

Causal beliefs about social determinants of depression, poverty, and mortality

Emma K. Bridger¹  | John Maltby² | Eiko I. Fried³ | Daniel Nettle^{4,5} 

¹School of Psychology and Vision Sciences, University of Leicester, Leicester, UK

²Department of Population Health Sciences, University of Leicester, Leicester, UK

³Leiden University, Leiden, Netherlands

⁴Institut Jean Nicod, Département d'études cognitives, École Normale Supérieure, Université PSL, EHESS, CNRS, Paris, France

⁵Department of Social Work, Education and Community Wellbeing, Northumbria University at Newcastle, Newcastle, UK

Correspondence

Emma K. Bridger, School of Psychology and Vision Sciences, University of Leicester, Leicester, UK.
Email: eb441@leicester.ac.uk

Funding information

British Academy, Grant/Award Number: TDA23-230038

Abstract

Social determinants influence multiple life outcomes including depression, poverty, and mortality. While causal beliefs shape public views on these issues, studies have remained siloed across disciplines. We surveyed 1000 UK adults on 43 social and non-social risk factors for these outcomes, using a broader set of social factors than previous work. We ask which social determinants are perceived to be causally important, how these are weighted relative to non-social causes, and whether this differs across outcomes. To explore psychological predictors of beliefs, we measured political orientation, subjective socioeconomic status, sense of control, and material deprivation. Respondents viewed social factors as more causal for poverty and depression than for mortality. Left-leaning views and lower perceived control were linked to stronger causal beliefs in social factors. These findings reveal that UK respondents perceive a causal role for social determinants that is comparable to that of non-social factors.

KEYWORDS

causal beliefs, depression, mortality, poverty, social determinants of health

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2025 The Author(s). *Analyses of Social Issues and Public Policy* published by Wiley Periodicals LLC on behalf of Society for the Psychological Study of Social Issues.

Public Significance Statement: The UK public clearly perceives social determinants—the structural conditions in which people live—as playing a causal role in depression and poverty, but less so for mortality. Perceptions were politically polarized across all outcomes, suggesting resistance to interventions among those on the political right. These findings underscore the importance of public education on social determinants for some outcomes and strategic political framing in building support for social interventions.

INTRODUCTION

Many adverse life outcomes, including poor mental and physical health and lower life expectancy, occur disproportionately in populations experiencing socioeconomic hardship (Bridger & Daly, 2017; Galobardes et al., 2008; Kirkbride et al., 2024). These patterns arise from the greater exposure to harmful social determinants of health. Social determinants of health are structural conditions in which people live that influence their health and wellbeing, such as poverty, food insecurity, housing insecurity, childhood adversity, and discrimination (Thimm-Kaiser et al., 2023). The complex causal interplay between these social determinants and health is of cross-disciplinary interest, such that psychiatrists, psychologists and economists alike, now advocate for preventive social interventions that can have salutary effects in multiple life domains (Johnson et al., 2021; Kirkbride et al., 2024; Ridley et al., 2020).

An important precondition for the success and wider roll-out of preventive social interventions of this kind is public support for them. This support is, in turn, contingent on the public believing that adverse life outcomes are causally influenced by social determinants, and not just by motivational or behavioral choices (Niederdeppe et al., 2008; Ortiz et al., 2020). The goal of the current work is to assess this by studying lay causal perceptions of the social determinants of different kinds of adverse individual-level outcomes, specifically depression, poverty, and mortality.

Causal beliefs about social determinants

Causal attributions matter a great deal due to their impact on attitudes and behaviors across contexts. This is the case for mental and physical health where beliefs about causes of illness are linked to self-management (McAndrew et al., 2018), help-seeking (Nolan & O'Connor, 2019; Tsai et al., 2022), treatment preferences (Hagmayer & Engelmann, 2014), stigma toward others (Haslam & Kvaale, 2015), pessimism and mental health prognosis (Ahuvia et al., 2024; Cannon et al., 2022). Elsewhere, causal beliefs predict how people behave toward one another (Haslam et al., 2006), respond to difficult tasks (Park & Kim, 2015), as well as how they view and advocate for societal-level interventions (Nettle et al., 2023) including climate change (Ranney & Clark, 2016), welfare distribution (Jensen & Petersen, 2016), and inequality (Piff et al., 2020). Understanding people's causal explanations is, therefore, central to predicting how they respond to problems and interventions at the personal and societal level (Crist et al., 2023).

An assumption encountered across some literatures, is that lay publics have a limited understanding of social and structural forces (e.g., Amemiya et al., 2023; Haslam et al., 2019; Piff et al., 2020; Smith & Anderson, 2018) tending instead to endorse more simplistic motivational or dispositional explanations that lend themselves to behavioral or individual-level interventions (Kluegel & Smith, 1986). Sometimes, this assumption is made explicit by researchers who argue that the general public fail to appreciate the role of social factors (e.g., Abdalla et al., 2022; Haslam et al., 2018) or hold simplistic individualistic causal models (Skitka et al., 2002). Other times, the view that the public has a limited understanding of social causes can be inferred by calls to increase “literacy” around the issue (Matsumoto & Nakayama, 2017), or concerns from policymakers that they cannot secure a public mandate for interventions that address social determinants (Mackenbach, 2011). However, are academics and policymakers correct to assume that the public systematically undervalues the influence of social causes?

The current evidence base is mixed. The study of causal beliefs often takes place in academic silos that focus on distinct phenomena. For instance, whilst there has been much research on beliefs about the causes of mental ill-health (e.g., Angermeyer et al., 2011; Read et al., 2006), the bulk of this work has focused on the effects of biogenetic causes for mental ill-health (Ahuvia et al., 2024). Causal beliefs about structural, environmental or external stressors for mental health are often included alongside other factors (e.g., Averous et al., 2018; Barnwell et al., 2022; Jorm et al., 1997; Nolan & O’Connor, 2019; Schomerus et al., 2013; Whittle, 1996) but these are rarely the focus of study, or where they are, the focus is on one or two factors social factors such as “social support” (Haslam et al., 2018). Overall, in line with the historical shift away from recording social determinants (Handerer et al., 2021), studies of causal beliefs about mental ill-health have tended to foreground the biomedical, prompting calls for a greater focus on causal beliefs about social determinants of mental health (Ahuvia et al., 2024).

This is less the case in sociological and social psychological studies of beliefs about poverty or inequality. Building on work by Feagin (1972), research in this area often distinguishes explanations that lie within an individual’s control (dispositional attributions) from those that are situational or external to the individual (Bastias et al., 2024; Piff et al., 2020). Participants might be asked whether they agree that people are poor because of “a lack of effort by the poor” (dispositional) or because of “low wages in some businesses and industries” (external). One relevant finding is that external attributions are often endorsed on average more than internal attributions for population-level issues such as poverty or health inequality (e.g., Crist et al., 2023; Kraus et al., 2009). Regardless, this research domain has tended to include a greater emphasis on social factors than work on causal beliefs of mental health, although these are typically grouped together as structural or external influences.

Public health scholarship on causal beliefs directly examines views about social determinants, alongside behavioral or lifestyle factors (e.g., Abdalla et al., 2022; Blaxter, 1997; Popay et al., 2003; Robert & Booske, 2011; Schnittker, 2015). Here, the evidence is particularly conflicted. Although qualitative specialists find considerable evidence that lay people are able to articulate how social determinants influence health (Niederdeppe et al., 2008; Smith & Anderson, 2018), quantitative studies tend to report that healthcare access (Abdalla et al., 2022; Jessen et al., 2024; Robert & Booske, 2011) and health behaviors (Macintyre et al., 2006) are rated as most influential. One way to reconcile this is to acknowledge that whilst the evidence for wider structural factors might be apparent to people when probed on these issues, they are less accessible and apparently “difference-making” (Amemiya et al., 2023) than healthcare access and lifestyle behaviors.

To summarize, whilst there has been considerable interest in beliefs about social causes, this has occurred in parallel literatures, with diverging outcomes of interest, methodological approaches,

and emphasis on social determinants. The contribution of the current work is to systematically ask for the first time how people perceive the relative causal contribution of social and non-social (primarily behavioral and psychological) risk factors in a way that can be directly compared across outcomes—outcomes that have typically been investigated in isolation.

Who perceives “social” determinants?

Social psychological research has established a range of individual difference variables that are likely to influence beliefs about social determinants of health, such as political orientation, SES, and sense of control (Cozzarelli et al., 2001; Kraus et al., 2009, 2012; Shirazi & Biel, 2005). For example, people who endorse conservative ideologies emphasize personal responsibility and dispositional attributions (Skitka et al., 2002), whereas left-wing perspectives prioritize social factors (Ortiz et al., 2020). Socioeconomic status (SES) similarly shapes these beliefs: lower-SES individuals are more likely to endorse social causes, due to their experiences of disadvantage and reduced sense of control (Blaxter, 1997; Kraus et al., 2009; von dem Knesebeck et al., 2018). This is a specific assertion of the social cognitive model of social class, for instance, which argues that the greater constraints and uncontrollability of lower-class contexts leads to a range of social cognitive outcomes including favoring external explanations. Relatedly, the experience of material deprivation has also been linked to causal beliefs about ill-health (Bridger, 2023). A thorough investigation of causal beliefs of social determinants should, therefore, include these individual difference variables.

Adverse risk factors

We asked participants to make causal ratings about brief descriptions of adverse risk factors presented as properties of hypothetical individuals (i.e., *Sophia is unemployed and struggling to find work*), for three outcomes: depression, poverty, and mortality. We presented all risk factors—both social and non-social, alike—as well as outcome variables as a property of the individual rather than of the population. This is an important decision in order to permit comparisons of causal beliefs across outcomes, that is, not possible for existing data because attributions about mental ill-health are often assessed with respect to an individual described in a vignette (e.g., Nolan & O'Connor, 2019) whereas attributions for poverty and inequalities are framed at the population-level (e.g., Bastias et al., 2024; Crist et al., 2023). It should also minimize differences in abstraction that may influence appraisals of the contribution of relatively abstract social versus more concrete non-social factors and outcomes (Kim et al., 2017), as well as making them—and their consequences—more concrete and easier to conceptualize and appraise (Trope & Liberman, 2010). This becomes particularly relevant for the distal determinants such as inequality or the political determinants of health which are especially abstract (Dawes et al., 2022; Lynch, 2023).

We include a wider range of risk factors than in any previous studies on causal beliefs. The adjective “social” is used diversely across literatures (Cruwys et al., 2023) as are the factors that have been listed under the “social determinants” moniker (Alderwick & Gottlieb, 2019; Handerer et al., 2024). This diversity in usage has prompted calls for reflection from researchers when they use the term “social” (Brossard et al., 2020). For current purposes, we differentiate “social” causes as all that lie external to the individual, contrasting them with individual-level behaviors, motivations, and psychological processes. We developed a list of 43 risk factors, the majority (60%) of

which we classified a priori as “social” because they originate external to the individual and relate to their living environment, community, wider society, or social networks (see Table 1). All factors have been included in previous studies of causal beliefs, and/or there is empirical evidence linking them to the three outcomes of interest—living in poverty, becoming depressed or reduced life expectancy. Our list permits, for the first time, a direct comparison of the perceptions of the same social causes for diverse life outcomes—that have previously been studied separately.

The present study

To assess lay causal perceptions of the influence of adverse social risk factors on these diverse outcomes, we randomly allocated participants to rate the causal contribution of each of the 43 risk factors for depression, poverty, or mortality. Specifically, our objectives were to determine (i) how social determinants are weighted relative to non-social causes, (ii) does this differ for depression, poverty, and mortality, and (iii) which specific social determinants are perceived by lay persons to be causally important in contributing to depression, poverty, and mortality? We also examine whether perceptions of social determinants vary with political orientation, subjective SES, personal experience of material deprivation, and sense of control.

METHOD

The study protocol and analysis plan were pre-registered prior to data collection (link to anonymized version of original pre-registration: https://osf.io/z7gqs/?view_only=4f4f9413da0645558de7cca7e0f1feca). We pre-registered research questions about causal beliefs of social determinants as well as specific predictions derived from the social cognitive model of social class (Kraus et al., 2012). Specifically, we predicted that subjective SES and personal mastery would be negatively associated and perceived constraints positive associated with causal beliefs of social risk factors. Deviations from the pre-registered plan are detailed where necessary. We report all manipulations and measures included in this study. Independent review and ethical approval were obtained from the corresponding author’s institution (Ref: 0352).

Participants

One thousand participants were recruited through the UK Prolific panel (see Table S1 for descriptive statistics and Table S2 for correlations between person-level variables). The sample size was determined a priori by the intention to collect a sufficiently large non-student sample to make general claims about views in the UK. Larger samples were prohibited by funding constraints. No cases or participants were excluded at any point. All participants gave their informed consent to take part.

Design

Participants were randomly allocated to provide judgments about the causal contribution of each risk factor to either becoming depressed ($n = 333$), poverty ($n = 333$), or mortality ($n = 334$). In the

TABLE 1 List of risk factors and example citations in which they are linked to the outcomes of interest or included in studies of causal beliefs.

Risk factor	Linked to poverty	Linked to depression	Linked to mortality	Causal beliefs
Can't pay bills	Goulden and D'Arcy (2014)	Bjorndal et al. (preprint)	Brady et al. (2023)	
Inflation	Schmuecker (2021)	Mental Health Foundation (2023)		
Food insecurity	Gundersen et al. (2011)	Reeder et al. (2022)	Walker et al. (2020)	
Unemployed	Gallie et al. (2003)	Bjorndal et al. (2024)	Roelfs et al. (2011)	Feagin (1975)
Working conditions	Pfoertner and Demirer (2022)	Burgard et al. (2014)	Marmot et al., (2021)	Robert and Booske (2011)
Familial duties	Joseph Rowntree (2023)	Seedat and Rondon (2021)	Perkins et al. (2013)	
Low income	Goulden and D'Arcy (2014)	Zare et al. (2022)	Duncan et al. (2002)	Feagin (1975)
Insufficient savings	Goulden and D'Arcy (2014)	Zare et al. (2022)	Duncan et al. (2002)	
Inequality		Wilkinson and Pickett (2010)	Wilkinson and Pickett (2010)	
Capitalist			Flynn (2021)	Kraus et al. (2009)
Democracy	Dawes et al. (2022)	Dawes et al. (2022)	Dawes et al. (2022)	
Prejudice	Tyler and Campbell (2024)	Nadimpalli et al. (2015)	Lawrence et al. (2023)	Feagin (1975)
Social support		Garipey et al. (2018)	Holt-Lunstad et al. (2010)	Haslam et al. (2018)
ACEs	Yu et al. (2022)	Wilson-Genderson et al. (2021)	Yu et al. (2022)	Nettle et al. (2023)
Healthcare access	Mallorie (2024)		Prentice and Pizer (2007)	Jessen et al. (2024)
Low education	Hofmarcher (2021)	Cohen et al. (2020)	Case and Deaton (2024)	Robert and Booske (2011)
Crime level	Health Foundation (2024a)	Baranyi et al. (2020)	Eberly et al. (2024)	Robert and Booske (2011)
Air pollution	Rentschler and Leonova (2023)	Bhui et al. (2023)	Leliefeld et al. (2023)	
Housing conditions	Tunstall et al. (2013)	Pevalin et al. (2017)	Otavova et al. (2022)	Robert and Booske (2011)
Housing insecurity	Children's Society (2020)	Mason et al. (2024)	White et al. (2021)	
Green spaces	Health Foundation (2024b)	Geary et al. (2023)	Rojas-Rueda et al. (2019)	Robert and Booske (2011)

(Continues)

TABLE 1 (Continued)

Risk factor	Linked to poverty	Linked to depression	Linked to mortality	Causal beliefs
Unsafe at home	Fahmy and Williamson (2018)	Herbert et al. (2022)	Stoeckl et al. (2013)	
Different country	Hughes and Kenway (2016)	Gkiouleka et al. (2018)	Wallace and Darlington-Pollok (2022)	
Ethnicity	Williams et al. (2015)	Williams et al. (2015)		Robert and Booske (2011)
Sex	Munoz-Boudet et al. (2018)	Salk et al. (2017)	Zarulli et al. (2021)	
Disability	Disability Rights (2024)	Steptoe and Gessa (2021)	Kuper et al. (2024)	
Depressed	Bjorndal et al. (preprint)		Zhang et al. (2023)	
Perceived control	Sheehy-Skeffington and Rea (2017)	Lachman and Weaver (1998)	Turiano et al. (2014)	
Worries	Bjorndal et al. (preprint)	Hakulinen et al. (2015)		
Stress response	Evans and Kim (2007)		Chiang et al. (2018)	Robert and Booske (2011)
Self-reported health	Akanni et al. (2022)	Ambresin et al. (2014)	Ganna and Ingelsson (2015)	
Low self-esteem	Twenge and Campbell (2002)	Park and Yang (2018)		
Resilience		Maltby et al. (2019)		
Sleep difficulty	Patel et al. (2010)	Scott et al. (2021)		
Impulsivity	Carmel and Leiser (2017)		Daly et al. (2019)	
Low effort				Kraus et al. (2009)
Money management	Wang et al. (2022)			Feagin (1975)
Alcohol	Katikreddi et al. (2017)	McHugh and Weiss (2019)	Katikreddi et al. (2017)	Nickols and Nielsen (2011)
High fat diet	Drewnowski and Specter (2004)		Pampel et al. (2010)	Robert and Booske (2011)
Smokes	Garrett et al. (2019)		Ganna and Ingelsson (2015)	Robert and Booske (2011)
No physical activity	Humphreys and Ruseski (2011)	Noetel et al. (2024)	Pampel et al. (2010)	Robert and Booske (2011)
Family history		Sullivan et al. (2000)		Nolan and O'Connor (2019)
Low serotonin		Amidfar et al. (2018)		Nettle et al. (2023)

Note: A reference list for citations included in Table 1 can be found in the [Supporting Information](#).

depressed condition, participants were told the following: “*In this task we would like you to rate the extent to which the information described increases the risk that the person will become depressed*”. After each risk factor, participants are asked: *Does this increase the risk that he/she/they will be depressed?* (on a scale of 1–7 where 1 = *won't increase the risk at all* and 7 = *will strongly increase the risk*). In the poverty condition they were asked *Does this increase the risk that he/she/they will live in poverty?* In the mortality condition, they were asked: *Will this reduce his/her/their life expectancy?* (on a scale of 1–7 where 1 = *won't reduce it at all* and 7 = *will strongly reduce it*). We chose this phrasing rather than explicitly causal sentences after piloting indicated participants found this phrasing easier to understand and answer.

Risk factors

Our 43 risk factors were selected on the basis that they met at least one of the following criteria: (i) have been examined in depression, poverty, or other causal attribution studies, (ii) there is empirical evidence linking the risk factor to poverty, depression, or mortality, (iii) represented in the Rainbow model of social determinants (Dahlgren & Whitehead, 2021), or (iv) represented one of the 19 social domains assessed in US screening tools (Neshan et al., 2024). Table 1 presents an overview of the 43 factors along with example citations in which specific risk factors were studied. All but three of the 43 factors had been studied in relation to more than one of the three outcomes.

Risk factors were presented in a randomized order for each participant. Each risk factor was expressed in relation to a named individual (e.g., *Nisha has a low level of education*; see Table 2 for the full list of descriptions). Forty-three unique given names were selected, representing names used in the UK and from a variety of ethnic backgrounds (20 female; 20 male; 3 gender neutral). Allocations of names and genders to factors were counterbalanced (with the exception of biological sex, which was always accompanied by a female name). To minimize the influence of names on causal judgments, prior to completing the task, participants were told: “*Each description is accompanied by a name we chose randomly from a pool of names in the UK. These names are just examples and don't imply anything about the person.*”

Of the 43 risk factors, 26 (60%) were classed a priori (and pre-registered) as “social” causes. For primary analyses, we compared factors classified as “social” with the remainder (“non-social”). In further analyses outlined below, we dummy coded different classifications of the non-social factors: “psychological” (8 risk factors, e.g., impulsivity, worries a lot, doesn't have much control) or “behavioral” (7 risk factors, e.g., smokes regularly, does not do regular physical activity), demographic (4 risk factors), distal (2 risk factors), and psycho-biological (2 risk factors; see Table 2).

Individual difference variables

After completing causal ratings, participants answered questions about themselves. First, two measures of *subjective status* (Adler et al., 2000; Engstrom & Laurin, 2024), one of which asked them to place where they think they stand on a 10-rung ladder, where 10 represents the people who are the best off (e.g., have the most money or most education), and 1 represents the people who are worst off. A follow-up question asked them to complete this for where their parents would be on the ladder when they were growing up (Engstrom & Laurin, 2024). Second, we used the 12-item version of Lachman and Weaver's (1998) sense of control measure, with a 7-point Likert “strongly

TABLE 2 Forty-three social and non-social risk factors and descriptions.

Risk factor	Description (“Person X...”)	Category
Can't pay bills	<i>Regularly has difficulty paying their utility bills (e.g., electric, gas, internet) each month</i>	Social
Inflation	<i>Lives at a time when inflation is causing basic utilities to be very expensive</i>	Social
Food insecurity	<i>Worries their food will run out before they have money to buy more</i>	Social
Unemployed	<i>Is unemployed and struggling to find work</i>	Social
Working conditions	<i>Has a demanding job with little control over working conditions and times</i>	Social
Familial duties	<i>Provides daily unpaid care for their family and household</i>	Social
Low income	<i>Is on a low wage</i>	Social
Insufficient savings	<i>Does not have sufficient savings to pay an unexpected bill</i>	Social
Inequality	<i>Lives in a country with a very large income gap between the richest and the poorest</i>	Social [Distal]
Capitalist	<i>Lives in a capitalist economy</i>	Social [Distal]
Democracy	<i>Lives in a country where elections have little influence on the distribution of power and resources</i>	Social [Distal]
Prejudice	<i>Has experienced prejudice and discrimination</i>	Social
Social support	<i>Does not have a strong social support network</i>	Social
ACEs	<i>Has had a number of difficult or adverse experiences in childhood</i>	Social
Healthcare access	<i>Is unable to attend health appointments because of long waiting times</i>	Social
Low education	<i>Has a low level of education</i>	Social
Crime level	<i>Lives in a neighborhood with high crime levels</i>	Social
Air pollution	<i>Lives in an area with high levels of air pollution</i>	Social
Housing conditions	<i>Lives in a house with severe damp or mold</i>	Social
Housing insecurity	<i>Is living in insecure or temporary accommodation (e.g., homeless shelters, friends/family's sofa)</i>	Social
Green spaces	<i>Doesn't have access to green spaces they feel safe in</i>	Social
Unsafe at home	<i>Doesn't feel physically or emotionally safe where they currently live</i>	Social
Different country	<i>Grew up in a different country than where they live now</i>	Social [Demographic]
Ethnicity	<i>Is from an ethnic minority</i>	Social [Demographic]
Sex	<i>Was born biologically female</i>	Social [Demographic]
Disability	<i>Has a registered disability</i>	Social [Demographic]
Depressed	<i>Often feels depressed or has low mood</i>	Psychological

(Continues)

TABLE 2 (Continued)

Risk factor	Description (“Person X..”)	Category
Perceived control	<i>Doesn't feel like they have much control over their life</i>	Psychological
Worries	<i>Worries a lot</i>	Psychological
Stress response	<i>Has a strong physiological stress response</i>	Psychological
Self-reported health	<i>Does not feel physically healthy</i>	Psychological
Self-esteem	<i>Has low self-esteem</i>	Psychological
Resilience	<i>Struggles to “bounce back” from difficulties</i>	Psychological
Sleep difficulty	<i>Often has difficulty getting to sleep or staying asleep</i>	Psychological
Impulsivity	<i>Often acts impulsively</i>	Behavioral
Effort	<i>Doesn't put much effort into their life, studies or work</i>	Behavioral
Money management	<i>Has difficulty managing their money</i>	Behavioral
Alcohol	<i>Regularly drinks alcohol</i>	Behavioral
High fat diet	<i>Tends to eat a lot of food that is high in fat and sugar</i>	Behavioral
Smokes	<i>Smokes regularly</i>	Behavioral
No physical activity	<i>Does not do any regular physical activity</i>	Behavioral
Family history	<i>Has a family history of physical and mental health problems</i>	Psych-Bio
Low serotonin	<i>Has low serotonin levels</i>	Psych-Bio

disagree” to “strongly agree” response scale. The measure comprises two sub-scales for personal mastery (four items; e.g., *What happens to me in the future mostly depends on me*) and perceived constraints (eight items; e.g., *I have little control over the things that happen to me*).

Material deprivation measures focus on whether people are struggling to afford items that are considered “necessities” by a majority of the population (Willitts, 2006). We employed a measure used by the UK Government in the UK Family Resources Survey. Respondents were presented with eight items (e.g., Keep up with bills and regular debt repayments; Enough money to replace or repair major electrical goods), and asked to indicate: 1 = *I/We have this*, 2 = *I/We would like to have this but cannot afford this at the moment*, 3 = *I/We do not want/need this at the moment* and 4 = *Does not apply*. We deviated from the preregistration when coding these responses: rather than dichotomizing participants into those who indicated they couldn't afford three or more of these items, we created a simple count measure that summarizes the number of items that could not be afforded (range 0–8). This has the advantages of providing a more sensitive continuous measure and having been compared with other material deprivation indices (Willitts, 2006). To assess lifetime experience of depression and any other mental health diagnoses, participants were also asked whether a doctor or other health professional had ever told them that they had any of conditions presented in Table S1. Due to an error, a “none of the above” option was not presented to the first 216 participants who completed the task. In order to maximize data availability, we retain these data in all subsequent analyses.

Participants were asked to indicate their political orientation using a 0 (left)–100 (right) slider adapted from Alesina and Giuliano (2009). The question stated, “*In political matters, people talk of the left and right. In the UK, the Labor party is generally described as more to the left, and the Conservative party as generally more to the right. How would you place your views on this scale, generally*

speaking?” They were also asked, “How familiar are you with the concept of “social determinants of health?” measured on a 4-point scale from “I’ve never heard of it before” to “I encounter it regularly in my professional work/personal experiences” (see Table S1). The survey ended with demographic questions on age, gender, ethnicity, and economic activity (see Table S1).

Statistical analyses

All analyses and visualizations were conducted using R. Corresponding R code and data can be accessed at: https://osf.io/z7gqs/?view_only=4f4f9413da0645558de7cca7e0f1feca.

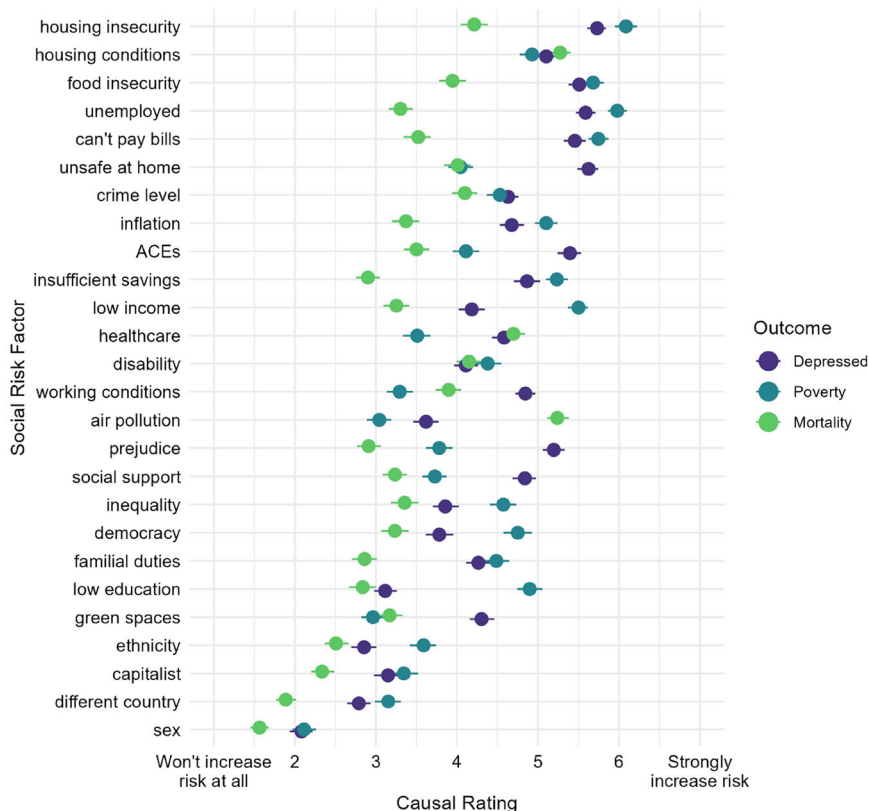
Our main analyses employed linear mixed models using the *lme4* (Bates et al., 2015) and *lmerTest* packages (Kuznetsova et al., 2017), which permit the inclusion of both fixed and random effects, to account for repeated ratings by the same participant. To address the inclusion of potentially multicollinear variables, we selected a final model using the *step()* function from *lmerTest*. Continuous predictors were standardized prior to inclusion. We retained a final model including only those predictors that improved model fit.

We conducted a number of additional preregistered analyses, which we briefly outline here and summarize below but are reported in full in the [Supporting Information](#). To examine whether individual difference variables interacted with specific sub-categories of risk factor, we created dummy variables indicating whether risk factors were (vs. were not) classified as part of the following categories (see Table 2): demographic (4 risk factors), distal (3 risk factors), psychological (8 risk factors), behavioral (7 risk factors) and psychobiological (2 risk factors). We then conducted five separate linear mixed models to assess whether ratings were influenced by membership in this category and interacted with person-level predictors. We tested specific predictions based on the social cognitive model of social class about the relationship between causal perceptions of behavioral, distal, and social risk factors and subjective status and perceived mastery, independent of whether these were retained in the final model or not. Finally, to infer the extent to which associations between risk factor ratings were comparable across the three outcomes, we examined correlations between risk factor ratings across the three conditions using *corrplot* (Wei & Simko, 2024). Pairwise Mantel tests conducted with the *vegan* package (Oksanen, 2024) assessed the strength of association between the correlation matrices for the three outcomes.

RESULTS

Social risk factors

Figure 1 shows the mean causal ratings of the social risk factors across the three outcomes. The most strongly rated social causes were living in insecure housing, living in a house with severe dampness and mold, worrying about being unable to afford food, being unemployed, and being unable to pay the bills. These were rated highest for becoming depressed and living in poverty. Being born a woman (biological sex), ethnicity, living in a capitalist economy, and growing up in a different country from where they currently live were rated as least causal for all three outcomes. To explore the correspondence in ratings of social risk factors across the three outcomes, we calculated the mean causal ratings for the 26 social risk factors for each of the three outcomes. We then used Spearman’s rank correlation to test whether the causal importance correlated between outcomes. Mean ratings of social risk factors were strongly positively correlated between the



Note: Error bars represent 95% bootstrapped confidence intervals. ACEs = Adverse Childhood Experiences. See Table 2 for full descriptions of all social risk factors.

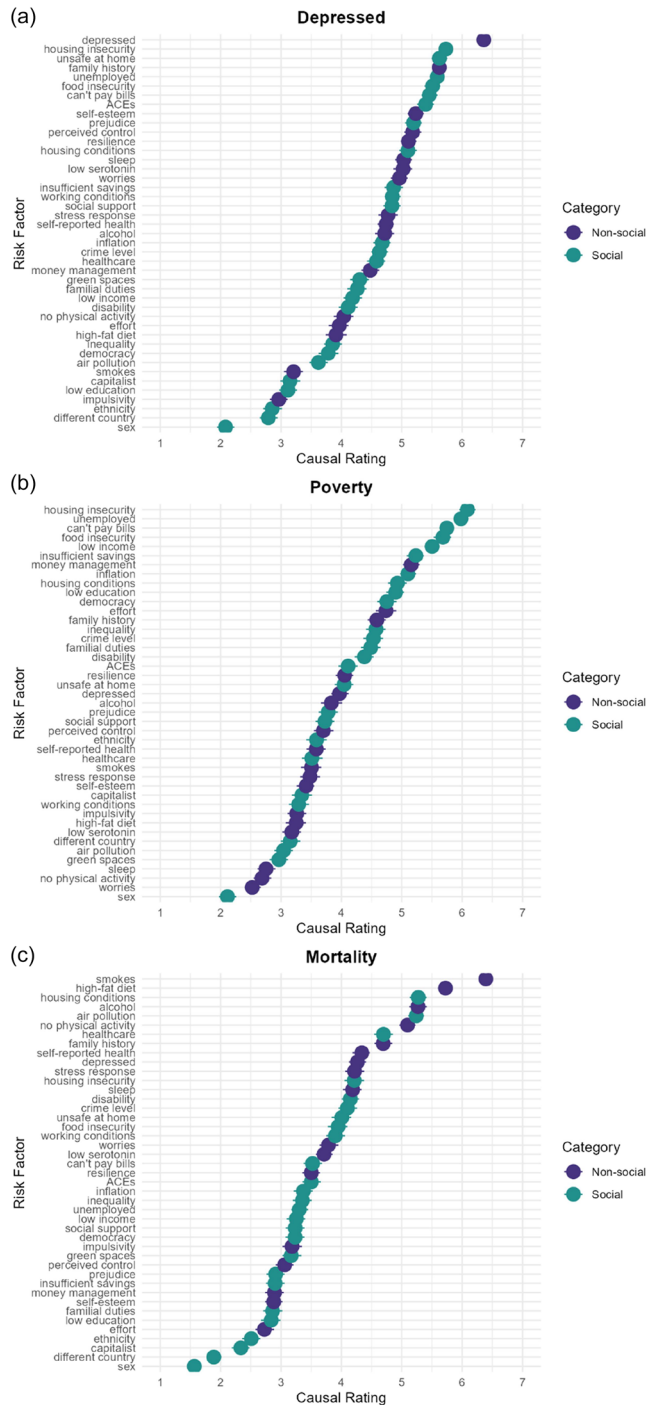
FIGURE 1 Mean causal ratings for the 26 social risk factors in the depressed ($n = 333$); poverty ($n = 333$) and mortality ($n = 334$) and conditions.

depressed and poverty ($n = 26, \rho = .55$) and depressed and mortality conditions ($n = 26, \rho = .54$), and more weakly positively correlated between poverty and mortality conditions ($n = 26, \rho = .28$).

Social and non-social risk factors

Figure 2 shows the mean causal ratings of all 43 risk factors, both social and non-social, across the three outcomes (see Figure S1 for correlations between risk factors). Causal ratings were, on average, the highest for becoming depressed. To examine whether causal ratings differed for risk factors categorized as “social”, we fitted a linear mixed model with fixed effects of social risk factor (social vs. non-social), outcome condition (reference category “depressed”), and the corresponding interaction term, along with separate random intercepts for each participant and risk factor (see Table S3). We deviated from the pre-registered analysis and included outcome condition (mortality/poverty vs. depression) as fixed rather than random effects, as well as corresponding interaction terms (mortality \times social and poverty \times social) rather than including between-subjects condition as a random effect. We did so because when running the models, it became obvious that this approach permits analysis of both the main effect of social (vs. non-social) risk factor and

FIGURE 2 Mean causal ratings for the 43 risk factors in the depressed (a, $n = 333$), poverty (b, $n = 333$) and mortality (Panel c, $n = 334$) conditions.



corresponding interactions. There was no main effect of social versus non-social risk factor ($B = -.27, 95\% \text{ CI} = -.69, .14$), but there were main effects for the outcome living in poverty (relative to depressed; $B = -1.04, 95\% \text{ CI} = -1.17, -.91$) and mortality (relative to depressed; $B = -.55, 95\% \text{ CI} = -.68, -.42$) as well as interactions (social \times poverty, $B = .98, 95\% \text{ CI} = .91, 1.04$; social \times mor-

tality, $B = -.41$, 95% CI = $-.47, -.34$). These interactions show that whilst social risk factors were rated more causal than non-social factors for judgments about living in poverty ($B = .70$, 95% CI = $.13, 1.27$), the opposite was the case for mortality ($B = -.68$, 95% CI = $-1.27, -.09$); see Figure S2. There was no difference in the perceived contribution of social versus non-social risk factors for becoming depressed ($B = -.27$, 95% CI = $-.85, .30$).

Individual difference variables

We next examined which person-level covariates related to the rated importance of social causes (RQ3). These analyses initially included all individual difference variables of interest (see Table S4) and random intercepts for each participant as well as for each combination of condition and risk factor. Stepwise backward elimination yielded a final model with fixed effects of material deprivation count ($B = .07$, 95% CI = $.01, .12$), perceived constraints ($B = .07$, 95% CI = $.02, .12$), and political orientation ($B = -.13$, 95% CI = $-.18, -.08$) only (see Tables S4 and S5 for full and stepwise models). To summarize, respondents with a higher sense of perceived constraints, who are currently experiencing more material deprivation, and who are further to the political left tended to make higher causal ratings of social determinants for all three outcomes.

We examined whether associations between these three person-level variables and causal ratings differed for social and non-social risk factors (see Table S6). Interactions with social versus non-social risk factor were significant for perceived constraints ($B = .05$, 95% CI = $.03, .08$) and political orientation ($B = -.13$, 95% CI = $-.15, .10$), indicating that the strength of the association between each of these variables and causal ratings varied for social and non-social factors. Table 3 reports these models separately for each outcome. Interactions with political orientation were consistent across the three conditions, whereas the interaction with perceived constraints was only significant for causal judgments about becoming depressed and mortality. Figure 3 displays the interaction plots for each of the three outcomes and shows how the slope of the relationship between perceived constraints/political orientation and causal ratings is generally steeper for social determinants.

Although subjective status and personal mastery were not included in the final stepwise model, we tested pre-registered hypotheses that these variables would vary positively with causal beliefs about behavioral risk factors and negatively with social and distal factors. These models, which also included interactions with perceived constraints (see Table S8), found support for only one set of the pre-registered predictions: personal mastery interacted with the risk factor category as predicted (negatively for social and social-distal and positively for behavioral factors; see Supporting Information). We found no evidence that causal beliefs for social factors were related to subjective SES.

General discussion

We find that UK lay respondents rated adverse social risk factors as causally important for the three outcomes studied: becoming depressed, living in poverty, and reduced life expectancy. This was particularly the case for judgments about becoming depressed and living in poverty, where judgments about the influence of social factors were comparable to the perceived contribution of non-social factors. This finding is particularly noteworthy for the literature on causal beliefs about depression, given that social determinants have historically been the “neglected of the three

TABLE 3 Outcomes of linear mixed model examining interactions between social (vs. non-social) factor category and perceived constraints, material deprivation and political orientation for each of the three outcomes.

Predictors	Depression			Poverty			Mortality		
	Estimates	CI	<i>p</i>	Estimates	CI	<i>p</i>	Estimates	CI	<i>p</i>
(Intercept)	4.66	4.21 to 5.12	<.001	3.63	.18 to 4.08	<.001	4.11	3.65 to 4.58	<.001
Social [vs. non-social]	-.27	-.85 to .30	.350	.70	.13 to 1.27	.016	-.68	-1.27 to -.09	.024
Perceived constraints	.04	-.05 to .12	.396	.06	-.03 to .15	.201	.03	-.07 to .13	.594
Material deprivation	.09	.00 to .17	.039	.00	-.09 to .09	.964	.14	.04 to .24	.006
Political orientation	-.06	-.14 to .02	.162	-.03	-.12 to .06	.548	-.06	-.15 to .04	.272
Social × Perceived constraints	.05	.01 to .09	.012	.03	-.01 to .07	.134	.07	.03 to .11	<.001
Social × Material deprivation	-.04	-.08 to .00	.077	.01	-.03 to .05	.587	-.03	-.07 to .01	.089
Social × Political orientation	-.09	-.13 to -.05	<.001	-.20	-.24 to -.16	<.001	-.09	-.13 to -.05	<.001
Random effects									
σ^2		1.33			1.45			1.18	
τ_{00} ID		.49			.58			.72	
τ_{00} factor		.88			.86			.93	
ICC		.51			.50			.58	
N _{ID}		333			333			334	
N _{factor}		43			43			43	
Observations		14337			14361			14424	
Marginal R^2 /conditional R^2		.018/.516			.052/.525			.053/.605	

Note: Bold values in Table 3 indicate $p < 0.05$.

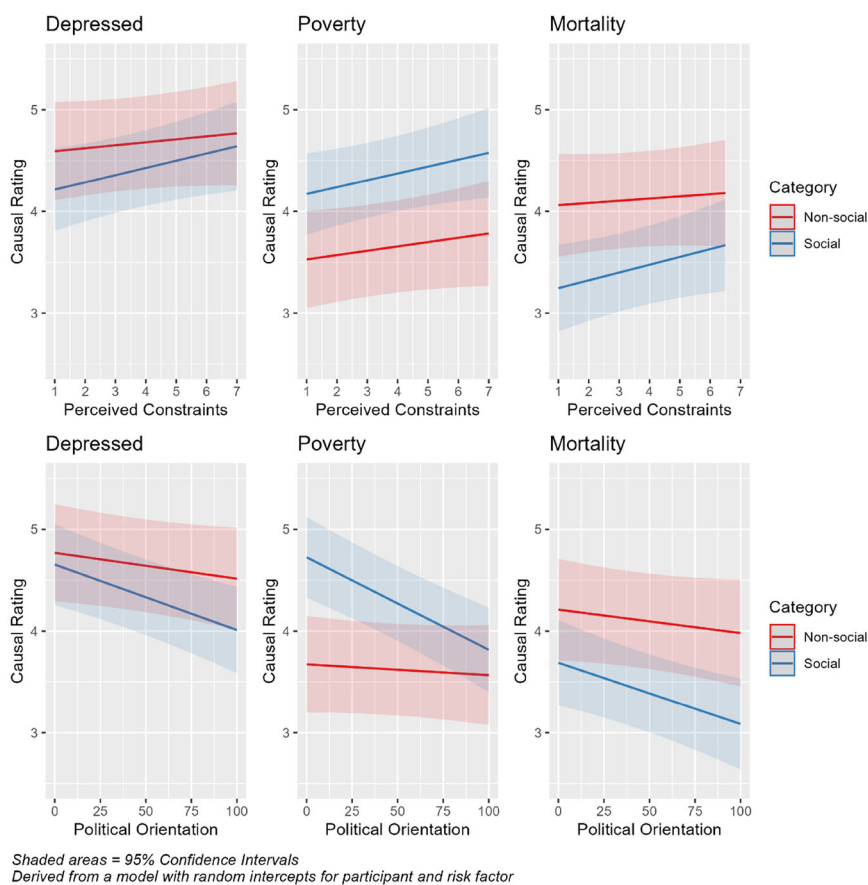


FIGURE 3 Predicted mean causal ratings as a function of outcome and risk factor category across different levels of perceived constraints (upper panel) and political orientation (lower panel).

Note: Predicted mean causal ratings were plotted from models in which continuous predictors were not standardised.

[biopsychosocial] cousins”, at least in psychological work on mental health (Cruwys et al., 2023). The findings challenge the relative neglect of social determinants within the biopsychosocial model of mental health, at least with respect to depression: public perceptions align more closely with approaches that consider social conditions as crucial. Specifically, living in insecure housing, feeling unsafe, being unemployed, food insecure and being unable to pay the bills were viewed as the most causally influential social risk factors for someone becoming depressed, and were rated either comparably to or higher than risk factors aligned with traditional biomedical causes such as family histories of mental ill-health and low serotonin. The strength of the perceived link between socioeconomic adversity and depression accords with evidence that UK respondents easily grasp the positive public mental health impacts of policies designed to reduce poverty (Bridger & Nettle, 2022).

The causal role of social risk factors was rated lower when participants made judgments about mortality. This corresponds with observations in public health that publics tend to place less influence on social versus non-social factors when evaluating mortality risks (Haslam et al., 2018; Robert & Booske, 2011). This comparative neglect may appear because (i) social risk factors are crowded out relative to biological and fatalistic explanations for biological ill-health and mor-

tality (Bridger et al., 2024; Jensen & Petersen, 2016; Schnittker, 2015) and (ii) lay models may approximate academic thinking about how social causes influence bodily health. For instance, Karunamuni et al. (2021) analyze the extent to which extant academic research underpins each of the six causal pathways between the three systems of the biopsychosocial model (e.g. bio to social, social to bio, psych to bio). On the basis of their analysis of the evidence, they assert that social to biological pathways are primarily mediated by psychological factors. The current findings depict UK lay perspectives that broadly correspond with this, in that social factors were perceived to be strongly influential for a psychological domain outcome (becoming depressed) but less so on a biological domain outcome (mortality). This also corresponds with qualitative meta-ethnographic methods of lay perceptions in UK samples, which reveal a complex understanding of socioeconomic health inequalities in which social determinants influence bodily health by way of psychological mechanisms such as stress and low control (Smith & Anderson, 2018).

Which social risk factors are perceived to be most causally influential?

Across outcomes, housing insecurity, housing conditions, and food insecurity were the social factors perceived to be most causally influential, followed by being unemployed, living in poverty, and feeling physically or emotionally unsafe at home. This pattern corresponds well with a recent scoping analysis of social determinants of health screening tools in the United States (US), which found that the domains of housing, safety/violence, and food/nutrition were measured most consistently across different tools (Neshan et al., 2024). This correspondence is noteworthy because of the different cultural and policy contexts that we are comparing; in the UK there is no individual-level screening of social determinants within healthcare contexts as there is in the US (Moscrop et al., 2020). We conclude that social risk factors signal clear and substantial risks to health and wellbeing to experts who have developed screening tools, and lay persons alike.

Distal determinants such as inequality, political democracy, and economic system were rated as less causally strong. This accords with the assumption that the structural nature of these upstream political and economic determinants (Dawes et al., 2022) leads them to be viewed as less causally difference-making (Amemiya et al., 2023). Education level was ranked relatively low for both becoming depressed and mortality. This is noteworthy given that this socioeconomic measure is used widely for depicting socioeconomic health inequalities, particularly in the US (Case & Deaton, 2024) and the Netherlands (Verra et al., 2024). Emphasis on education rather than income as a social determinant of health has been linked to programs for addressing health inequality that emphasize individual attributes rather than structural processes (Ervin & Raphael, 2025). Although neither low income or education were perceived to be strong causal contributors to depression and mortality, income was nonetheless viewed as the more potent of the two in this lay sample.

Poor social support was rated relatively low as a social risk factor. This replicates Haslam et al. (2018) findings that social support is not viewed as a significant causal contributor for health, but adds further nuance. Firstly, this relatively low weighting of social support as a causal influence was especially apparent for judgments about mortality. Secondly, when including a broader array of “social” factors it becomes clear that it is not all social influences that are causally discounted; a considerable number of other social determinants were rated as more influential. Social support is not an appropriate or sufficient proxy for the wide array of factors that are often inferred under the “social” label.

Biological sex, ethnicity, and being from a different country were consistently rated as low in causal influence. This reveals a gap between lay views and empirical evidence when considering robust evidence for greater rates of mental ill-health and poverty for women, immigrants, and people of color in the UK (Kirkbride et al., 2024). Although they generally rated experiences of prejudice and discrimination as causally influential, participants did not rate identity-based categories such as sex and ethnicity were strongly causal in and of themselves.

Which individual differences predict perceptions of social causes?

In contrast to predictions derived from the social cognitive model of social class (Kraus et al., 2012), we found little evidence that subjective SES is linked to causal beliefs about social risk factors. This presents a challenge for that model and the notion that SES systematically relates to social explanation, or at least versions of the model assessed by an individual's view of their rank in society. We did find evidence that sense of control—which varies with social class (John et al., 2024)—was related to causal ratings that were aligned with pre-registered predictions. Being high in perceived constraints was positively related to causal beliefs about social factors, particularly for judgments about becoming depressed and living in poverty. We also found evidence that individuals with high levels of personal mastery tended to perceive relatively less causal influence for social and distal factors and relatively more for behavioral (vs. non-behavioral) risk factors.

Participants currently experiencing material deprivation provided a greater weighting for all causal factors regardless of category. This was also the case specifically for behavioral causes such as money management, effort, and smoking. This is counterintuitive, in light of the expectation that lived experiences of poverty should make social causes more salient than individual-level lifestyle factors (Bridger, 2023; von dem Knesebeck et al., 2018). It may be that the reality and pressures of living in poverty lead factors of all kinds, including individual behaviors, to loom large, larger even than the social contexts that give rise to them. Given we did not anticipate this pattern, it is advisable to ensure it replicates before interpreting it further.

Of the individual difference-level variables we studied, political ideology was most consistently related to the perception of social risk factors. For all three outcomes, respondents who reported being on the political right rated social causes as less influential than those on the left. This replicates and extends previous social psychological and political science research (Alesina & Giuliano, 2009; Cozzarelli et al., 2001; Shirazi & Biel, 2005; Skitka et al., 2002; Zucker & Weiner, 1993) including studies of politically-polarized resistance to social determinants framing in the US (Gollust & Cappella, 2014; Gollust et al., 2009). Even without directly assessing support for interventions or policy, political views consistently relate to perceptions of the role of social forces. This may be in part because social causes (e.g., ethnicity, sex, capitalist, inequality) are more likely to intersect with politically-contested issues or to operate as partisan cues (Westwood & Peterson, 2020). Further work is needed to unpick this, as well as the degree to which political views shape these perceptions and the inverse causal pathway from causal beliefs to political ideology.

Implications

The present work provides the first direct link between social cognition of causal beliefs and applied literatures on social determinants of health (Kirkbride et al., 2024). This is particularly important in light of the increasing advocacy for focusing on the social determinants of mental

health in UK health policy (Handerer et al., 2024) and the British Psychological Society's ongoing calls for action on prevention and early intervention to address mental health (BPS, 2025; Hagan et al., 2022). A number of policy implications follow. Academics and policymakers should not assume that lay persons undervalue the causal influence of social risk factors in the UK. The influence of social factors can, in fact, be very evident to lay people, particularly when thinking about feeling depressed, challenging the idea that public awareness of social determinants of mental health needs to be raised. Rather, we find that UK lay respondents already have a clear understanding of the importance of these factors, and we infer that they may already be broadly receptive to policies that intervene upon social determinants. We note three further stipulations. Firstly, the impact of social factors on mortality was less well-recognized. Those advocating for a greater focus on social influences and corresponding interventions will achieve more uptake by focusing on mental health rather than consequences for survival. At the same time, initiatives to improve public literacy and understanding of the social determinants should concentrate their efforts on making clear how they link to bodily health and mortality. Secondly, social determinants are not all perceived equally in causal terms. Issues of housing security, food security and threat to emotional and physical safety are particularly salient, whereas more distal and identity-related factors were perceived to be less causally influential. Frames that highlight these immediate threats to safety and wellbeing may be of most use when advocating for social interventions. Third, the perceived role of the "social" remains politically polarized regardless of what outcome is under study, extending US findings (Crist et al., 2023; Gollust et al., 2009; Skitka et al., 2002) to the UK political context. Resistance to social interventions from those who identify further to the right is highly likely, and further work should study when and why this is, as well as whether certain framings of social determinants that are less partisan can be employed.

Limitations and future directions

Although we included a wider range of social risk factors than in any previous causal belief studies, there remain many further factors under the broad heading of "the conditions in which people are born, grow, live, work and age" (Alderwick & Gottlieb, 2019; Handerer et al., 2022) that could have been included. Future work could consider additional factors, or even add further granularity on specific social risk factors. For instance, we studied perceptions of the effects of "prejudice and discrimination", which is a crude description that belies different kinds of prejudice and reasons for being discriminated against, which have been found to have a differential impact on psychological well-being (Schmitt et al., 2014). Future research might examine perceptions of specific discrimination experiences, and link lay perceptions with the role of discrimination in academic literatures on both racialized and socioeconomic health inequalities (Kirkbride et al., 2024; Link et al., 2024). Similarly, our social support risk factor simplifies the complex multidimensionality of the construct, and certain aspects of social support (e.g., network size, emotional support, financial support) may be perceived as more causally influential for certain outcomes than others.

We will next highlight some aspects of the work that should be interpreted with caution. Public beliefs about the causes of depression have been shown to systematically differ from those for other mental diagnoses such as schizophrenia (Guley et al., 2025; Jorm et al., 1997). Social causes may be rated less strongly for other mental health diagnoses. We also did not make explicit to participants whether the "becoming depressed" outcome was an acute or chronic outcome nor whether this would be sufficient to meet diagnostic criteria for an episode of major depression

or related mood disorders with depression in the name (e.g., minor depression). We were careful to recruit a large and non-student sample of UK adults with diverse age, ethnicity, and socioeconomic backgrounds. Causal beliefs are known to vary with culture though (Ahuvia et al., 2024; Schnittker, 2015) and it is therefore important not to make claims about the generalizability about causal beliefs in non-UK samples on the basis of the current data.

Conceptual boundaries between “social” and “non-social” risk factors are often fuzzy (Brossard et al., 2020). We adopted a broad definition of “social” and focused on distal and demographic factors and acknowledge that others might have drawn these lines differently, an issue that arises precisely because of the complex and interconnected nature of these phenomena. For example, low education or financial hardship also involve psychological and biological elements. We see fruitful alternatives to be explored in future research, including attribution dimensions like locus, stability, and controllability (Weiner, 1985), which may offer a psychologically intuitive framework for understanding social determinants.

We wish to end with two related reflections. We examined perceptions of individual-level risk factors to compare both social and non-social risk factors because we recognized it was not possible to compare like for like within the existing literature. We do not wish to give the impression that social determinants should be conceived of, modeled, or intervened at the individual level, a perspective aligned with the consensus view that social determinants are most appropriately viewed and addressed with multilevel systems-based approaches and interventions (Bjørndal et al., 2024; Chunara et al., 2024; Kirkbride et al., 2024). Relatedly, it remains an empirical and important question as to which level of framing of societal issues (individual vs. macro-level) is most effective for inducing political action and support. We hope future work will answer this.

CONCLUSION

We find that a UK general public sample is alive to the causal contribution of social factors, particularly to becoming depressed and living in poverty. Lay ratings of the causal influence of specific social factors correspond with existing screening tools in focusing on housing conditions, exposure to violence, food security, and poverty, whilst distal and identity-related factors were generally perceived to be less causal. The exception to this was causal beliefs about mortality where adverse social factors were weighted least causally strong. This study advances theoretical discussions on causal beliefs by challenging deficit models that assume public underestimation of social determinants. The nuanced patterns observed suggest that lay understandings of social factors are more sophisticated than previously recognized, prompting a re-evaluation of how health education and social interventions should (or maybe could) be framed.

ACKNOWLEDGMENTS

This work was supported by a Talent Development Award (TDA23-230038) titled “*Perceived Causal Relations of Determinants of Health: Adapting Network Analytic Approaches*” awarded by the British Academy to Dr Emma K. Bridger. All data and corresponding analysis scripts are freely available on an external open access repository which is linked to in the manuscript. Independent review and ethical approval were obtained from the corresponding author’s institution (Ref: 0352). For the purpose of open access, the authors have applied a Creative Commons Attribution license (CC BY) to any Author Accepted Manuscript version arising from this submission.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in OSF at https://osf.io/z7gqs/files/osfstorage?view_only=4f4f9413da0645558de7cca7e0f1feca.

ORCID

Emma K. Bridger  <https://orcid.org/0000-0002-4726-4068>

Daniel Nettle  <https://orcid.org/0000-0001-9089-2599>

REFERENCES

- Abdalla, S. M., Hernandez, M., Fazaludeen Koya, S., Rosenberg, S. B., Robbins, G., Magana, L., Nsoesie, E. O., Sabin, L., & Galea, S. (2022). What matters for health? Public views from eight countries. *BMJ Global Health*, 7(6), e008858. <https://doi.org/10.1136/bmjgh-2022-008858>
- Adler, N. E., Epel, E., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology*, 19(6), 586–592.
- Ahuvia, I. L., Sotomayor, I., Kwong, K., Lam, F. W., Mirza, A., & Schleider, J. L. (2024). Causal beliefs about mental illness: A scoping review. *Social Science & Medicine*, 345, 116670. <https://doi.org/10.1016/j.socscimed.2024.116670>
- Alderwick, H., & Gottlieb, L. (2019). Meanings and misunderstandings: A social determinants of health lexicon for health care systems. *The Milbank Quarterly*, 97(2), 407–419.
- Alesina, A. F., & Giuliano, P. (2009). Preferences for Redistribution (Working Paper 14825). National Bureau of Economic Research.
- Amemiya, J., Mortenson, E., Heyman, G. D., & Walker, C. M. (2023). Thinking structurally: A cognitive framework for understanding how people attribute inequality to structural causes. *Perspectives in Psychological Science*, 18(2), 259–274. <https://doi.org/10.1177/17456916221093593>
- Angermeyer, M. C., Holzinger, A., Carta, M. G., & Schomerus, G. (2011). Biogenetic explanations and public acceptance of mental illness: Systematic review of population studies. *British Journal of Psychiatry*, 199(5), 367–372. <https://doi.org/10.1192/bjp.bp.110.085563>
- Averous, P., Charbonnier, E., Lagouanelle-Simeoni, M. C., Proserpi, A., & Dany, L. (2018). Illness perceptions and adherence in bipolar disorder: An exploratory study. *Comprehensive Psychiatry*, 80, 109–115.
- Barnwell, P. V., Mann, S. L., Fedorenko, E. J., Wheeler, C., Everett, B., & Contrada, R. J. (2022). Lay beliefs about the causes and treatment of depression: Tests of measurement models and associations. *Journal of Affective Disorders*, 299, 93–101.
- Bastias, F., Peter, N., Goldstein, A., Sanchez-Montanez, S., Rohmann, A., & Landmann, H. (2024). Measuring attributions 50 years on: From within-country poverty to global inequality. *Behavioral Sciences*, 14(3), 186. <https://doi.org/10.3390/bs14030186>
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1–48. <https://doi.org/10.18637/jss.v067.i01>
- Bjørndal, L. D., Ebrahimi, O. V., Lan, X., Nes, R. B., & Roysamb, E. (2024). Mental health and environmental factors in adults: A population-based network analysis. *American Psychologist*, 79(3), 368–383. <https://doi.org/10.1037/amp0001208>
- Blaaxter, M. (1997). Whose fault is it? People's own conceptions of the reasons for health inequalities. *Social Science & Medicine*, 44(6), 747–756.
- Bridger, E., & Daly, M. (2017). Does cognitive ability buffer the link between childhood disadvantage and adult health? *Health Psychology*, 36(10), 966–976. <https://doi.org/10.1037/hea0000538>
- Bridger, E. K. (2023). Subjective socioeconomic status and agreement that health is determined by distal and proximal factors. *International Journal of Psychology*, 58(6), 536–544. <https://doi.org/10.1002/ijop.12928>
- Bridger, E. K., & Nettle, D. (2022). Public perceptions of the effectiveness of income provision on reducing psychological distress. *Journal of Public Mental Health*, 21(3), 208–217.
- Bridger, E. K., Tufte-Hewett, A., Comerford, D., & Nettle, D. (2024). Why are socioeconomic health inequalities unacceptable? Studying the influence of explanatory framings on cognitive appraisals. *Analyses of Social Issues and Public Policy*, 24(3), 710–733. <https://doi.org/10.1111/asap.12415>

- British Psychological Society. (2025). "Investment in early intervention and prevention services vital," BPS urges government ahead of Spring Budget. British Psychological Society. <https://www.bps.org.uk/news/investment-early-intervention-and-prevention-services-vital-bps-urges-government-ahead-spring>
- Brossard, B., Cruwys, T., Zhou, H., & Hellenen-Simpson, G. (2020). What do we mean by "social" in mental health research? *Social Science & Medicine*, *261*, 113233. <https://doi.org/10.1016/j.socscimed.2020.113233>
- Cannon, M., Crede, M., Kimber, J. M., Brunkow, A., Nelson, R., & McAndrew, L. M. (2022). The common-sense model and mental illness outcomes: A meta-analysis. *Clinical Psychology & Psychotherapy*, *29*(4), 1186–1202. <https://doi.org/10.1002/cpp.2721>
- Case, A., & Deaton, A. (2024). Accounting for the widening mortality gap between American Adults with and without a BA. *Brookings Papers on Economic Activity*, *54*, 1–78.
- Chunara, R., Gjonaj, J., Immaculate, E., Wanga, I., Alaro, J., Scott-Sheldon, L. A. J., Mangeni, J., Mwangi, A., Vedanthan, R., & Hogan, J. (2024). Social determinants of health: The need for data science methods and capacity. *Lancet Digital Health*, *6*(4), e235–e237. [https://doi.org/10.1016/S2589-7500\(24\)00022-0](https://doi.org/10.1016/S2589-7500(24)00022-0)
- Cozzarelli, C., Wilkinson, A. V., & Tagler, M. J. (2001). Attitudes toward the poor and attributions for poverty. *Journal of Social Issues*, *52*(2), 207–227.
- Crist, J. D., Schlegel, R. J., Salter, P. S., Rivera, G. N., Noor, M., Perez, M. J., & Coger, C. (2023). Internal, external, genetic, or cultural? Lay theories about racial health disparities predict perceived threat, adherence, and policy support. *Social and Personality Psychology Compass*, *17*(12), e12896. <https://doi.org/10.1111/spc3.12896>
- Cruwys, T., Brossard, B., Zhou, H., Hellenen-Simpson, G., Klik, K. A., Van Rooy, D., Batterham, P. J., & CEAR, A. L. (2023). Disciplinary differences in the study of the relationship between social variables and mental health: A systematic mapping review. *Health*, *27*(5), 810–828. <https://doi.org/10.1177/13634593211063049>
- Dahlgren, G., & Whitehead, M. (2021). The Dahlgren-Whitehead model of health determinants: 30 years on and still chasing rainbows. *Public Health*, *199*, 20–24. <https://doi.org/10.1016/j.puhe.2021.08.009>
- Dawes, D. E., Amador, C. M., & Dunlap, N. J. (2022). The political determinants of health: A global panacea for health inequities. In *Oxford Research Encyclopedia of Global Public Health*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190632366.013.466>
- Engstrom, H. R., & Laurin, K. (2024). Lower social class, better social skills? A registered report testing diverging predictions from the rank and cultural approaches to social class. *Journal of Experimental Social Psychology*, *111*, 104577. <https://doi.org/10.1016/j.jesp.2023.104577>
- Ervin, A., & Raphael, D. (2025). Liberal/individualized versus materialist/structuralist approaches to addressing social and health inequalities: Education and income as social determinants of health. *Community Health Equity Res Policy*. Advance online publication. <https://doi.org/10.1177/27525351251316086>
- Feagin, J. R. (1972). Poverty: We still believe that God helps those who help themselves. *Psychology Today*, *6*(6), 101–110.
- Galobardes, B., Lynch, J. W., & Smith, G. D. (2008). Is the association between childhood socioeconomic circumstances and cause-specific mortality established? Update of a systematic review. *Journal of Epidemiology & Community Health*, *62*(5), 387–390. <https://doi.org/10.1136/jech.2007.065508>
- Gollust, S. E., & Cappella, J. N. (2014). Understanding public resistance to messages about health disparities. *Journal of Health Communications*, *19*(4), 493–510. <https://doi.org/10.1080/10810730.2013.821561>
- Gollust, S. E., Lantz, P. M., & Ubel, P. A. (2009). The polarizing effect of news media messages about the social determinants of health. *American Journal of Public Health*, *99*(12), 2160–2167. <https://doi.org/10.2105/AJPH.2009.161414>
- Guley, O., Heller, J., Pasquinelli, E., & Nettle, D. (2025). Do people perceive mental disorders as a part of the true self? Implications and variations across seven disorder. https://doi.org/10.31234/osf.io/z3hbs_v2
- Hagan, T., Bostock, J., Harris, C., & Zlotowitz, S. (2022). How can we address the negative impact of inequalities on our mental health? New BPS guidance to inform prevention, inequality and mental health. *Clinical Psychology Forum*, *1*(1), 29–32. <https://doi.org/10.53841/bpspcf.2022.1.356.29>
- Hagmayer, Y., & Engelmann, N. (2014). Causal beliefs about depression in different cultural groups—what do cognitive psychological theories of causal learning and reasoning predict? *Frontiers in Psychology*, *5*, 1303.
- Handerer, F., Kinderman, P., Nevard, I., & Tai, S. (2024). Development and content validation of a questionnaire to assess the social determinants of mental health in clinical practice. *Frontiers in Psychiatry*, *15*, 1377751. <https://doi.org/10.3389/fpsy.2024.1377751>

- Handerer, F., Kinderman, P., Shafti, M., & Tai, S. (2022). A scoping review and narrative synthesis comparing the constructs of social determinants of health and social determinants of mental health: Matryoshka or two independent constructs? *Frontiers in Psychiatry, 13*, 848556. <https://doi.org/10.3389/fpsy.2022.848556>
- Handerer, F., Kinderman, P., Timmermann, C., & Tai, S. J. (2021). How did mental health become so biomedical? The progressive erosion of social determinants in historical psychiatric admission registers. *Historical Psychiatry, 32*(1), 37–51. <https://doi.org/10.1177/0957154120968522>
- Haslam, N., Bastian, B., Bain, P., & Kashima, Y. (2006). Psychological essentialism, implicit theories, and intergroup relations. *Group Processes & Intergroup Relations, 9*(1), 63–76. <https://doi.org/10.1177/1368430206059861>
- Haslam, N., & Kvaale, E. P. (2015). Biogenetic explanations of mental disorder: The mixed-blessings model. *Current Directions in Psychological Science, 24*(5), 399–404.
- Haslam, S. A., Haslam, C., Jetten, J., Cruwys, T., & Bentley, S. (2019). Group life shapes the psychology and biology of health: The case for a sociopsychobio model. *Social and Personality Psychology Compass, 13*(8), e12490. <https://doi.org/10.1111/spc3.12490>
- Haslam, S. A., McMahon, C., Cruwys, T., Haslam, C., Jetten, J., & Steffens, N. K. (2018). Social cure, what social cure? The propensity to underestimate the importance of social factors for health. *Social Science & Medicine, 198*, 14–21.
- Jensen, C., & Petersen, M. B. (2016). The deservingness heuristic and the politics of health care. *American Journal of Political Science, 61*(1), 68–83. <https://doi.org/10.1111/ajps.12251>
- Jessen, L., Koehna, S., Nuess, P., & Ruhose, J. (2024). Socioeconomic inequality in life expectancy: Perception and policy demand. IZA Institute of Labor Economics Working Paper.
- John, M., Boileau, L. L., & Bless, H. (2024). Effect of social class on personal control beliefs. *Journal of Personality, 92*(4), 1086–1099. <https://doi.org/10.1111/jopy.12872>
- Johnson, M. T., Johnson, E. A., Nettle, D., & Pickett, K. E. (2021). Designing trials of Universal Basic Income for health impact: Identifying interdisciplinary questions to address. *Journal of Public Health, 44*(2), 408–416. <https://doi.org/10.1093/pubmed/fdaa255>
- Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). Public beliefs about causes and risk factors for depression and schizophrenia. *Social Psychiatry and Psychiatric Epidemiology, 32*, 143–148. <https://doi.org/10.1007/BF00794613>
- Karunamuni, N., Imayama, I., & Goonetilleke, D. (2021). Pathways to well-being: Untangling the causal relationships among biopsychosocial variables. *Social Science & Medicine, 272*, 112846. <https://doi.org/10.1016/j.socscimed.2020.112846>
- Kim, N. S., Johnson, S. G. B., Ahn, W. K., & Knobe, J. (2017). The effect of abstract versus concrete framing on judgments of biological and psychological bases of behavior. *Cognitive Research: Principles & Implications, 2*(1), 17. <https://doi.org/10.1186/s41235-017-0056-5>
- Kirkbride, J. B., Anglin, D. M., Colman, I., Dykxhoorn, J., Jones, P. B., Patalay, P., Pitman, A., Sonesson, E., Steare, T., Wright, T., & Griffiths, S. L. (2024). The social determinants of mental health and disorder: Evidence, prevention and recommendations. *World Psychiatry, 23*, 58–90.
- Kluegel, J., & Smith, E. (1986). *Beliefs about inequality: American's views of what is and what ought to be*. Aldine de Gruyter.
- Kraus, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality & Social Psychology, 97*(6), 992–1004. <https://doi.org/10.1037/a0016357>
- Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012). Social class, solipsism, and contextualism: How the rich are different from the poor. *Psychological Review, 119*(3), 546–572. <https://doi.org/10.1037/a0028756>
- Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2017). lmerTest package: Tests in linear mixed effects models. *Journal of Statistical Software, 82*(13), 1–26. <https://doi.org/10.18637/jss.v082.i13>
- Lachman, M. E., & Weaver, S. L. (1998). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology, 74*(3), 763–773. <https://doi.org/10.1037/0022-3514.74.3.763>
- Link, B. G., Garcia, S. J., Firat, R., La Scalla, S., & Phelan, J. C. (2024). Socioeconomic-status-based disrespect, discrimination, exclusion, and shaming: a potential source of health inequalities? *Journal of Health & Social Behavior, 65*(4), 558–576. <https://doi.org/10.1177/00221465241232658>

- Lynch, J. (2023). The political economy of health: Bringing political science in. *Annual Review of Political Science*, 26(1), 389–410. <https://doi.org/10.1146/annurev-polisci-051120-103015>
- Macintyre, S., McKay, L., & Ellaway, A. (2006). Lay concepts of the relative importance of different influences on health; are there major socio-demographic variations? *Health Education Research*, 21(5), 731–739. <https://doi.org/10.1093/her/cyl015>
- Mackenbach, J. P. (2011). Can we reduce health inequalities? An analysis of the English strategy (1997–2010). *Journal of Epidemiology & Community Health*, 65(7), 568–575.
- Matsumoto, M., & Nakayama, K. (2017). Development of the health literacy on social determinants of health questionnaire in Japanese adults. *BMC Public Health [Electronic Resource]*, 17(1), 30. <https://doi.org/10.1186/s12889-016-3971-3>
- McAndrew, L. M., Martin, J. L., Friedlander, M., Shaffer, K., Breland, J., Slotkin, S., & Leventhal, H. (2018). The common sense of counseling psychology: Introducing the common-sense model of self-regulation. *Counselling Psychology Quarterly*, 31(4), 497–512. <https://doi.org/10.1080/09515070.2017.1336076>
- Moscrop, A., Ziebland, S., Bloch, G., & Iraola, J. R. (2020). If social determinants of health are so important, shouldn't we ask patients about them? *The British Medical Journal*, 371, m4150. <https://doi.org/10.1136/bmj.m4150>
- Neshan, M., Padmanaban, V., Tsilimigras, D. I., Obeng-Gyasi, S., Fareed, N., & Pawlik, T. M. (2024). Screening tools to address social determinants of health in the United States: A systematic review. *Journal of Clinical & Translational Science*, 8(1), e60. <https://doi.org/10.1017/cts.2024.506>
- Nettle, D., Frankenhuys, W. E., & Panchanathan, K. (2023). Biology, society, or choice: How do non-experts interpret explanations of behaviour? *Open Mind*, 7, 625–651.
- Niederdeppe, J., Bu, Q. L., Borah, P., Kindig, D. A., & Robert, S. A. (2008). Message design strategies to raise public awareness of social determinants of health and population health disparities. *The Milbank Quarterly*, 86(3), 481–513.
- Nolan, A., & O'Connor, C. (2019). The effect of causal attributions for depression on help-seeking and treatment preferences. *Journal of Affective Disorders*, 257, 477–485. <https://doi.org/10.1016/j.jad.2019.07.017>
- Oksanen, J. (2024). *Vegan: Community ecology package*. <https://github.com/vegandevs/vegan>
- Ortiz, S. E., Adler, G. J., & Johannes, B. L. (2020). Economic elites and support for housing affordability policy: How a housing-health belief matters. *Political Behavior*, 44(2), 505–533. <https://doi.org/10.1007/s11109-020-09623-4>
- Park, D., & Kim, S. (2015). Time to move on? When entity theorists perform better than incremental theorists. *Personality and Social Psychology Bulletin*, 41(5), 736–748. <https://doi.org/10.1177/0146167215578028>
- Piff, P. K., Wiwad, D., Robinson, A. R., Aknin, L. B., Mercier, B., & Shariff, A. (2020). Shifting attributions for poverty motivates opposition to inequality and enhances egalitarianism. *Nature Human Behavior*, 4(5), 496–505. <https://doi.org/10.1038/s41562-020-0835-8>
- Popay, J., Bennett, S., Thomas, C., Williams, G., Gatrell, A., & Bostock, L. (2003). Beyond 'beer, fags, egg and chips'? Exploring lay understandings of social inequalities in health. *Sociology of Health & Illness*, 25(1), 1–23.
- Ranney, M. A., & Clark, D. (2016). Climate change conceptual change: Scientific information can transform attitudes. *Topics of Cognitive Science*, 8(1), 49–75. <https://doi.org/10.1111/tops.12187>
- Read, J., Haslam, N., Sayce, L., & Davies, E. (2006). Prejudice and schizophrenia: A review of the 'mental illness is an illness like any other' approach. *Acta Psychiatrica Scandinavica*, 114(5), 303–318. <https://doi.org/10.1111/j.1600-0447.2006.00824.x>
- Ridley, M., Rao, G., Schilbach, F., & Patel, V. (2020). Poverty, depression, and anxiety: Causal evidence and mechanisms. *Science*, 370(6522), eaay0214. <https://doi.org/10.1126/science.aay0214>
- Robert, S. A., & Booske, B. C. (2011). US opinions on health determinants and social policy as health policy. *American Journal of Public Health*, 101(9), 1655–1663. <https://doi.org/10.2105/AJPH.2011.300217>
- Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin*, 140(4), 921.
- Schnittker, J. (2015). The politics of health beliefs: Cross-national evidence. In *Education, social factors, and health beliefs in health and health care services* (Vol. 33, pp. 17–42). Emerald Group Publishing Limited.
- Schomerus, G., Matschinger, H., & Angermeyer, M. C. (2013). Causal beliefs of the public and social acceptance of persons with mental illness: A comparative analysis of schizophrenia, depression and alcohol dependence. *Psychological Medicine*, 44(2), 303–314. <https://doi.org/10.1017/S003329171300072X>

- Shirazi, R., & Biel, A. (2005). Internal-external causal attributions and perceived government responsibility for need provision. *Journal of Cross-Cultural Psychology*, 36(1), 96–116. <https://doi.org/10.1177/0022022104271428>
- Skitka, L. J., Mullen, E., Griffin, T., Hutchinson, S., & Chamberlin, B. (2002). Dispositions, scripts, or motivated correction? Understanding ideological differences in explanations for social problems. *Journal of Personality & Social Psychology*, 83(2), 470–487. <https://doi.org/10.1037/0022-3514.83.2.470>
- Smith, K. E., & Anderson, R. (2018). Understanding lay perspectives on socioeconomic health inequalities in Britain: A meta-ethnography. *Sociology of Health & Illness*, 40(1), 146–170. <https://doi.org/10.1111/1467-9566.12629>
- Thimm-Kaiser, M., Benzekri, A., & Guilamo-Ramos, V. (2023). Conceptualizing the mechanisms of social determinants of health: A Heuristic framework to inform future directions for mitigation. *The Milbank Quarterly*, 101(2), 486–526. <https://doi.org/10.1111/1468-0009.12642>
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117(2), 440–463. <https://doi.org/10.1037/a0018963>
- Tsai, I. C., Kao, Y.-C., & Lien, Y.-J. (2022). Serial indirect effects of psychosocial causal beliefs and stigma on help-seeking preferences for depression. *Current Psychology*, 42(16), 13637–13647. <https://doi.org/10.1007/s12144-021-02683-7>
- Verra, S. E., Poelman, M. P., de Wit, J., & Kamphuis, C. B. M. (2024). An unequal health policy landscape? Examining socioeconomic differences in acceptability and preferences for policies that aim to reduce socioeconomic inequalities in health. *Journal of Epidemiology & Community Health*, 78(11), 721–728. <https://doi.org/10.1136/jech-2024-222449>
- von dem Knesebeck, O., Vonneilich, N., & Kim, T. J. (2018). Public awareness of poverty as a determinant of health: Survey results from 23 countries. *International Journal of Public Health*, 63, 165–172.
- Wei, T., & Simko, V. (2024). *R package 'corrplot': Visualization of a correlation matrix. (Version 0.95)*. <https://github.com/taiyun/corrplot>
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92(4), 548–573.
- Westwood, S. J., & Peterson, E. (2020). The Inseparability of race and partisanship in the United States. *Political Behavior*, 44, 1125–1147.
- Whittle, P. (1996). Psychiatric disorder and the development of a Causal Belief Questionnaire. *Journal of Mental Health*, 5(3), 257–266. <https://doi.org/10.1080/09638239650036929>
- Willitts, M. (2006). *Measuring child poverty using material deprivation: Possible approaches* (Vol. 28). Corporate Document Services.
- Zucker, G. H., & Weiner, B. (1993). Conservatism and perceptions of poverty: An attributional analysis. *Journal of Applied Social Psychology*, 23(12), 925–943.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Bridger, E. K., Maltby, J., Fried, E. I., & Nettle, D. (2025). Causal beliefs about social determinants of depression, poverty, and mortality. *Analyses of Social Issues and Public Policy*, 25, e70018. <https://doi.org/10.1111/asap.70018>