide rates between states with the implementation of prescriptive authority policies, compared to states without, but only for specific subgroups (e.g., males, white populations, married or single individuals and people aged 35-55 years). In contrast, Hughes et al. (2023) found no significant differences in suicide rates between states with and without prescriptive authority policies, with the exception of an overall decrease in suicide rates in Louisiana.

3.1.4 Housing, basic amenities and the environment

Three studies examined social and housing policy interventions (Lohman et al., 2021; Park et al., 2022; Termorshuizen et al., 2014). Termorshuizen et al. (2014) found that, relative to general population controls, clients of public mental health care, (an authority aimed at prevention and intervention in the case of homelessness in the Netherlands) had significantly increased suicide mortality. However, this was only found in public mental health care clients with no record linkage ('PMHc-', i.e., not in receipt of treatment for a registered psychiatric diagnosis at a local mental health facility), but not public mental health care clients with a record linkage ('PMHc+'). The risk of suicide was increased among clients with a record linkage compared to PMHc- clients, but PMHc+ clients did not have a higher suicide rate compared to controls. The authors speculate that higher suicide rates among public mental health care clients with no record linkage may be due to inadequate diagnosis and treatment of mental health problems. Lohman et al. (2021), examining statewide long-term care

regulations in the US, found no association between the number of long-term care regulations and either overall or long-term care-related suicides. In a study of 27 countries, Park et al. (2022) found that, in countries with larger social housing stocks and greater rent control, the association between housing cost burden and suicide rates was reduced.

3.1.5 Food insecurity

Two studies examined the Supplemental Nutrition Assistance Program (SNAP) which provides food benefits to low-income families in the US and is measured as average monthly persons receiving food stamps (Austin et al., 2023; Rambotti et al., 2020). Both studies found that implementation of SNAP policies was associated with lower suicide rates.

3.1.6 Alcohol

One study and one review were focused on alcohol policies (Lange et al., 2023; Xuan et al., 2016). Lange et al. (2023) found that alcohol control policy enactments in Lithuania did not have a significant effect on suicide rates over time, with the exception that a alcohol policy enactment in 2017 was associated with reduced suicide rates in men. In a review of 17 studies, Xuan et al. (2016) synthesised findings on the effect of alcohol policies (e.g., increase in tax, greater availability of alcohol outlets, and minimum legal working age limits) on suicide across various countries, primarily in the US between 1999-2014, and found a protective effect of restrictive alcohol policies on reducing suicide rates.

3.1.7 Smoking

Grucza et al. (2014) found that smoking policy interventions in the US, including an increase in cigarette tax and smoke-free air, reduced suicide deaths.

3.1.8 Social inclusion and non-discrimination

Cai et al. (2021) found that country income levels were associated with greater female suicide rates through a greater number of discriminatory laws against women in various countries.

3.1.9 Education

DeAngelis and Dills (2021), examining the effects of school choice laws on suicide rates among adolescents (15-19 years), found that suicide rates were lower following the adoption of charter school (i.e., publicly funded schools that run independently from their local district) laws and voucher programmes. However, the results for Individualised Education Plan (i.e., a legal report documenting progress for children with a learning disability)-only voucher programmes were not statistically significant.

3.1.10 Early childhood development

Cramm et al. (2023), examining the relationship between national legislation banning corporal punishment and adolescent suicide rates, found that countries permitting corporal punishment in any setting (i.e., homes, schools, day care and alternative care) and countries permitting corporal punishment in schools alone had higher suicide rates among female adolescents aged 15-19 years, relative to countries which had fully banned corporal punishment. Between eight and 17 years after partially banned corporal punishment and bans of school corporal punishment, suicide rates decreased for males and females. For males, the largest decrease in suicide rates was 13 years following partial bans of corporal punishment and 15 years following bans of school corporal punishment. For females, the largest decrease in suicide rates was 12 years following both partial bans of corporal punishment and bans of school corporal punishment.

Table 1. Summary of the effectiveness of policy interventions addressing social determinants of suicide.

Social determinant of health targeted	Policy intervention	Effectiveness of policy interventions
Income and social protection	Conditional cash transfer programmes	The implementation of a cash transfer programme significantly decreased suicide rates (Alves et al., 2018; Christian et al., 2019; Machado et al., 2018).
Income and social protection	Increased minimum wage.	Increased minimum wages were associated with decreased suicide rates (Dow et al., 2020; Gertner et al., 2019; Kaufman et al., 2020b), however in two of these studies, this finding was restricted to those with lower educational attainment.
Income and social protection	Earned income tax credit.	Earned income tax credit significantly decreased suicide rates over time (Dow et al., 2020; Rambotti et al., 2020).
Income and social protection	Fiscal austerity (i.e., cuts in government spending).	Fiscal austerity significantly predicted suicide deaths, however findings were significant in specific subgroups only (e.g., males) or in specific countries (Antonakakis & Collins, 2015; Toffolutti & Suhrcke, 2019).
Income and social protection	Social protection policies.	A review of 19 studies found that 16 studies of social protection policies (e.g., increase in welfare spending) were associated with significantly lower suicide rates. However, two studies found no association and one study reported mixed findings (Kim, 2018).
Unemployment and job security	Active labour market programs	Active labour markets significantly reduced the effect of unemployment on suicide rates (Mattei et al., 2019; see Shand et al., 2022), however in one study this was for specific subgroups only (e.g., men; Mattei et al., 2019).
Unemployment and job security	Unemployment insurance policies/ social expenditure for unemployment.	Unemployment insurance policies and social expenditure for unemployment were protective against suicide rates, but for specific subgroups only (e.g., men; Kaufman et al., 2020a; Mattei et al., 2020). A review of six studies found government responses to unemployment (e.g., unemployment benefits and employment protection legislation) were associated with decreases in suicide (Shand et al., 2022).
Access to healthcare	Health insurance policies	The enactment of laws requiring insurance coverage to include mental health at parity with physical health was associated with significantly decreased suicide rates (Lang, 2013), however expansion of Medicaid was not associated with significantly decreased suicide rates (Ortega, 2023).
Access to healthcare	Prescriptive authority policies	There was mixed evidence on the effectiveness of prescriptive authority policies. One study found significant decreases in suicide rates for specific subgroups only (e.g., men, white ethnicity; Choudbury & Plemmons, 2023) and one study found no such differences in suicide rates (Hughes et al., 2023).
Housing	Public mental health care clients	Clients of public mental health care had significantly increased suicide mortality (Termorshuizen et al., 2014).
Housing	Long-term care regulations	There was no association between statewide long-term care regulations and either overall or long-term care-related suicides (Lohman et al., 2021).

Housing	Larger social housing stocks and greater rent control.	In countries with larger social housing stocks and greater rent control, the association between housing cost burden and suicide rates was reduced (Park et al., 2022).
Food insecurity	Supplemental Nutrition Assistance Program	Implementation of SNAP policies was associated with significantly lower suicide rates (Austin et al., 2023; Rambotti et al., 2020).
Social inclusion and non-discrimination	Discriminatory laws	Country income levels were significantly associated with greater suicide rates in females through a greater number of discriminatory laws against women (Cai et al., 2021).
Education	School choice laws	The adoption of charter school laws and voucher programs were associated with significantly decreased suicide rates, but Individualised Education plans were not (DeAngelis & Dills, 2021).
Early childhood development	National legislation banning corporal punishment	Countries permitting corporal punishment in any setting and countries permitting corporal punishment in schools alone had higher suicide rates, relative to countries permitting full bans on corporal punishment (Cramm et al., 2023).
N/A Alcohol	Alcohol control policy enactments	Alcohol control policies did not have a significant effect on suicide rates, with the exception of a significant negative association between an alcohol policy enactment in 2017 and suicide rates in men in one study (Lange et al., 2023). However, a review of 17 studies found a protective effect of restrictive alcohol policies (e.g., increase tax) on reduced suicide rates (Xuan et al., 2016).
N/A Smoking	Cigarette tax and smoke-free air.	An increase in cigarette tax and smoke-free air reduced suicide deaths (Grucza et al., 2014).

4. Discussion

This scoping review sought to identify policy interventions that have been conducted worldwide to address the social determinants of suicide and to synthesise evidence on the effectiveness of these policy interventions on suicide. Twenty-nine relevant studies were found. Most studies focused on income and social protection policies, followed by unemployment and health service policies. In contrast, few policy interventions addressing alternative social determinants of health (e.g., education, discrimination, and child development, for example) were identified.

All investigations of social and income protection policy interventions addressing social determinants of suicide, including increased minimum wage, cash transfers, earned income tax credit and health insurance law, were found to be effective in lowering suicide rates. However, in some studies these effects were not universal but dependent upon other factors, such as education level and unemployment rates. For instance, two studies found that increased minimum wage led to decreases in suicide rates in adults who were less educated, but not adults who were highly educated. This finding is unsurprising, however, given the targeting of social and income policies towards specific subgroups (e.g., adults who are less educated and of a lower socioeconomic status).

Three studies and one review examining unemployment and job insecurity policies were also identified, with mixed results. Two longitudinal studies provided support for the role of active labour markets and social expenditure on unemployment as moderators on decreased suicide rates. While Kaufman et al. (2020a) did not find support for the role of unemployment insurance recipiency rate and the interaction between recipiency rate and unemployment, effects were protective for specific subgroups (e.g., men). In line with Kaufman et al. (2020a), Mattei et al. (2019, 2020) found effects to be mainly protective for men, but not for women, indicating that unemployment and job insecurity policies may be

particularly effective in preventing suicide in this subgroup. More research is needed examining gender differences in unemployment policies on suicide rates.

In the four studies examining health service policy interventions, which included enactment of parity laws (i.e., requiring insurance to include mental health at parity with physical health), Medicaid expansion, and the implementation of prescriptive authority policies, findings were mixed. Lang (2013) found that the enactment of parity laws were effective in reducing suicide rates. However, Ortega (2023) found a non-significant decrease on suicide deaths up to four years post Medicaid expansion, which dissipated in the fifth year post expansion. For policy interventions granting prescriptive authority, findings were mixed, with one study finding significant differences in suicide rates for specific subgroups only, and another study finding no significant differences in suicide rates, with the exception of a lower overall trend in suicide rates in Louisiana following implementation of prescriptive authority policies. While findings varied between health service policies, it is important to note that policies targeting prescriptive authority policies likely target different subgroups (e.g., individuals with a diagnosed mental health disorder), relative to policies focused on Medicaid expansion (e.g., low-income families), for example. In addition, all studies examining health services policies were conducted in the US. More research is needed to determine the effectiveness of similar health service policies in other countries.

Finally, relative to policy interventions focused on income and social protection, much less research has examined policy interventions targeting other social determinants of suicide. Nevertheless, all policy interventions included in this review that addressed other social determinants of suicide were found to be effective in lowering suicide rates. Future research should focus on examining the effectiveness of policy interventions addressing other social determinants of suicide, particularly those targeting other key under-researched sociodemographic groups, such as ethnic minorities and children and young people.

4.1. Limitations and future directions

This review has several limitations. First, given time constraints, our search strategy used subject headings only. Therefore, relevant articles that were not retrieved through subject headings may have been missed. Second, the inclusion criteria required studies to be available in the English language. It is possible that relevant studies not written in English may have been excluded, limiting generalisation of the findings. Third, the search was conducted between 2013-2023, therefore relevant studies published prior to 2013 were not retrieved. Fourth, this report was developed with the aim of informing possible suicide prevention approaches in Scotland. However, no included studies specifically focused on UK or Scottish populations. Research examining the effectiveness of policy interventions addressing social determinants of suicide in the UK should be a future priority.

5. Conclusion

This scoping review sought to examine what policy interventions addressing social determinants of suicide have been conducted worldwide and to assess whether they are effective in reducing suicide rates. Findings revealed that several worldwide policy interventions addressing social determinants of suicide have been conducted, most of which have examined income and social protection policies. Policy interventions were found to be effective in reducing suicide rates, although some were only effective for specific subgroups. These findings should be taken into account when considering investment in, and implementation of, future policy interventions addressing social determinants of suicide at the population level.

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Table 2. Study summary table

Author and date	Country	Study type	Policy intervention type	Participants (intervention group where applicable)	Control group	Suicide measure	Study findings
Alves et al. (2018)	Brazil	Ecological, longitudinal	Bolsa Família programme, a Brazilian conditional cash transfer programme. Cash transfers included 70 Brazilian Reals (R$), aimed at families with a monthly income of up to R$ 70.00. 32 Brazilian Reals were granted to families with children, adolescents, pregnant and breastfeeding women, with a per capita household income of ≤ R$ 140.00. Certain conditionalities had to be met, including vaccinations and nutritional surveillance of children <7 years old, and pre-natal care for pregnant/ postpartum women. In education, 85% school attendance for	Municipalities with greater coverage or coverage duration of the Bolsa Familia programme.	Municipalities with less coverage or less coverage duration of the Bolsa Familia programme.	Age-standardised suicide rates for each municipality and year. Suicide is defined as the cause of death recorded as "intentional self-harm" 10th Edition of the International Classification of Diseases (ICD-10), codes X60-X84.	Increased Bolsa Família programme coverage was associated with decreased suicide rates. Suicide rates were significantly lower in municipalities with coverage between 30 and 70% (Crude RR 0.966; CI 95% 0.960, 0.972) and over 70% (Crude RR 0.942; CI 95% 0.936, 0.947) compared with municipalities with low coverage (i.e., less than 30%). The strongest effect was found when in addition to greater municipal coverage (RR 0.942, 95% CI 0.936, 0.947), the duration of the high coverage was maintained for 3 or more years (RR 0.952 95% CI 0.950, 0.954). An increase in coverage duration of the Bolsa Família programme of 70% or more was associated with decreased suicide rates among women, but not men.

			children and adolescents aged 6–15 year olds and 75% attendance for young people aged 16-17 years was required.				
Antonakakis & Collins (2015)	Eurozone periphery countries: Greece, Ireland, Italy, Portugal and Spain	Longitudinal (Time series)	Fiscal austerity	Aged 10-89 years.	N/A	Suicide deaths based on the following ICD codes, ICD-7 codes E963 and E970-E979, ICD-8 and ICD-9 codes E950-E959, ICD-10 codes X60-X84).	Fiscal austerity (i.e., cuts in government spending) significantly predicted suicide deaths. Reductions in government spending led to increases in suicide deaths, particularly in the 45-64 age group and the 65-89 age group. Fiscal austerity had a significant, positive relationship on male suicide rates, but did not have a significant impact on suicide rates in females. However, there were increases in suicide rates in females in the 25-44 age group.
Austin et al. (2023)	US	Cross-sectional	State elimination of the asset test for SNAP eligibility, state increases in the income limit for SNAP eligibility, and state adoption of both policies under broad-based categorical eligibility.	Adult participants aged ≥18 years from the National Survey on Drug Use and Health.	N/A Compares policies between states.	Number of suicide deaths, defined as a death with an underlying cause of death code in X60-X64, Y87.0, or U03.	The number of suicide deaths among adults per 100,000 population increased in states that had the asset test eliminated, both policies or neither policy. The median number of suicide deaths per 100,000 adult population (18.5 [13.8-22.9] vs 22.6 [19.5-26.9] were lower in state-years with both policies compared with state-years with neither policy. State-years with both policies also had a lower percentage of suicide deaths per 100,000 adult population (18.5 [13.8-22.9]) compared to state years with only the asset test eliminated (19.5 [17.3-23.5]). In fully adjusted models, state elimination of the asset test and the adoption of both policies, was associated with decreases in suicide deaths. There was a decrease in suicide deaths in states with both policies, compared to states with neither policy,

							however this was non-significant (RR, 0.93; 95% CI, 0.84-1.02). State elimination of the asset test only was not associated with a change in the rate of suicide deaths (RR, 0.96; 95% CI, 0.87-1.06) compared with state adoption of neither policy.
Biddle et al. (2014)	US	Retrospective, longitudinal	SAP: A program to satisfy the Act 211 requirement to identify, intervene, and refer students with mental health and drug and alcohol problems to appropriate services.	347,626 high school students aged 13-21 years in 9^{th}-12^{th} grades referred to the SAP during school years 1997/1998 – 2005/2006. SAP population referred for suicide risk (N = 18,445) and SAP population referred for other reasons (N = 329,181).	Suicidal students who did not participate in SAP who did not take part (for reasons including refusing to take part, already receiving support, no parental permissions).	Suicide death.	Within the SAP population referred for suicide risk, those who did not participate in SAP had a much greater suicide rate than those who did participate (129.25 compared to 65.20 suicides per 100,000 persons), however the findings were not statistically significant.
Cai et al. (2021)	Various countries (mostly Asian and North African countries).	Cross-sectional, ecological	Discrimination laws	Women	N/A	Suicide in women based on male/female ratios of suicides. Age-adjusted suicide rates were obtained from the Global Burden of Disease database and is consistent with the ICD-9 and ICD-10 classifications.	Laws discriminating against women fully mediated the relationship between country income levels and male/female suicide ratios, resulting in higher female suicide rates (β = -0.07, 95% CI [-0.15, -.02]).
Choudbury & Plemmons (2023)	US	Quasi-experimental (differences-in-differences method)	Implementation of prescriptive authority for psychologists.	Participants aged 15-64 years (10-year age groups). Individuals in states with	Individuals in states without prescriptive authority (other	Suicide death rate (mortality due to any self-inflicted harm) per capita per 100,000	Suicide death rates decreased by 5 to 7 percentage points in New Mexico and Louisiana following prescriptive authority expansions for psychologists, relative to states without prescriptive authority for

				prescriptive authority (i.e., Louisiana and New Mexico).	states in the US).	persons using restricted mortality data provided by the National Center for Health Statistics from 1999-2015 using ICD-9 codes E850-E958.9.	psychologists. The effect was significant for males only (-0.0768***), white populations (-0.0537**; but not black populations), individuals who are married (-0.0594***) or single (-0.0408***; but not divorced individuals), and for people aged of 35-44 and 45-55 years.
Christian et al. (2019)	Indonesia	Quasi-experimental (differences-in-differences method)	A conditional cash transfer program, Program Keluarga Harapan, which provides households with yearly cash transfers worth about 10% of their pretreatment annual consumption over six years, which targets subdistricts with high poverty rates, sufficient supply-side health, and educational institutions.	Eligible households for the conditional cash transfer program. 10% of households received the program, based on proxy-means tests of households that were eligible. The proxy-means tests included factors, such as housing, education levels, employment, and access to health and education.	All subdistricts that had not received the cash transfer program in a census wave.	The census data of all Indonesian villages (i.e., PODES) was used to determine the number of suicides per 100,000 inhabitants at the subdistrict level.	An average per capita transfer of US $22.45 targeted at the poorest 10% of households led to a decrease in the suicide rate by approximately 0.36 suicides per 100,000 population per year. Agricultural productivity shocks, which were proxied by rainfall, significantly affect the suicide rates. A 1 SD increase in rainfall increases yearly per capita consumption by $21.60 and decreases suicides per 100,000 people by approximately 0.08. Cash transfers lower suicides most strongly in subdistricts experiencing negative agricultural productivity shocks.
Cramm et al. (2023)	97 countries	Cross-sectional and longitudinal	National policies governing the use of corporal punishment.	Adolescents (four strata: four strata: males aged 10–14, males aged 15–19, females aged 10–14, and females aged 15–19) in countries that banned corporal punishment.	Adolescents (four strata: four strata: males aged 10–14, males aged 15–19, females aged 10–14, and females aged 15–19) in countries that	Suicide rates using the WHO mortality database, providing adolescent suicide counts by country and stratified by age group (10-14 years and 15-19 years).	Countries that had banned corporal punishment in any setting, compared to countries that had not banned corporal punishment experienced greater suicide rates in female adolescents aged 15-19 years in 2017 (RR = 2.07; p = .03). Countries that permitted corporal punishment in schools experienced greater suicide rates in female adolescents aged 15-19 years (RR = 2.01; p

					did not ban corporal punishment.		= .02). No other statistically significant associations were found. Between 8-17 years after partial bans of corporal punishment, suicide rates in males aged 15–19 years significantly decreased, with a peak decrease of 7% occurring at year 13 (RR = 0.93, 95 % CI [0.91, 0.96]) relative to one year earlier. Lagged effects of partial bans of corporal punishment were found for females aged 15–19 years, where suicide rates declined between 9-14 years after the ban with the largest change occurring in year 12 (RR = 0.93, 95 % CI [0.89, 0.97]) relative to year 11. Lagged effects of bans of corporal punishment in schools significantly decreased over time in both male and female adolescents.
DeAngelis & Dills (2021)	US	Cross-sectional.	State voucher and charter school laws: whether the state allows charter schools, whether the state adopts a voucher program for students on an Individualized Education Plan, and whether the state adopts a more widely available voucher plan.	Adolescents aged 15-19 years. Schools not adopting state voucher and charter school laws.	Adolescents aged 15-19 years. Schools not adopting state voucher and charter school laws.	State-level deaths of people aged 15-19 years per 100,000 people due to self-inflicted harm from the Centers for Disease Control's National Center for Health Statistics from 1979-2016.	Suicide rates were lower following the adoption of charter school laws (-1.339^{**}) and voucher programs (-0.638^{*}). However, the results for Individualized Education Plan-only voucher programs were not significant (−0.16). When controls were included for current state drug and alcohol policies - whether the state has adopted medical marijuana, graduated drivers licensing, a maximum legal blood alcohol content of 0.08, zero tolerance laws; the minimum legal drinking age, and the inflation-adjusted tax rate on beer, the adoption of charter laws (-1.428^{***}) and voucher programs (-0.869^{**}) remained significant, whereas Individualized Education Plan-only voucher programs (−0.262). With demographic and economic controls, the adoption of charter laws and

							voucher programs remained significant, whereas Individualized Education Plan-only voucher programs.
Dow et al. (2020)	US	Quasiexperimental	Minimum wage and EITC intended to raise income for low-income workers.	Adults aged 18-64 years.	N/A	Suicide deaths including drug suicides and non-drug suicides from the CDC multiple causes of death data.	The number of non-drug suicides significantly reduced particularly among women after higher minimum wages and EITC were implemented. A 10% increase in the minimum wage led to a 2.7% decrease in suicide deaths in less-educated adults. Likewise, a 10% higher maximum credit led to a 3% decrease in suicide deaths in less educated adults. The placebo models found no significant effect of minimum wages or state EITC policies on suicides among adults with higher education levels.
Gertner et al. (2019)	US	Retrospective, longitudinal	Minimum wage increase	Individuals aged 16−64 years	N/A	Age-adjusted suicide rate obtained from the CDC Web-based Injury Statistics Query and Reporting System for all states from 2006 to 2016 reflecting cause of death codes associated with intentional self-harm (X60−X84, Y87.0, and U03).	A one-dollar increase in the minimum wage was associated with a 1.9% decrease (-0.19* 95% CI −0.031, −0.007) in the annual age-adjusted state suicide rate. The association between minimum wages and suicide rates among men (−0.020* (95% CI −0.035, −0.0053) and non-Hispanic whites (−0.018* 95% CI −0.030, −0.0058) was significant and were comparable to the estimate from the main analysis. The association among women was also comparable but not statistically significant (−0.020, 95% CI −0.041, 0.0012).

Grucza et al. (2014)	US	Quasiexperimental	State-level smoking policy interventions (increases in cigarette excise taxes and strengthening of smoke-free air laws).	Individuals aged 18-65 years, with analyses stratified by age including individuals over 65.	N/A	Suicide deaths obtained from the Multiple Cause of Death files for 1990–2004, collected by the National Center for Health Statistics. ICD versions 9 and 10 (codes E950-E959 and X60-X84, Y87).	A $1 increase in state excise tax per pack of cigarettes was associated with a 12.4% reduction in suicide risk. A 1-point increase on the 6-point smoke-free air score was associated with 3% reduction in suicide risk. When the two policies were combined (equating to a $1 excise tax increase to a 5-point increase in smoke-free air score), each unit increase was associated with a 12% decrease in suicide risk. Associations between policies and suicide risk was strongest in the three youngest age groups, who had the highest prevalence of smoking.
Hughes et al. (2023)	US	Longitudinal (Time series)	Psychologist prescriptive authority policies.	Individuals in states with prescriptive authority (i.e., Louisiana and New Mexico).	Individuals in states without prescriptive authority. Synthetic control group states (i.e., other states in the US) termed synthetic Louisiana and synthetic New Mexico.	Suicide deaths identified from the CDC via the Wide-ranging online data for Epidemiologic Research database (1999-2013) (ICD-10 codes U03, X60-X84, and Y87).	Implementation of psychologist prescriptive authority policies resulted in no significant pre-intervention differences between New Mexico and states without prescriptive authority policies or significant post-intervention differences. The overall post-intervention trend did not significantly differ between New Mexico and synthetic New Mexico (difference in slope = 0.02, 95% CI [-0.21, 0.24]. There were no significant differences between Louisiana and states without prescriptive authority policies in the preintervention period. Following the intervention, Louisiana did not have a significant immediate change (b = -0.047, 95% CI [-1.07, 0.98]) or a change in the trend (b = -0.12, 95% CI [-0.34, 0.10]); however, the overall trend for Louisiana was 0.12 suicides per 100,000 people per year lower (95% CI [-0.18, -0.06]) than for states without prescriptive authority policies.

Kaufman et al. (2020a)	US	Longitudinal	Quarterly state unemployment insurance recipiency rate (i.e., the percentage of unemployed persons who received unemployment insurance) including regular programs and all programs (regular plus emergency programs).	Adults aged 18-65 years.	N/A.	The state-quarterly suicide rate per 100,000 population.	*For regular programs*: In fully adjusted models, the estimated effect of a 10% point increase in the regular unemployment insurance recipiency rate for 18–64 year-olds was non-significant (β = -0.009, 95% CI -0.041, 0.022). The estimated effect of the interaction between the recipiency rate and unemployment rate (β = 0.002, 95% CI -0.007, 0.011) was also non-significant. However, effect estimates were protective for specific subgroups including men (β = -0.120, 95% CI -0.188, -0.051), White Americans (β = -0.228, 95% CI -0.329, -0.128), those aged 45-54 years (β = -0.107, 95% CI -0.174, -0.040), and those aged 55-64 years (β = -0.147, 95% CI -0.227, -0.067). Effect estimates were harmful for women (β = 0.081, 95% CI 0.016, 0.0146) and 18–24 year-olds (β = 0.152, 95% CI 0.059, 0.245). *For all programs*: The estimated effect when emergency unemployment insurance programs were in place were non-significant (β = -0.018, 95% CI -0.051, 0.014). The estimated effect of the interaction between the recipiency rate and the unemployment rate was also non-significant (β = 0.002, 95% CI -0.007, 0.011). For specific subgroups, effect estimates remained similar in magnitude and direction, except for the estimate for women.

Kaufman et al. (2020b)	US	Longitudinal	The difference between the effective state and federal minimum hourly wage in US$2015 (defined both by the date the state law became effective based on a legislative bill and lagged by 1 year).	Adults aged 18-65 years. Educational attainment ≤ High school education.	Adults aged 18-65 years. Educational attainment ≥ College degree.	Suicide rates by month.	There was a 6% reduction in suicide for every dollar increase in the minimum wage among adults with ≤ high school education (rate ratio = 0.941; 95% CI 0.898, 0.986). No effect of minimum wage was found on suicide rates among adults with ≥ college degree. There was estimated 4.4% decrease (rate ratio = 0.956; 95% CI 0.925, 0.988) per dollar minimum wage increase among adults with ≤ high school education. When controlling for state-specific time-varying economic variables, there was an estimated 3.5% decrease in suicide rates for every additional dollar in state minimum wage (rate ratio = 0.964; 95% CI 0.934, 0.995). In addition, there was a statistically significant interaction between minimum wage and unemployment (z = -2.48, p = 0.013).
Kim (2018)	Various countries	Review	Social protection policies and programs.	N/A	N/A	Suicide rates from various data sources (e.g., CDC, OECD health data; WHO European Mortality Database).	The review included 19 qualitative and quantitative papers examining social protection policies and suicide. A negative association between social protection policies and suicide rates were found. Studies differed in regard to setting, observation period, and social protection policies.
Lang (2013)	US	Longitudinal	Mental health insurance laws.	Not reported. Individuals within parity states.	Not reported. Individuals within non-parity states.	Suicide rates.	The average suicide rate in parity states is 10.89 per 100 000 (prior to the enactment of access to parity laws) and decreases to 9.88 per 100 000 in years following the enactment of access to parity laws. Suicide rates in parity states decreased by 0.58 per 100 000 more than non-parity states between 1990–1997 and 1998–2004, but was non-significant (p = 0.12). The suicide rate in parity states significantly

							decreased by 8% between the 1990–1997 period and the 1998–2004 period. The suicide rate is 5% lower in states where parity laws are enacted. When a state enacts a non-parity law, the suicide rate increases by 2%, but is non-significant. For state mental health laws, the parity coefficient is significant at -0.06 (equivalent to a 6% decrease) than in states with minimum mandated benefit laws (i.e., states where mental health benefits do not need to be the same as physical benefits).
Lange et al. (2023)	Lithuania	Longitudinal (Time series)	Alcohol control policy enactments (2008, 2017, and 2018). Increase in alcohol taxation using the pricing and availability policies with the criteria (1) pricing policies had to result in decreased affordability, (2) availability policies had to reduce alcohol use for a large proportion of the population.	Women and men aged 25-74 years.	N/A	Suicide deaths as per 100,000 people. ICD 10th revision, codes were used to ascertain cases of death by suicide in the Lithuanian Mortality Statistics: X60-X84	The three policy enactments had no significant effect on the suicide mortality rate among women (2008 estimated effect = -0.081, p = 0.518; 2017 estimated effect = 0.134, p = 0.170; 2018 estimated effect = -0.012, p = 0.924). A significant negative effect was found on suicide mortality rate for the 2017 policy enactment (estimated effect = -0.155, p = 0.016), but not for the 2008 (estimated effect = 0.128, p = 0.336) and 2018 (estimated effect = -0.145, p = 0.258) policy enactments for men.
Lohman et al. (2021)	US	Longitudinal ecological study	Statewide long-term care regulations.	Older adults aged ≥55 years.	N/A	Suicide deaths (data from the National Violent Death Reporting System).	A greater number of statewide long-term regulations was not correlated with either overall or long-term care-related suicides. There was no association between the number of long-term care regulations and either overall or long-term care-related suicides.

Machado et al. (2022)	Brazil	Quasi-experimental	The Bolsa Familia national cash transfer programme. To be eligible, families must have: (i) a monthly per capita income of half a minimum salary in Brazil (e.g., 778.00 Brazilian reais in 2015, or less or (ii) have a total monthly family income of up to three minimum salaries. Recipients must fulfil certain conditionalities to receive benefits e.g., children must have a ≥85% school attendance; women and children must attend health care appointments, and follow the vaccination schedule.	Bolsa Familia programme beneficiaries. Individuals aged ≥10 years (of a possible 114,008,317 individuals).	Non-beneficiaries of the Bolsa Familia programme. Individuals aged ≥10 years who had applied in the same year for the Bolsa Familia programme, but were yet to receive the cash transfer.	Suicide rates. Cause-specific mortality data (for people who died during the study period) was collected from the Brazilian Ministry of Health's Mortality Information System. Suicide was defined as death resulting from intentional self-harm (ICD-10 codes X60-X84).	Lower suicide rates were observed among Bolsa Familia programme beneficiaries in all models. Overall, suicide rates among beneficiaries and non-beneficiaries were 5.4 (95% CI = 5.32, 5.47, $p < 0.001$) and 10.7 (95% CI = 10.51, 10.87, $p < 0.001$) per 100,000 individuals in the original cohort and 5.5 (95% CI = 5.44, 5.61, $p < 0.001$) and 11.1 (95% CI = 10.41, 11.81, $p < 0.001$) in the matched cohort, respectively. Bolsa Familia programme beneficiaries had a 56% lower risk of suicide than non-beneficiaries in the final adjusted model with inverse probability of treatment weighting (IRR = 0.44, 95% CI = 0.42, 0.45, $p < 0.001$). Differences between beneficiaries and non-beneficiaries were greater among women and individuals aged 25-59 years. The relationship between the Bolsa Familia programme and decreased suicide rates were more prominent among women and individuals aged 25-59 years, followed by individuals aged 10-24 years.
Mattei et al. (2019)	Italy	Longitudinal	Active labour market programs (examined as a moderator).	Individuals aged 15-74 years.	N/A	Suicide rates obtained from Health for All database in years 1990-2014 (referring to the actual rates observed in the Italian population).	Active labour market programs moderated the relationship between changes in unemployment rate and suicide. A 1% increase in the expenditure for active labour market programs was associated with a 0.45% decrease in suicide rate among men aged 45-54 years. Females did not benefit significantly from active labour market programs.

Mattei et al. (2020)	Italy	Longitudinal	Social protection measures including active labour market programs, public unemployment spending and aggregated social protection (examined as a moderator).	Individuals aged 15-75+ years.	N/A	Suicide rates obtained from Health for All database in years 1990-2014 (referring to the actual rates observed in the Italian population).	Social expenditure for unemployment moderated the association between credit to GDP ratio and suicide. A one-unit increase in the rate of growth of public unemployment spending was associated with a decrease in 0.12 suicide per 100,000 people. However, this effect was not significant for women.
Ortega (2023)	US	Quasi-experimental (differences-in-differences design)	State expansion of public health insurance (Medicaid) to low-income individuals as a part of the Patient Protection and Affordable Care Act.	23 states with expansion of Medicaid. Medicaid eligible individuals aged 18-64 years (non-elderly adults). Doesn't include individuals >65 years as this group are likely to be covered by Medicare.	11 states with no expansion of Medicaid	Suicide deaths from the CDC National Vital Statistics System.	There is a transitory non-significant decrease between years since Medicaid expansion and suicide deaths, with the largest effect occurring in year four with a 4% decrease in suicide deaths in post-expansion states (relative to non-expansion). This decline was greatest in individuals who were White, Black, or males. Following this decrease in suicide rates 1-4 years post Medicaid expansion, suicide rates increased in the fifth year.
Park et al. (2022)	27 Countries	Longitudinal	Social and housing policies	Not reported	N/A	Suicide deaths from the OECD Health Statistics.	Housing cost burden was significantly associated with suicide rates (β = 0.647, 95% CI 0.100, 1.194). However, this relationship was attenuated in countries with larger social housing stocks for suicide rates (β = −0.963, 95% CI −2.633, 0.707). In countries that do not have rent controls, there was a significant association between housing cost burden and suicide (β=0.877, 95% CI 0.050, 1.704), whereas in countries that control rent levels, there was no significant association between housing cost burden and suicide (β = 0.165, 95% CI −0.546, 0.875).

Rambotti et al. (2020)	US	Longitudinal	SNAP measured as the average monthly persons receiving food stamps. EITC measured as the extent to which states increase the credit received by working families from the Federal government.	Low income individuals and households.	N/A	Overall and gender-specific state-level suicide rates obtained from the National Vital Statistics System (CDC), calculated using intentional self-harm codes: U03, X60-X84, and Y87.0.	The association between SNAP and the suicide death rate is -.22**. The association between EITC and suicide death rate is -.10**. When adjusting for covariates (e.g., economic factors including rising poverty and unemployment rates, population size and composition), the association between SNAP and suicide death rates is -.17*. When adjusting for covariates, the association between EITC and suicide death rates becomes nonsignificant (.00).
Shand et al. (2022)	Various countries	Systematic review (All studies included used time-series analysis).	Government responses to unemployment (unemployment benefits, active labour market programs, and employment protection legislation).	N/A	N/A	Suicide deaths	Six studies were identified. Five studies examined unemployment benefits, two examined active labour market programs, and two examined employment protection legislation. All six studies provided some evidence that unemployment support policies are associated with decreases in suicide.
Termorshuizen et al. (2014)	Netherlands	Cohort study	Public Mental health care: A legal task of the municipal authority aiming at prevention and intervention at homelessness among persons.	Public Mental Health care clients (N = 6,724; *M* = 39.4 years, *SD* = 13.7; Male = 4,484).	Matched controls (N = 66,247; *M* = 39.2 years, *SD* = 13.7; Male = 43,916).	Population register and linked causes of death register of Statistics Netherlands. Death report is ICD-coded. Suicide (X60-84, Y10-34).	The suicide rate was higher among Public Mental health care clients, but was not significant (HR = 2.63, 95% CI 0.99, 7.02, *p* = 0.052).
Toffolutti & Suhrcke (2019)	28 countries in the European Union.	Retrospective, longitudinal	Fiscal policies (1991-2013).	Individuals below aged 65 years exposed to fiscal policies.	N/A	Standardised mortality rates of suicide deaths per 1000,000 population (1991-2013).	Among all 28 countries and 28 countries plus Iceland, Norway and Switzerland, 23 EU countries and 17 EU countries, the inclusion of a fiscal measure (fiscal stimulus) led to a non-significant decrease (-0.020; -0.019; -0.021; -0.024, respectively) in the absolute magnitude of the association between the unemployment rate and

							suicides. Among all 28 countries and 28 countries plus Iceland, Norway and Switzerland, austerity resulted in an increase in suicide rates (0.020 and 0.018, respectively), however this effect was only significant when examined in 23 EU countries (0.028*) and 17 EU countries (0.043*).
Xuan et al. (2016)	Various countries	Review	Alcohol policies (e.g., alcohol taxation and prices, density of outlets, the retail system, legal purchasing and drinking age, hours/ days of sale, and general alcohol availability).	N/A	N/A	Suicide rates.	Although inconsistent, research supported the protective effect of restrictive alcohol policies on reducing suicide rates. In contrast, liberalization of alcohol policies (e.g., privatization of alcohol retail market) increases suicide rates.

Note. EITC = Earned Income Tax Credit; EU = European Union; CDC = Centers for Disease Control and Prevention; CI = Confidence Interval; ICD = International Classification of Diseases; GDP = Gross Domestic Product; HR = Hazard Ratio; OECD = Organisation for Economic Co-operation and Development; RR = Relative Risk; SAP = Student Assistance Program; SNAP = Supplemental Nutrition Assistance Program; WHO = World Health Organization.

Appendix 1 – CINAHL (*N* = 424)

Concept 1 **Policy** AND **the following concepts:** **(N = 73,813)**	Concept 2 **Access to health services** **(N = 213,894)**	Concept 3 **Education** **(N = 261,265)**	Concept 4 **Income and social Protection** **(N = 122,256)**	Concept 5 **Early childhood development** **(N = 236,017)**
(MH "Nutrition Policy+") **OR** (MH "Public Policy+") **OR** (MH "Policy Studies+") **OR** (MH "Organizational Policies+") **OR** (MH "Health Policy Studies") **OR** (MH "Policy Making") **OR** (MH "School Policies") **OR** (MH "Health Policy+") **OR** (MH "Guideline Adherence") **OR** (MH "Legislation+") **OR** (MH "Program Development+") OR (MH "Substance Use Rehabilitation Programs+") OR (MH "Food Assistance") OR (MH "Drug Rehabilitation Programs+") OR (MH "Program Planning") OR (MH "Program Implementation") OR (MH "Program Evaluation") OR (MH "Employee Assistance Programs") OR (MH "Alcohol Rehabilitation Programs+") **OR** (MH "State Health Plans")	(MH "Health Services Accessibility+") **OR** (MH "Health Care Delivery+") **OR** (MH "Community Health Services+") **OR** (MH "Mental Health Services+") **OR** (MH "Health Services Needs and Demand+")	MH "Education+")	(MH "Income+") **OR** (MH "Poverty+") **OR** (MH "Socioeconomic Factors+") **OR** (MH "Social Class+")	(MM "Child Development") **OR** (MH "Child+") **OR** (MM "Adverse Childhood Experiences")

Concept 6 **Food insecurity** **(N = 3,002)**	Concept 7 **Housing, basic amenities and the environment** **(N = 11,588)**	Concept 8 **Structural Conflict** **(N = 555)**	Concept 9 **Social inclusion and non-discrimination** **(N = 39,394)**	Concept 10 **Unemployment and job insecurity** **(N = 14,434)**	Concept 11 **Working life conditions** **(N = 30,057)**	**AND** **Suicide** **(N = 11,697)**
MH "food security+"	MM "Homeless Persons" **OR** MH Housing+ **OR** MH "Medically Underserved Area" **OR** MH "Neighborhood Characteristics+" **OR** MH Environment	MH "Social Structure+"	MM Social Inclusion **OR** MM Social Factors **OR** MH "Social Behavior+" **OR** MM Social Deprivation **OR** MH "Social Participation" **OR** MH "Discrimination+" **OR** MM Social Norms **OR** MH "Prejudice+" **OR** MH "Racism+"	MH "Employment+" **OR** MM Unemployment **OR** MM Employment, Supported	MH "Occupational Health+" **OR** MM Telecommuting **OR** MM Occupational Exposure **OR** MH "Work Environment+" **OR** MH "Stress, Occupational+" **OR** MM Workload **OR** MH "Burnout, Professional+"	(MH "Suicide+")

Appendix 2 – Medline (*N* = 250)

Concept 1 **Policy** AND **the following concepts:** **(N =107,471)**	Concept 2 **Access to health services** **(N = 1,237,975)**	Concept 3 **Education** **(N = 956,680)**	Concept 4 **Income and social Protection** **(N = 516,711)**	Concept 5 **Early childhood development** **(N =2,198,300)**
(MH "Policy+") **OR** (MH "Policy Making+") **OR** (MH "Public Policy+") **OR** (MH "Health Policy+") **OR** (MH "Nutrition Policy+") **OR** (MH "Organizational Policy") **OR** (MH "Environmental Policy") **OR** (MH "Legislation as Topic") **OR** (MH "State Health Plans")	(MH "Health Care Facilities, Manpower, and Services+") **OR** (MH "Health Services+") OR (MH "Women's Health Services+") OR (MH "Health Services for the Aged") OR (MH "Health Services for Prisoners") OR (MH "School Health Services+") OR (MH "Occupational Health Services") OR (MH "Child Health Services+") OR (MH "Health Services Accessibility+") OR (MH "Student Health Services") OR (MH "Health Services, Indigenous") OR (MH "Preventive Health Services+") OR (MH "Mental Health Services+") **OR** (MH "Delivery of Health Care+") OR (MH "Delivery of Health Care, Integrated+") **OR** (MH "Community Health Services+") OR (MH "Community Mental Health Services") **OR**	(MH "Education+") **OR** (MH "Educational Status+") **OR** (MH "Literacy")	(MH "Income+") **OR** (MH "Poverty+") **OR** (MH "Socioeconomic Factors+") **OR** (MH "Social Class+") **OR** (MH "Economic Status")	(MH "Child Development"+) **OR** (MH "Child+") **OR** (MH "Language Development+") **OR** (MM "Adverse Childhood Experiences")

	(MH "Right to Health") **OR** (MH "Universal Health Care") **OR** (MH "Healthcare Disparities") OR (MH "Health Inequities+")

Appendix 3 – PsycINFO (*N* = 154)

Concept 1 **Policy** AND **the following concepts:** **(N = 51,254)**	Concept 2 **Access to health services** **(N = 146, 111)**	Concept 3 **Education** **(N = 15,012)**	Concept 4 **Income and social Protection** **(N = 23,644)**	Concept 5 **Early childhood development** **(N = 39,165)**
DE "Government Policy Making" OR DE "Policy Making" OR DE "Environmental Policy" OR DE "Health Care Policy" OR DE "Education Policy" OR DE "Government" OR DE "Health Care Policy" OR DE "Affordable Care Act" OR DE "Health Care Reform" OR DE "Tobacco Control" or DE "Public Mental Health" **OR** DE "Legal Processes" OR DE "Legislative processes" OR DE "Law (Government)" OR DE "Laws" **OR** DE "Mental Health Program Evaluation" OR DE "Educational Program Evaluation" OR DE "Program Development+" OR DE "Educational Program Planning" OR DE "School Based Mental Health Services"	DE "Treatment" OR DE "Behavioral Health Services" OR DE "Health Care Policy" OR DE "Health Service Needs" OR DE "Integrated Services" OR DE "Managed Care" OR DE "Mental Health Programs" OR DE "Prevention" OR DE "Quality of Care" OR DE "Quality of Services" OR DE "Health Care Delivery" OR DE "Health Care Access" OR DE "Health Care Costs" OR DE "Health Care Reform" OR DE "Health Care Services" OR DE "Health Care Utilization". **OR** DE "Health Disparities" OR DE "Mental Health Disparities" **OR** DE "Community Mental Health" OR DE "Mental Health" OR DE "Mental Health Programs" OR DE "Mental Health Services" OR DE "Public Health Services" OR DE "Community Mental Health Services" OR DE "Integrated Services" OR DE "Community Mental Health Centers" OR DE "Community Services"	(DE "Education"+)	(DE "Income (Economic)") **OR** (DE "Poverty") **OR** (DE "Socioeconomic Factors") **OR** (DE "Social Class")	DE "Childhood Adversity" OR DE "Early Childhood Development" OR DE "Child Development")

Concept 6 **Food insecurity** **(N = 1,187)**	Concept 7 **Housing, basic amenities and the environment** **(N = 12,477)**	Concept 8 **Structural Conflict** **(N = 1,170)**	Concept 9 **Social inclusion and non-discrimination** **(N = 27,322)**	Concept 10 **Unemployment and job insecurity** **(N = 8,451)**	Concept 11 **Working life conditions** **(N = 19,880)**	**AND** **Suicide** **(N = 11,701)**
DE "food insecurity"	DE "Homeless Youth" OR DE "Homelesss" **OR** DE "Housing" **OR** MH Environment	DE "Social Structure*"	DE "Social inclusion" **OR** DE "Social Behavi#r" **OR** DE "Social deprivation" **OR** DE "Social Discrimination" **OR** DE "Social Norms" **OR** DE Prejudice **OR** DE Racism	DE Employment **OR** DE Unemployment **OR** DE "Supported Employment"	DE "Occupational Health" **OR** DE "Occupational Exposure" **OR** DE "Working Conditions" **OR** DE "Occupational Stress" **OR** DE "Workload" **OR** DE "Burnout"	DE "Suicide"