

Does persistent precarious employment affect health outcomes among working age adults? A systematic review and meta-analysis

Additional file 1: Search strategy, PRISMA flowchart and description of studies

(TITLE-ABS(precaarity) OR TITLE-ABS(precaariat) OR TITLE-ABS("precarious employment") OR TITLE-ABS("precarious work") OR TITLE-ABS("employment security") OR TITLE-ABS("employment insecurity") OR TITLE-ABS("secure employment") OR TITLE-ABS("insecure employment") OR TITLE-ABS("job security") OR TITLE-ABS("job insecurity") OR TITLE-ABS("low pay no pay cycle") OR TITLE-ABS("flexible labo*r") OR TITLE-ABS("dual labo*r") OR TITLE-ABS("temporary employment") OR TITLE-ABS("temporary contract*") OR TITLE-ABS("zero hour contract*") OR TITLE-ABS("gig economy") OR TITLE-ABS("contingent work*") OR TITLE-ABS("contingent employment") OR TITLE-ABS("secondary labo*r market") OR TITLE-ABS(flexicurity) OR TITLE-ABS("non-standard work") OR TITLE-ABS("non-standard employment") OR TITLE-ABS("non-standard contract*") OR TITLE-ABS(underemployment) OR TITLE-ABS("atypical work") OR TITLE-ABS("casual work*") OR TITLE-ABS("casual employment") OR TITLE-ABS("casual labo*r") OR TITLE-ABS("non-permanent employ*") OR TITLE-ABS("non-permanent work*") OR TITLE-ABS("exclusionary employment") OR TITLE-ABS("employment history*") OR TITLE-ABS("employment trajectory*") OR TITLE-ABS("employment transition*") OR

TITLE-ABS("job transition*") OR TITLE-ABS("job separation*") OR TITLE-ABS("job trajector*"))

AND

(TITLE-ABS(health) OR TITLE-ABS(wellbeing) OR TITLE-ABS(death) OR TITLE-ABS(hospitali*ation) OR TITLE-ABS(prescri*) OR TITLE-ABS(injur*) OR TITLE-ABS(absen*) OR TITLE-ABS(mortality) OR TITLE-ABS(illness) OR TITLE-ABS(disease) OR TITLE-ABS("ill health") OR TITLE-ABS(sick*) OR TITLE-ABS(morbidity) OR TITLE-ABS(disabilit*) OR TITLE-ABS(disabled))

Figure S2.1: Scopus search strategy

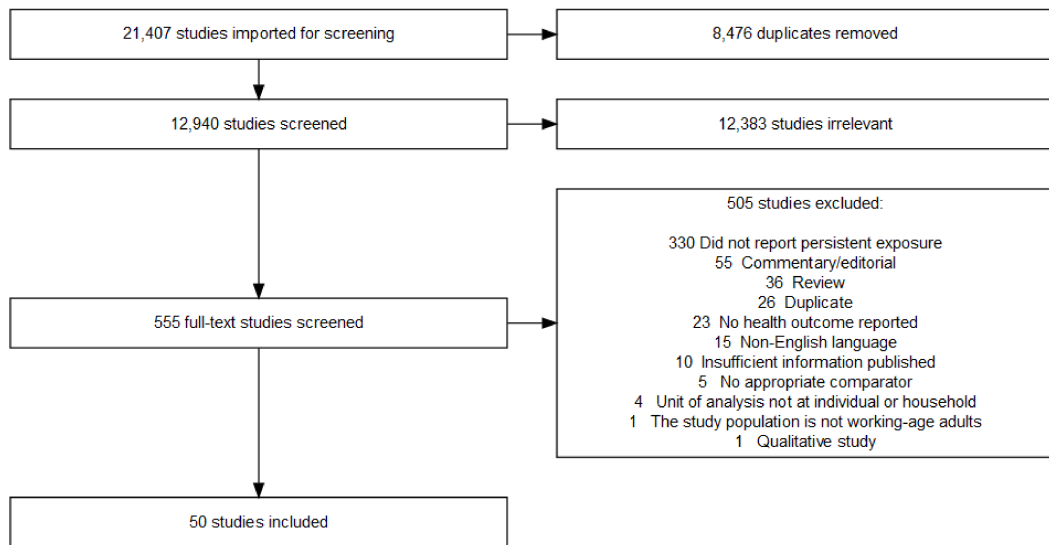


Figure S2.2: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for study selection

Study	First author (year)	Country	Study design	Study population	Risk of bias	Exposure	Outcome
10-Town Study	Kivimaki, M (2003)	Finland	Cohort	Municipal employees and long-term underemployed (aged 18-63 years)	Medium	Employment contract: temporary employment	General health: all-cause mortality Physical health: cardiovascular disease mortality, cancer mortality, external causes mortality Health behaviours: alcohol-related mortality; smoking-related mortality
1970 British Cohort Study	Emerson, E (2018)	UK	Cohort	Working age adult (1970 cohort)	Medium	Employment contract: non-	General health: self-rated health

						standard employment	Mental health: malaise score
American's Changing Lives (ACL) study	Burgard, S (2009)	USA	Cohort	Working age adults (25 and over)	Mediu m	Perceived job security	General health: self-rated health Mental health: depressive symptoms
	Burgard, S (2017)						
British Household Panel Survey (BHPS)	Bender, K (2018)	UK	Cohort	Working age adults	Low	Employment contract: % time in flexible employment	General health: self-rated health Physical health: heart health; stomach health; breathing health; migraine; skin/allergy
Canadian National Population Health Survey (NPHS)	Dobson, K (2018)	Canada	Cohort	Working age adults	Low	Perceived job security	Health behaviours: smoking status

	Watson, B (2017)				Medium	Perceived job security	Mental health: psychological distress
Canadian Survey of Labour and Income Dynamics (SLID)	Scott-Marshall, H (2019)	Canada	Cohort	Working age adults (economically active, aged 25-54 years)	High	Perceived job security	General health: self-rated health
Compulsory Communications (linked workforce and prescription registers)	Moscone, F (2016)	Italy	Cohort	Adults	Medium	Multiple: temporary employment and number of contract changes	Mental health: mental health prescription
Danish Longitudinal Study on Work, Unemployment and Health (linked to	Rugulies, R (2010)	Denmark	Cohort	Working age adults (37-56 years)	Medium	Multiple: perceived job security and history of prolonged unemployment	Mental health: mental health prescription

prescriptions and
employment
registers)

European Union Statistics on Income and Living Conditions (EU- SILC)	Pirani, E (2015)	Italy	Cohort	Working age adults	Low	Employment contract: temporary employment	General health: self-rated health
Finnish census linked to deaths register	Pensola, T (2004)	Finland	Cohort	Working age adults (30-34 years at end of exposure period)	Low	Employment spells: fragmented employment path	General health: all-cause mortality
Finnish Public Sector (FPS) Study	Virtanen, P (2018)	Finland	Cohort	Public sector employees	High	Employment contract: temporary employment	General health: self-rated health

Health and Social Support (HeSSup) Study	Virtanen, P (2008)	Finland	Cohort	Working age adults (economically active, aged 20-54 years)	Medium	Employment contract: atypical employees or unemployed	Health behaviours: tobacco consumption; alcohol consumption; body mass index; physical activity
Health Conditions and Access to Health Services Survey	Fiori, F (2016)	Italy	Cross-sectional	Working age adults (economically active, aged 18-39 years)	Medium	Employment contract: temporary or atypical employment	Mental health: mental health symptoms
Household Panel Comparability Project	Rodriguez, E (2002)	Germany	Cohort	Working age adults (aged 16 years and over)	Low	Employment contract: temporary employment	General health: self-rated health
Japanese Study on Stratification, Health, Income,	Kachi, Y (2018)	Japan	Cohort	Working age adults (aged 25-50 years)	High	Employment contract: non-standard employment	Mental health: psychological distress

 and Neighborhood

(J-SHINE)

	Sato, Y (2018)				Medium	Employment contract: temporary employment	Physical health: tooth loss
Korean Labor and Income Panel Study	Lim, H (2015)	South Korea	Cohort	Working age adults (aged 20- 60 years)	High	Employment contract: non- standard employment	General health: self-rated health
Korean Longitudinal Survey of Aging (KLoSA)	Jin-man, C (2015)	South Korea	Cohort	Adults (aged 45 years and older)	Low	Employment spells: number of jobs	Mental health: major depressive symptoms Physical health: comorbidity
Korean Welfare Panel Study	Yoo, K (2016)	South Korea	Cohort	Working age adults	Medium	Employment contract: temporary employment	Mental health: depressive symptoms

lidA study, Integrated Employment Biography (IEB) register data of the German Federal Employment Agency	Burr, H (2015)	Germany	Cross- sectional	Working age adults	Mediu m	Employment contract: non- standard employment	Mental health: major depressive symptoms
Longitudinal Survey of Middle- aged and Elderly Persons (LSMEP)	Kachi, Y (2014)	Japan	Cohort	Working age adults (aged 50- 59)	Low	Employment contract: non- standard employment	Mental health: psychological distress
Midlife in the United States (MIDUS) study	Burgard, S (2009)	USA	Cohort	Working age adults (aged 25- 74 years)	High	Perceived job security	General health: self-rated health Mental health: negative affect

Midspan	Metcalfe, C (2001)	Scotland	Cohort	Working age adults (economically active; aged 35- 64)	High	Employment spells: number of jobs	General health: all-cause mortality Mental health: psychiatric hospital admission Physical health: cardiovascular mortality; non-alcohol or smoking- related cancer mortality Health behaviours: smoking- related cancer mortality; alcohol-related mortality
	Metcalfe, C (2003)						Mental health: psychological distress

Physical health: diastolic

blood pressure; lung

function; cholesterol level;

ischemia; angina

Health behaviours: smoking

status; alcohol consumption;

physical activity; body mass

index

National health survey “Health and use of health care services” carried out by the Italian National Institute of Statistics (ISTAT)	Barbadoro, P (2016)	Italy	Cross-sectional	Working age adults (economically active)	Medium	Employment contract: non-standard employment	Health behaviours: body mass index
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National Longitudinal Survey of Youth	Dooley, D (1998)	USA	Cohort	Working age adults (young)	Mediu m	Underemployment	Health behaviours: alcohol symptom
	Cross, J (2009)			Working age adults (aged 24- 30 years at baseline)			General health: self-rated health Mental health: depression Physical health: chronic conditions Health behaviours: alcohol consumption
Northern Finland 1966 Birth Cohort (NFBC 1966)	Sirvio, A (2012)	Finland	Cohort	Working age adults (cohort at 31 years)	High	Multiple: discontinuous employment history	Mental health: mental health symptoms

						and non-standard employment	
Northern Swedish Cohort	Gustafsson, P (2012)	Sweden	Cohort	Working age adults (aged 16 at baseline)	Low	Employment contract: temporary employment	General health: cortisol levels
	Virtanen, P (2011)			Working age adults (aged 30 at baseline, 42 at follow-up)	Low	Multiple: non- standard employment and perceive job security	General health: self-rated health Mental health: mental health symptoms
Scania Public Health Cohort	Canivet, C (2017)	Sweden	Cohort	Working age adults (18-55 years)	High	Employment contract: atypical employees or unemployed	Mental health: mental health symptoms

Spanish WORKing life social security (WORKss) cohort	Lopez Gomez, M (2017)	Spain	Case-control	Working age adults (aged 16 and over)	Medium	Employment spells: employment, unemployment and inactivity	General health: all-cause mortality
Swedish Twin project Of Disability pension and Sickness Absence (STODS) linked to the National Social Insurance Agency Micro Data for Analyses of Social insurance database (MiDAS)	Helgadottir, B (2019)	Sweden	Cohort	Working age adults (twins, aged 19-47)	High	Employment contract: temporary employment or self-employed	Physical health: sickness absence

Swedish Work Environment Survey (SWES), subset of Swedish Longitudinal Occupational Survey of Health (SLOSH)	Magnusson L Hanson, (2015)	Sweden	Cohort	Working age adults (20-69)	Low	Perceived job security: threats of dismissal	Mental health: depressive symptoms
Swiss Household Panel (SHP-III)	Giudici, F (2019)	Switzerland	Cohort	Adults (aged 16-100 years)	Low	Employment spells: discontinuous work history	General health: depressive symptoms Mental health: self-rated health
Temporary Employees in Municipal Jobs Study	Virtanen, P (2005)	Finland	Cohort	Female public sector employees with	Low	Employment contract: temporary employment	Mental health: psychological distress

				initially fixed-term contracts			
Three-City Study	Coley, R (2014)	USA	Cohort	Low-income mothers	Low	Employment spells: number of jobs	General health: self-rated health Mental health: mental health symptoms
U.S. Panel Study of Income Dynamics	Amick, B (2002)	USA	Cohort	Working age adults (economically active, aged 18-62 years)		Perceived job security	General health: all-cause mortality
Unnamed survey 1	Barnett, R (1997)	USA	Cohort	Working age adults (economically active)	High	Perceived job security	Mental health: psychological distress

Unnamed survey 3	Johannesse n, H (2013)	Norway	Cohort	Working age adults	High	Perceived job security	Mental health: psychological distress
Unnamed survey 4	Kim, Y (2018)	South Korea	Cohort	Sales and office workers in an automobile company	High	Perceived job security	Mental health: depressive symptoms
Unnamed survey 5	Reine, I (2008)	Sweden	Cohort	Working age adults (aged 30 years at end of study)	High	Employment contract: temporary employment	Mental health: mental health symptoms
Unnamed survey 6	Heaney, C (1994)	USA	Cohort	Automobile manufacturer employees	High	Perceived job security	General health: physical symptomology
Unnamed survey 7	Jahn, I (1995)	Germany	Case- control	Adult males (born after 1912)	High	Employment spells: job changes by level of (in)voluntariness	Physical health: lung cancer diagnosis

Unnamed survey 8	Moore, S (2004)	USA	Cohort	Employees within a large manufacturing organisation	High	Layoff contact: number of layoff contacts (direct and indirect)	Mental health: Depressive symptoms Physical health: self- reported health problems
US Health and Retirement Survey (HRS)	Gallo, W (2006)	USA	Cohort	Working age adults (aged 51- 61 years)	High	Employment spells: number of job losses	Mental health: depressive symptoms
Whitehall II	Ferrie, J (2002)	UK	Cohort	Civil servants (aged 25-55 years)	Low	Perceived job security	General health: self-rated health Mental health: mental health symptoms Physical health: cholesterol level; blood pressure

							Health behaviours: body mass index; alcohol consumption; smoking status
Work and Health Histories Italian Panel (WhipSalute)	Giraudo, M (2016)	Italy	Cohort	Working age adults	Medium	Multiple: number of contracts, number of jobs, occupational sector, work intensity, duration of longest period of non-employment	Physical health: injury
Work, Stress, and Health (WSH) study	Glavin, P (2015)	USA	Cohort	Working age adults (economically active)	Low	Perceived job security	General health: self-rated health Mental health: psychological distress

Table S2.1: Summary of studies included in the systematic review

Additional File 4: Narrative synthesis

An exact binomial test was run for each exposure/outcome grouping with confidence intervals calculated using the Wilson method.[1] Harvest plots were created to visually summarise the direction of effect estimates by outcome as a means of synthesising studies where there were a mix of binary and continuous exposure and outcomes measures, meaning that meta-analysis was not feasible.[1, 2]

Each bar in the harvest plots relates to a data point in the extracted data. Bars are coloured-coded by exposure topic, while the height of the bar relates to whether the study the data point is drawn from was classified as high, medium or low risk of bias according to the amended Effective Public Health Practice Project (EPHPP) Quality Assessment tool for Quantitative Studies. Low risk of bias is represented as the tallest bar. Multiple bars can be presented for one study where the PECOS definition is independent of other bars (e.g. separate estimates for male and female subjects in studies where a total effect size estimate was not presented for both sexes).

General health outcomes

Included studies reported five general health outcomes: all-cause mortality, self-rated health, sickness absence, somatic symptoms and stress response measures (see Additional file 4). Twenty-six out of 35 data points showed poorer self-rated health among people with persistent precarious employment than in the study comparator group (74.3%, 95% CI: 56.7% to 87.5%). There was no clear evidence of associations for the other outcome measures.

Mental health outcomes

Mental health service use and symptoms of poor mental health were the most common reported outcomes (see Additional File 4). Fifty-six out of 67 data points showed a worse outcome than the study comparator group (83.6%; 95% CI 72.5% to 91.5%).

Physical health outcomes

Studies identified in the review related to twelve physical health outcomes: blood pressure, cancer, cardiovascular disease, chronic conditions, dental problems, digestive problems, mortality due to external causes, health problems, injury, migraine, respiratory disease and skin conditions/allergy (see Additional file 4). There was clear evidence that persistent precarious employment was associated only with injury. All six data points showed a worse outcome than the study comparator group (100%; 95% CI 54.1% to 100%), extracted from a single study classified as medium risk of bias.[3]

Health behaviour outcomes

Identified studies assessed six health behaviour outcomes: alcohol consumption, alcohol outcomes, body mass index, physical activity, smoking outcomes and tobacco consumption (see Additional File 4). Persistent precarious employment was most clearly associated with increased alcohol consumption and body mass index. Nine out of ten data points relating to alcohol consumption showed a worse outcome than the study comparator group (90.0%, 95% CI 55.5% to 99.7%). Fourteen out of 16 data points relating to body mass index showed a worse

outcome than the study comparator group (87.5%, 95% CI 61.6% to 98.4%).

There was no clear evidence of associations for the other outcome measures.

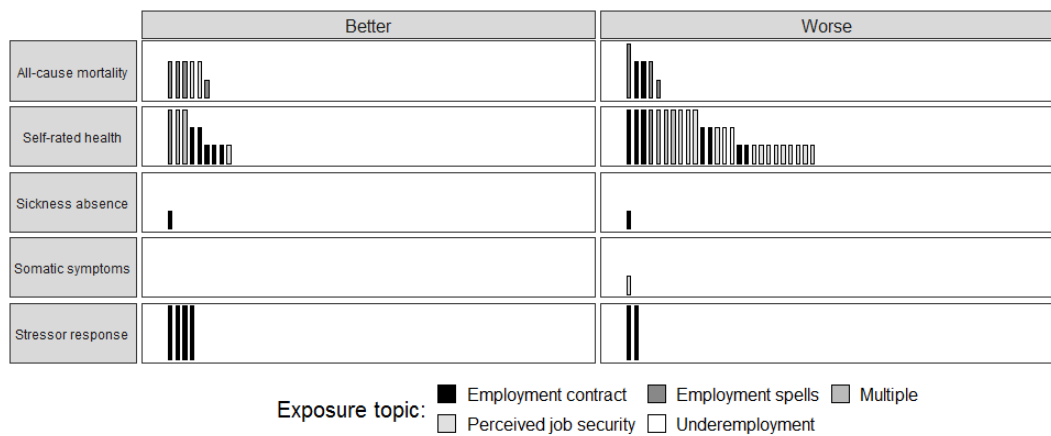


Figure S4.1: Harvest plot of general health outcomes

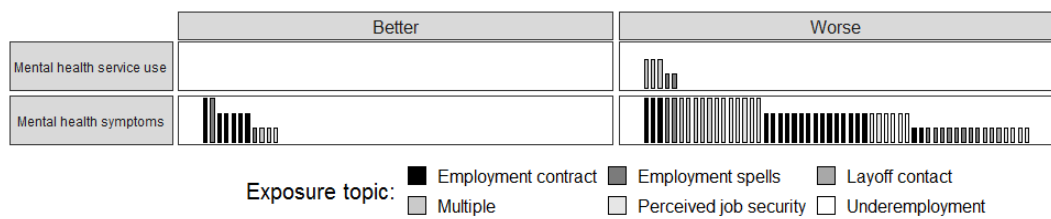


Figure S4.2: Harvest plot of mental health outcomes

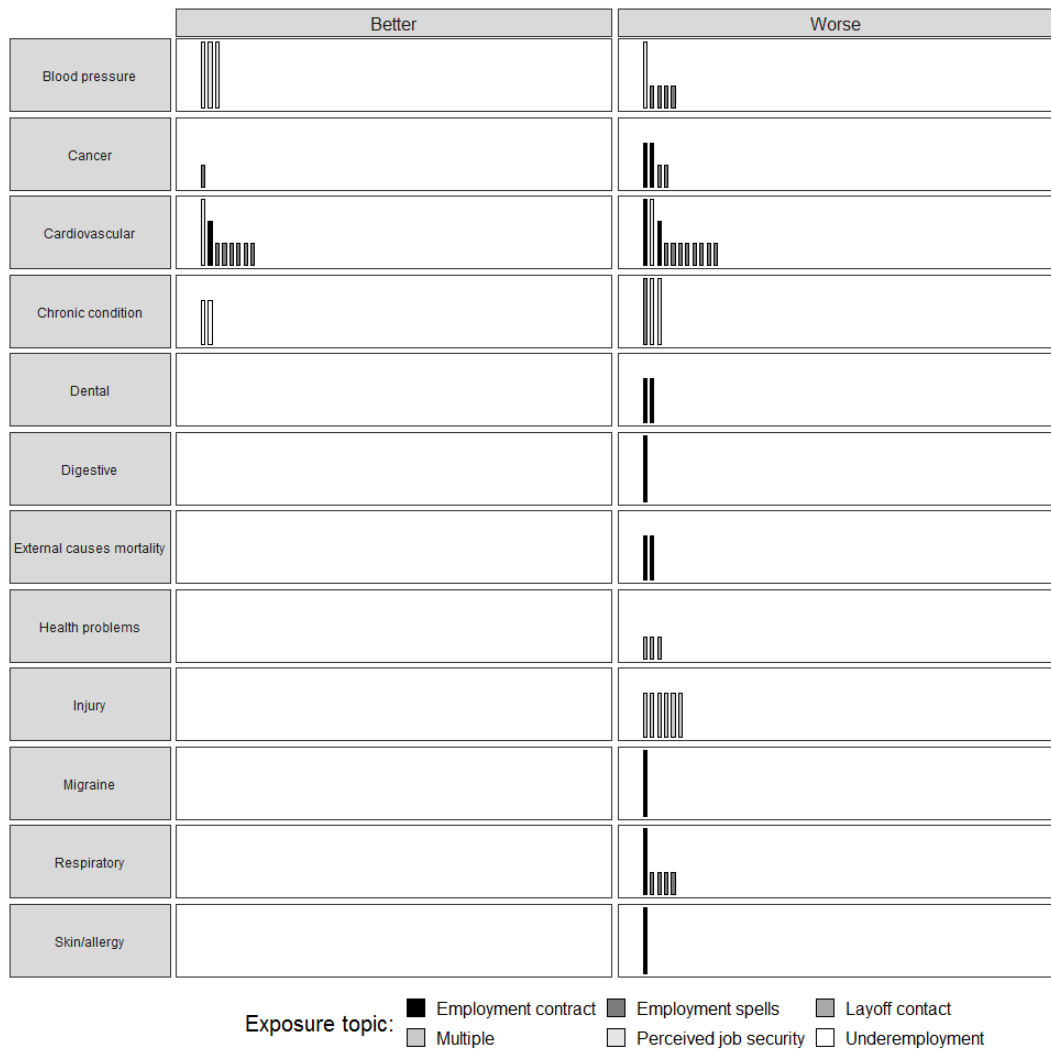


Figure S4.3: Harvest plot of physical health outcomes



Figure S4.4: Harvest plot of health behaviour outcomes

Additional file 5: Self-rated health meta-analyses stratified by sub-group

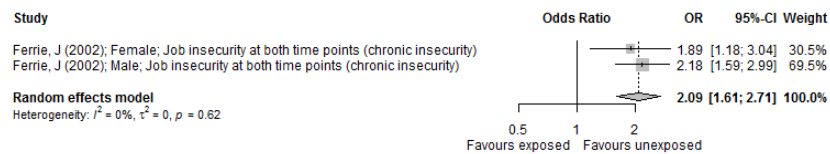


Figure S5.1: Forest plot presenting effect sizes and meta-analysis of poor self-rated health by persistent perceived job security

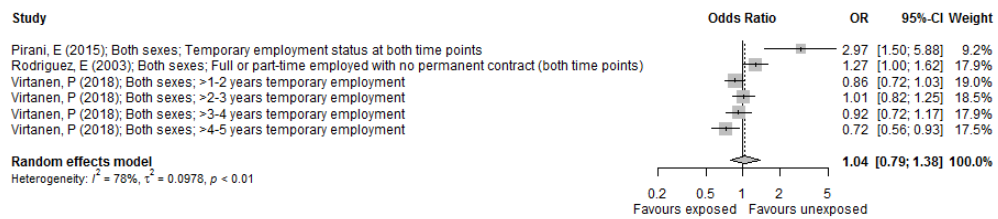


Figure S5.2: Forest plot presenting effect sizes and meta-analysis of poor self-rated health by persistent employment contract

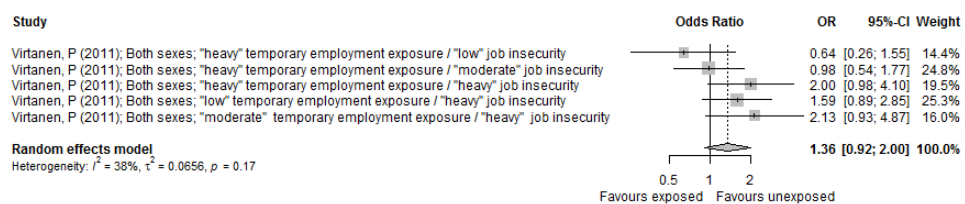
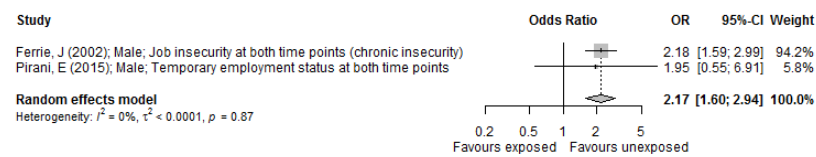


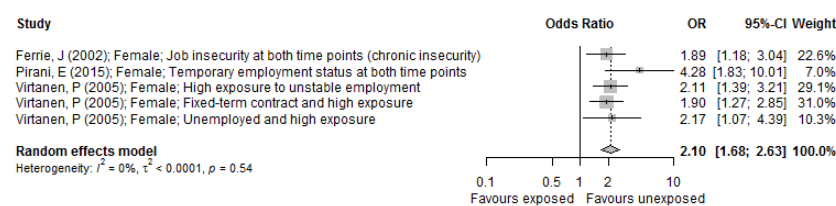
Figure S5.3: Forest plot presenting effect sizes and meta-analysis of poor self-rated health by persistent multi-dimensional measure of precarious employment

Additional File 6: Sub-group meta-analysis

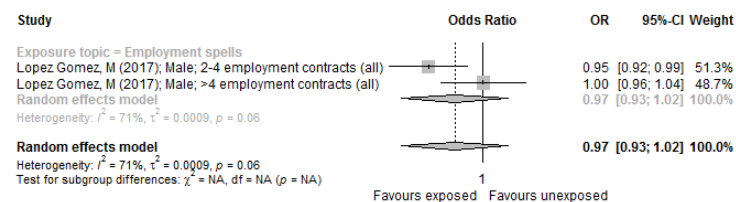
Sub-group analyses were undertaken for males and females for all meta-analyses with the exceptions of self-rated health as a continuous scale and mental health symptoms as a continuous outcome measure on the CES-D scale, due to insufficient data points. We have presented male and female only versions of the meta-analyses presented in our main analysis. There were insufficient male and female estimates to conduct sub-group meta-analysis of self-rated health as a continuous scale and symptoms of poor mental health as a continuous outcome measure on the CES-D scale. We found no clear differences between sex-specific pooled estimates.



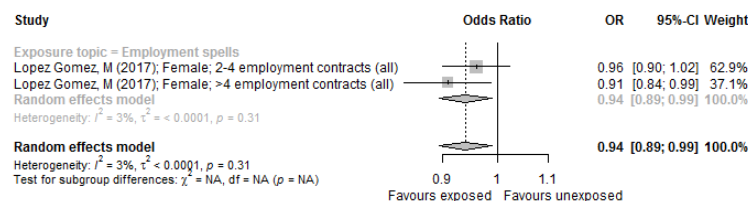
(a) Male poor self-rated health as a binary outcome



(b) Female poor self-rated health as a binary outcome

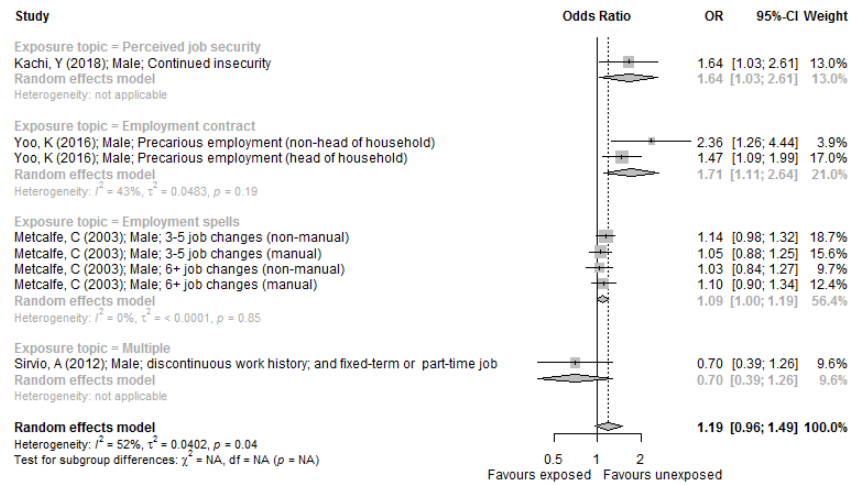


(c) Male all-cause mortality

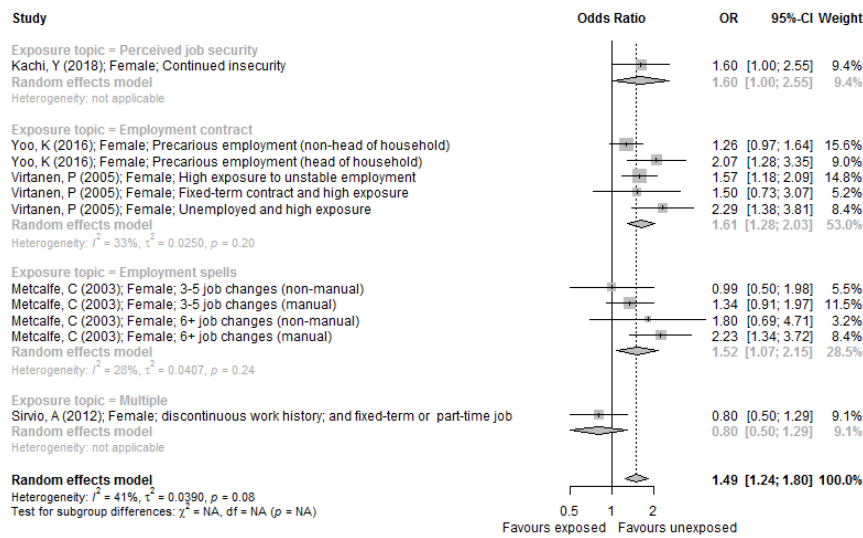


(d) Female all-cause mortality

Figure 6.1: Forest plots presenting effect sizes and meta-analysis of selected general health outcomes by persistent precarious employment exposure

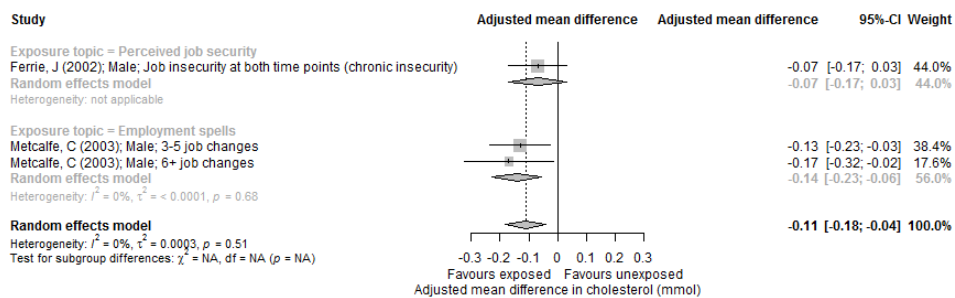


(a) Male poor mental health as a binary outcome

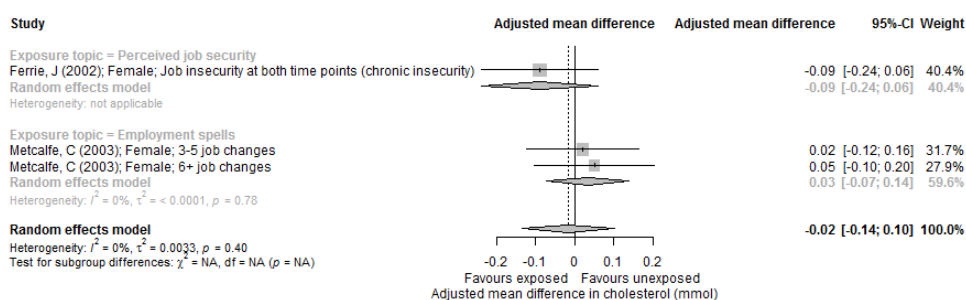


(b) Female poor mental health as a binary outcome

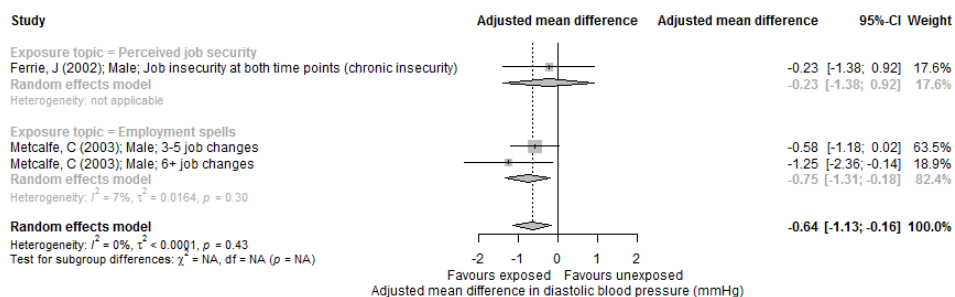
Figure 6.2: Forest plots presenting effect sizes and meta-analysis of selected mental health outcomes by persistent precarious employment exposure



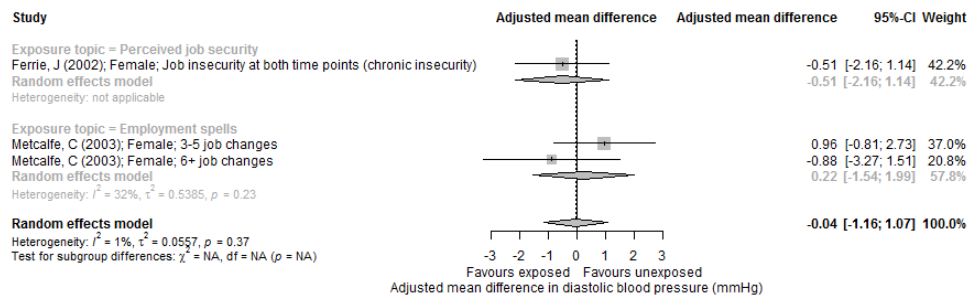
(a) Male cholesterol level



(b) Female cholesterol level

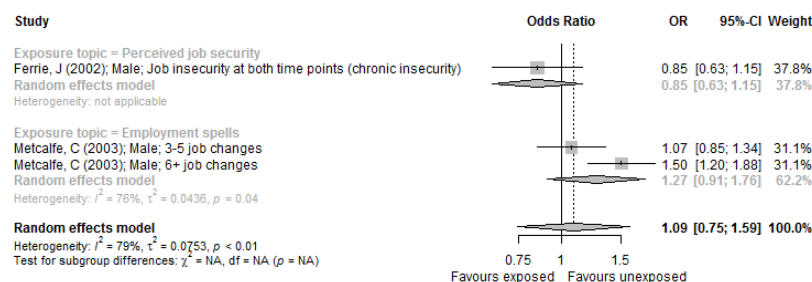


(c) Male diastolic blood pressure

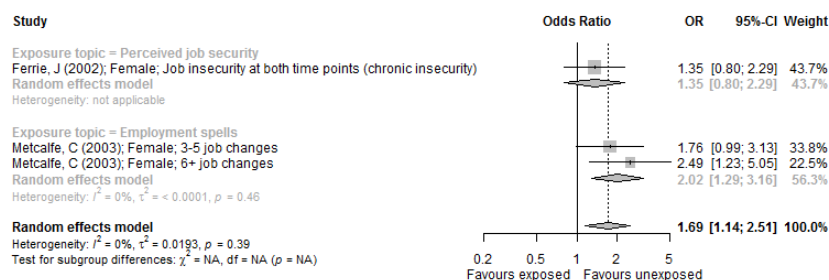


(d) Male diastolic blood pressure

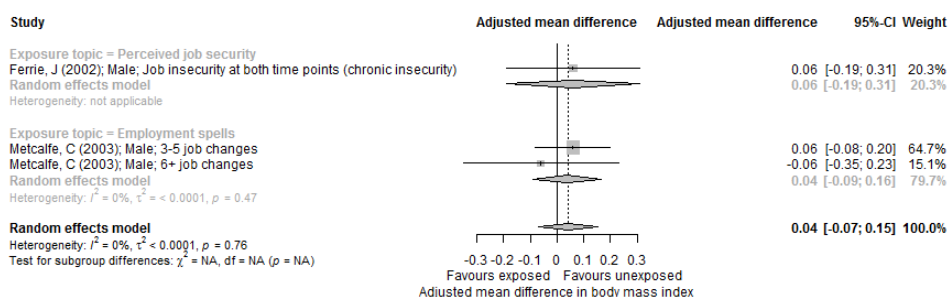
Figure 6.3: Forest plots presenting effect sizes and meta-analysis of selected physical health outcomes by persistent precarious employment exposure



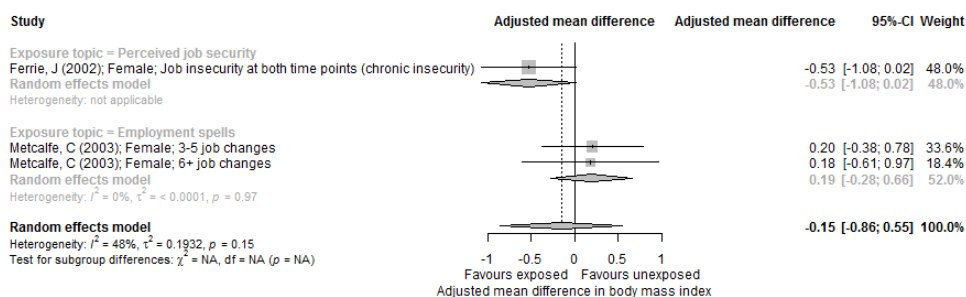
(a) Male harmful alcohol consumption



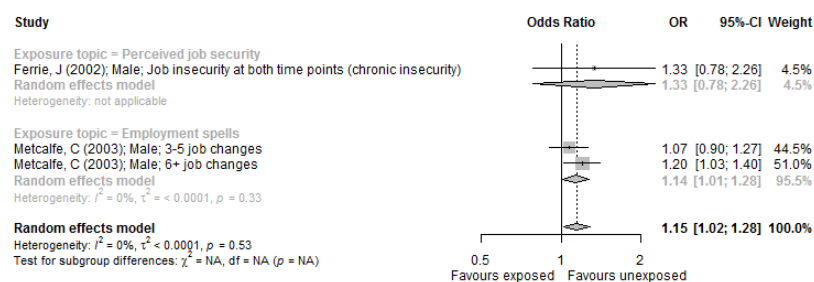
(b) Female harmful alcohol consumption



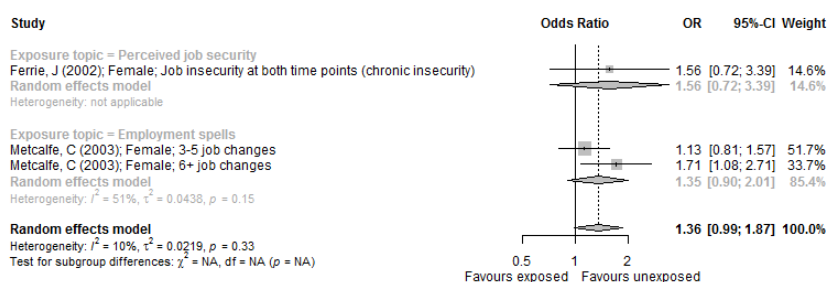
(c) Male body mass index



(d) Female body mass index



(e) Male current smoking status

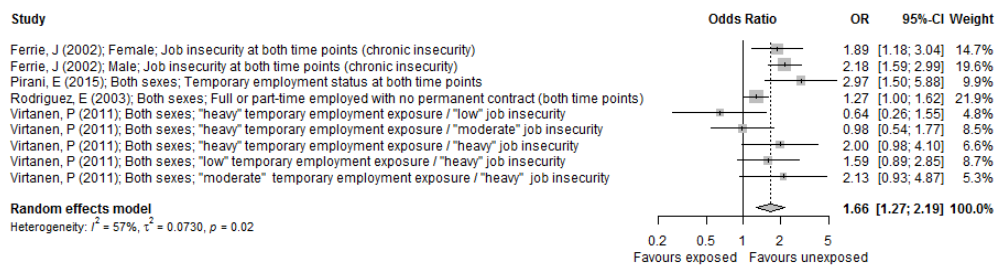


(f) Female current smoking status

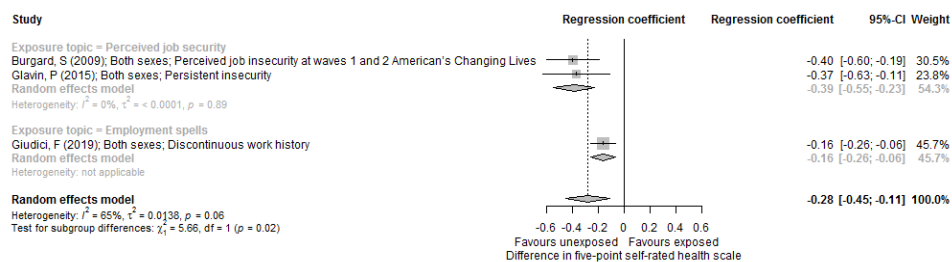
Figure 6.4: Forest plots presenting effect sizes and meta-analysis of selected health behaviour outcomes by persistent precarious employment exposure

Additional File 7: Sensitivity analysis

We have presented sensitivity analyses of the meta-analyses presented in our main analysis, excluding studies classed as high risk of bias using a modified version of the Effective Practice in Public Health Project (EPHPP) tool. All-cause mortality and symptoms of poor mental health as a continuous outcome measure on the CES-D scale had no high risk of bias studies and are not presented as part of the sensitivity analysis. The findings of our review were not qualitatively changed by excluding high risk of bias studies.

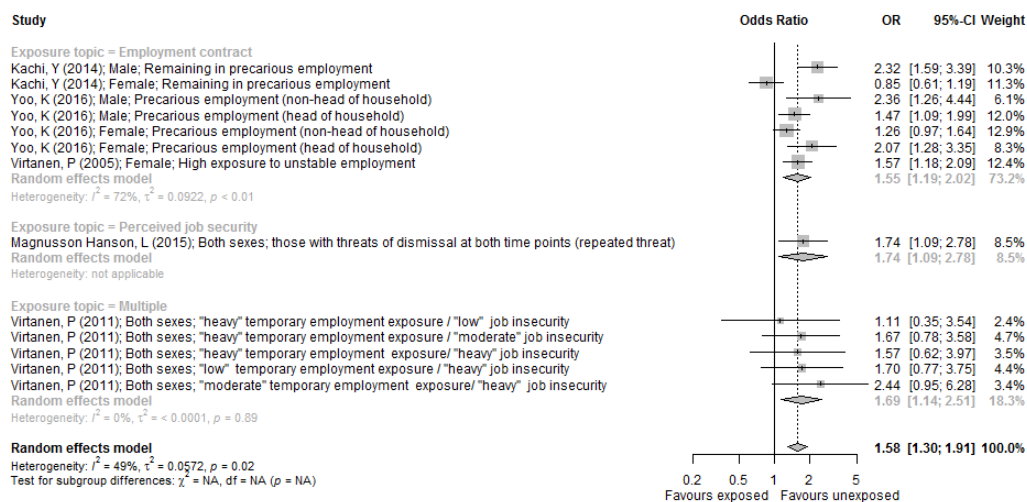


(a) Poor self-rated health as a binary outcome



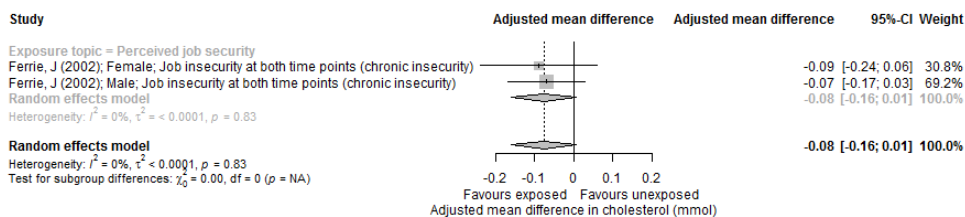
(b) Self-rated health as a continuous scale

Figure 7.1: Forest plots presenting effect sizes and meta-analysis of selected general health outcomes by persistent precarious employment exposure

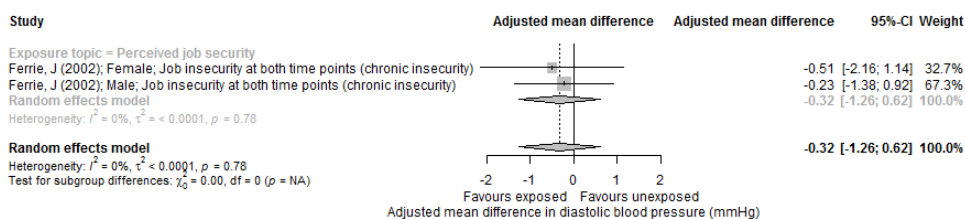


(a) Poor mental health as a binary outcome

Figure 7.2: Forest plots presenting effect sizes and meta-analysis of selected mental health outcomes by persistent precarious employment exposure

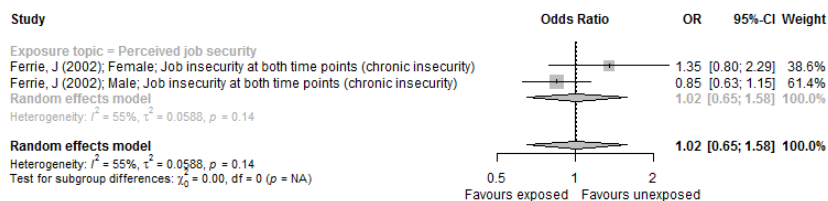


(a) Cholesterol level

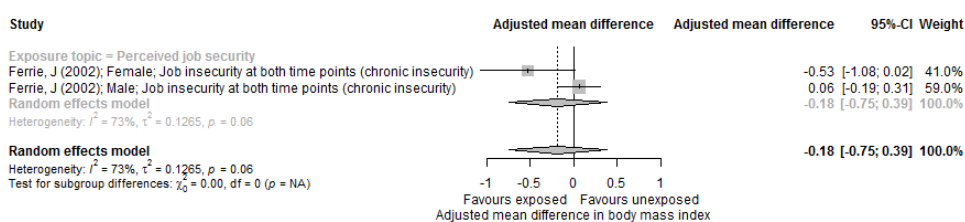


(b) Diastolic blood pressure

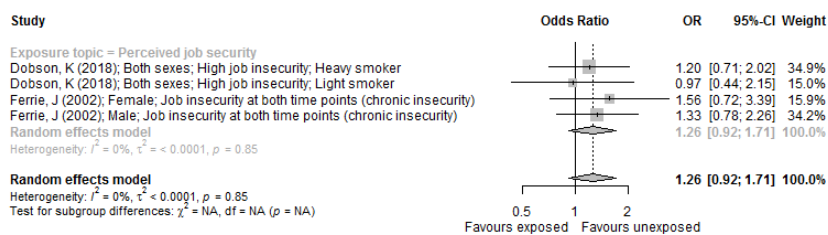
Figure 7.3: Forest plots presenting effect sizes and meta-analysis of selected physical health outcomes by persistent precarious employment exposure



(a) Harmful alcohol consumption



(b) Body mass index



(c) Current smoking status

Figure 7.4: Forest plots presenting effect sizes and meta-analysis of selected health behaviour outcomes by persistent precarious employment exposure

Additional file 8: Narrative synthesis and meta-analysis of other health outcomes

Data analysis and presentation

We initially tabulated extracted data by the type of exposure and outcome. Due to the wide range of outcome measures included in this review, a narrative synthesis was undertaken using vote counting based on the direction of effect for all exposure/outcome groupings following Cochrane guidance.[1] An exact binomial test was run for each exposure/outcome grouping with confidence intervals calculated using the Wilson method.[1] Harvest plots were created to visually summarise the direction of effect estimates by outcome as a means of synthesising studies where there were a mix of binary and continuous exposure and outcomes measures, meaning that meta-analysis was not feasible.[1, 2]

Physical health outcomes

Persistent precarious employment was associated with lower cholesterol (adjusted mean difference -0.07 mmol/l, CI -0.15 to -0.01, I^2 25%) based on two studies [4, 5] (Figure 8.1(a)). When stratified by exposure topic, the separate studies showed similar effect sizes. Persistent precarious employment was associated with lower diastolic blood pressure when meta-analysed (-0.54 mmHg, CI -0.99 to -0.08, I^2 0%) (Figure 8.1(b)).

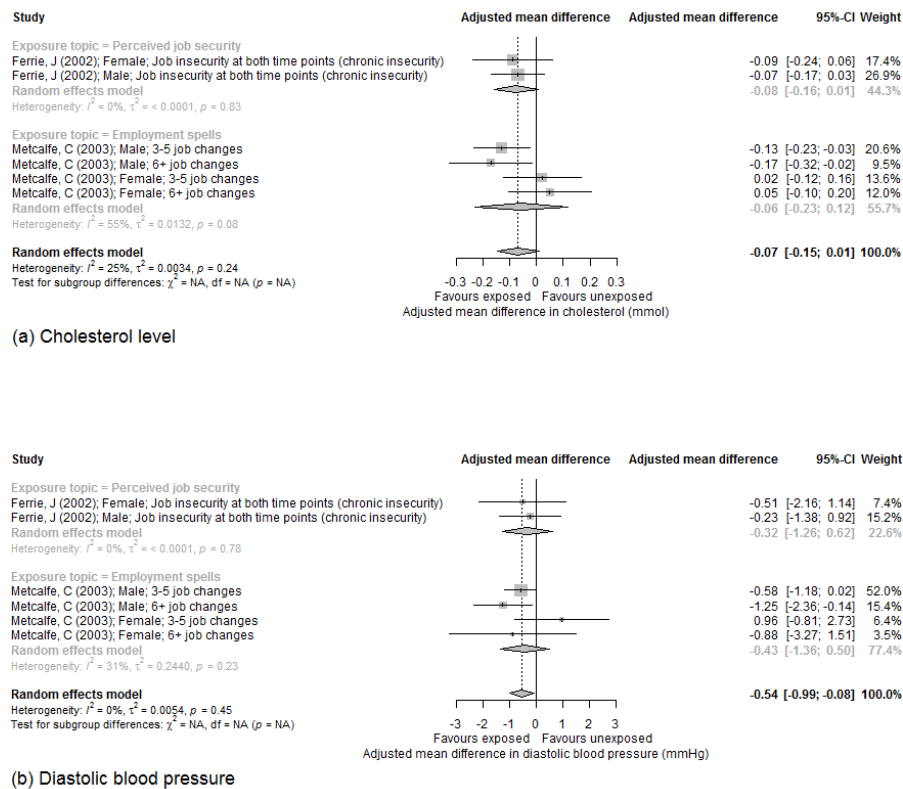
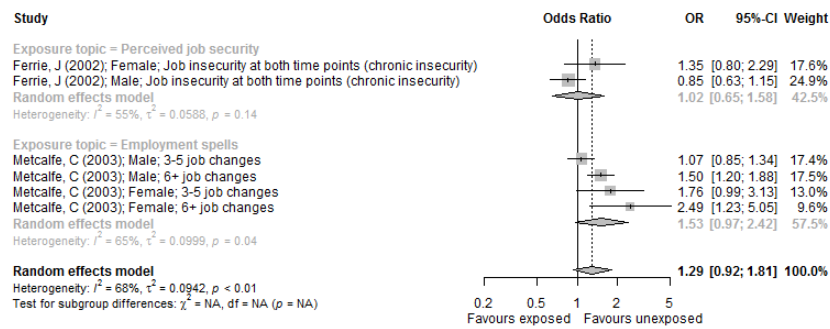


Figure 8.1: Forest plots presenting effect sizes and meta-analysis of selected physical health outcomes by persistent precarious employment exposure

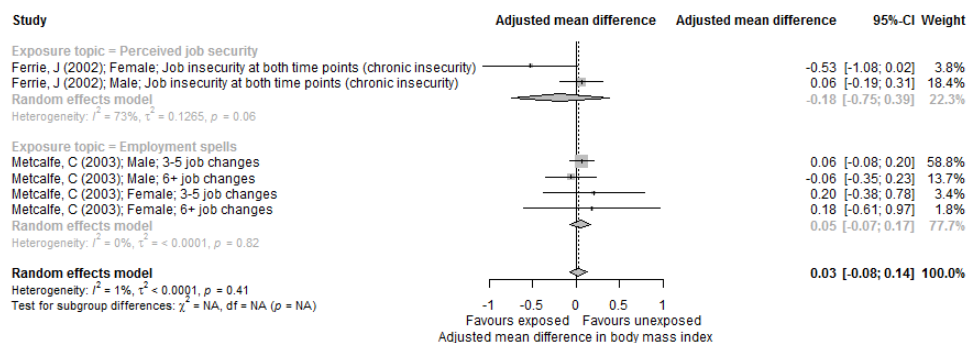
Health behaviour outcomes

Our meta-analysis of persistent precarious employment and harmful alcohol consumption suggested an association with increased odds (OR 1.29, CI 0.92 to 1.81, I^2 68%) based on two studies [4, 5] (Figure 8.2(a)). It should be noted that the two studies used different thresholds for harmful alcohol consumption and for different sexes. Both studies used a threshold of 22 or more units of alcohol per week for harmful drinking among men. For women, Ferrie et al.[5] used a threshold of 15 or more units of alcohol per week, while Metcalfe et al.[4] used a threshold of eight or more units of alcohol per week. No association was found between persistent precarious employment and body mass index based on the pooled adjusted mean differences from two studies (Adjusted mean difference

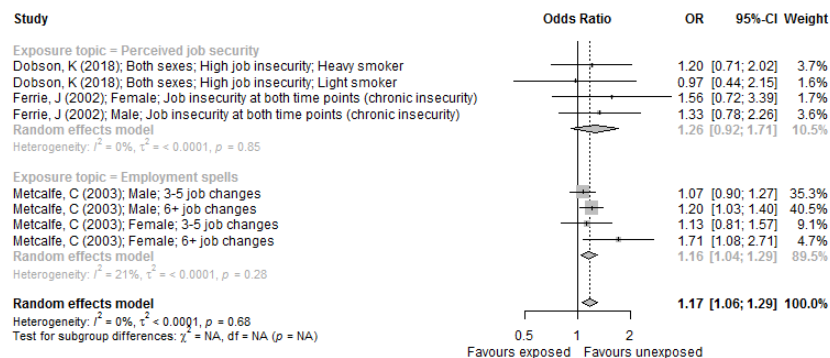
0.03, 95% CI -0.08 to 0.14, I^2 1%) [4, 5] (Figure 8.2(b)). Persistent precarious employment was found to be associated with current smoking status based on the pooled estimates from three studies (OR 1.17, CI 1.06 to 1.29, I^2 0%) [4-6] (Figure 8.2(c)).



(a) Harmful alcohol consumption



(b) Body mass index



(c) Current smoking status

Figure 8.2: Forest plots presenting effect sizes and meta-analysis of selected health behaviour outcomes by persistent precarious employment exposure

All three outcomes that we assessed were downgraded to very low overall certainty when assessed using the GRADE framework (Table 1). All outcomes except for self-rated health were rated down on risk of bias, while two outcomes were rated down on inconsistency (all-cause mortality and self-rated health), and one outcome on imprecision (alcohol consumption).

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Additional file 9: GRADE assessment of certainty table for other health outcomes

GRADE assessment of certainty											
Outcome	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Number of studies	Number of participants	Relative difference (95%CI)	Absolute risk		Certainty (reasons for downgrading)
									Medium risk	Exposed risk (95%CI)	
Diastolic blood pressure	Serious limitations (uncontrolled confounding and exposure integrity)	No serious inconsistency	No serious indirectness (borderline)	No serious imprecision	Undetected	2	9,705	Adjusted mean difference = -0.54 (-0.99; -0.08)	76.9mmHg [5]	76.4mmHg (75.9mmHg to 76.8mmHg)	Very low (risk of bias)
Alcohol consumption	Serious limitations (uncontrolled confounding and exposure integrity)	No serious inconsistency (borderline)	No serious indirectness (borderline)	Serious imprecision (95% CI includes 1 appreciable benefit or harm)	Undetected	2	9,705	OR = 1.29 (0.92; 1.81)	43.0%***	55.5% (41.0% to 57.7%)	Very low (risk of bias, imprecision)
Current smoker	Serious limitations (uncontrolled confounding and exposure integrity)	No serious inconsistency	No serious indirectness (borderline)	No serious imprecision	Undetected	3	15,166	OR = 1.17 (1.06; 1.29)	16.0%***	18.7% (16.8% to 19.7%)	Very low (risk of bias)

* <http://healthsurvey.hscic.gov.uk/data-visualisation/data-visualisation/explore-the-trends/general-health.aspx>

** <http://healthsurvey.hscic.gov.uk/support-guidance/public-health/health-survey-for-england-2016/well-being-and-mental-health.aspx>

*** <https://files.digital.nhs.uk/D4/93337C/HSE19-Adult-health-behaviours-rep.pdf>

Table 9.1: GRADE assessment of certainty of estimate of effect size and summary of findings

Additional File 10: Funnel plots

We have presented funnel plots for PECOS combinations with ten or more data points.

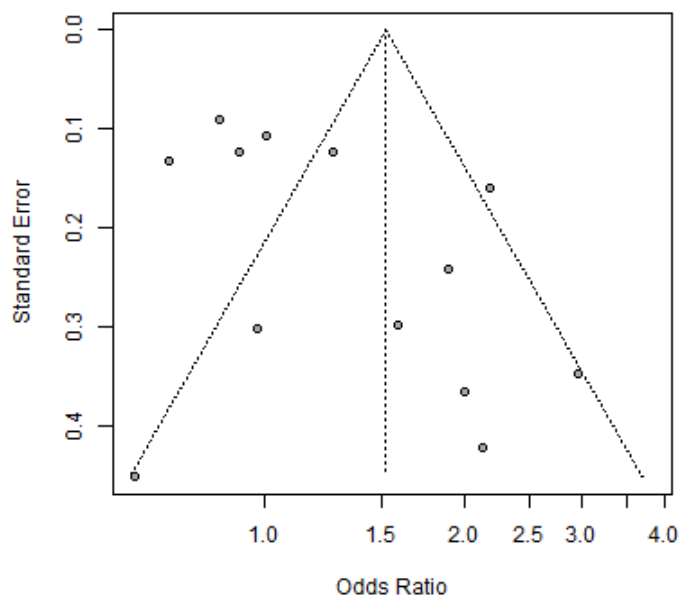


Figure S8.1: Funnel plot for studies reporting poor self-rated health as a binary outcome

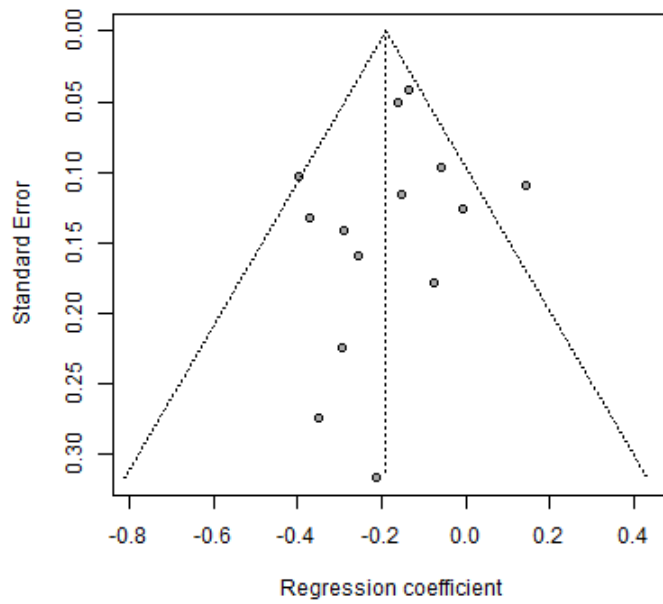


Figure S8.2: Funnel plot for studies reporting self-rated health as a continuous scale

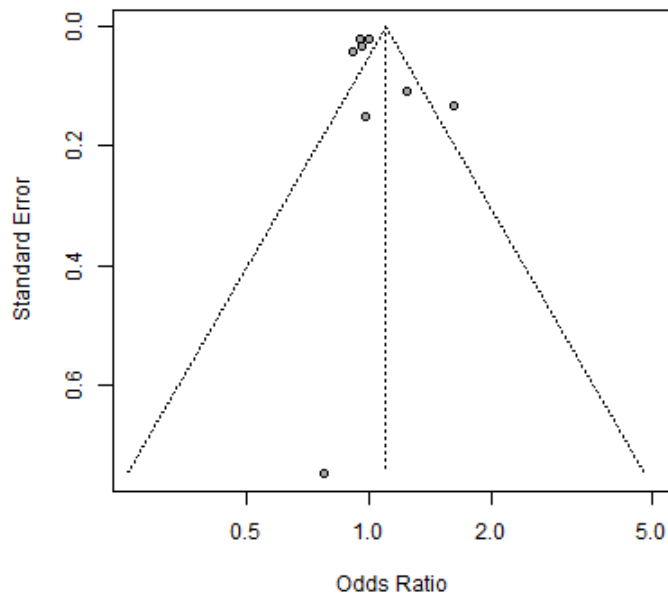


Figure S8.3: Funnel plot for studies reporting all-cause mortality

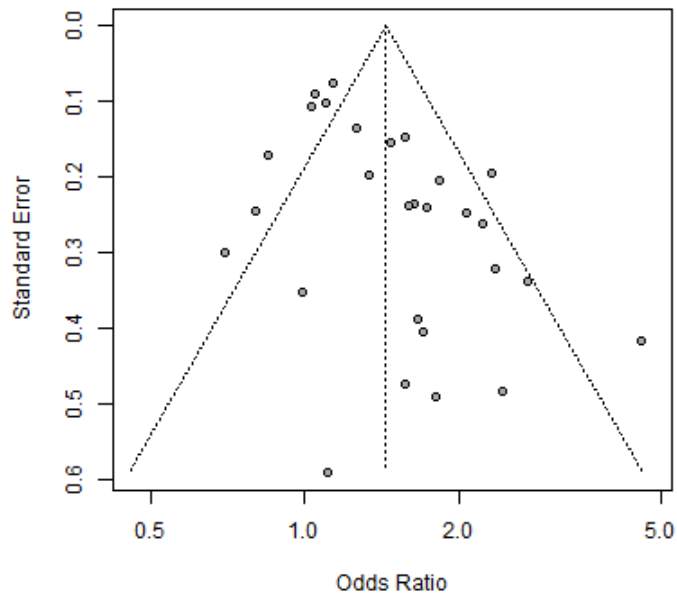


Figure S8.4: Funnel plot for studies reporting poor mental health as a binary outcome