ORIGINAL ARTICLE

Interventions to reduce the impact of unemployment and economic hardship on mental health in the general population: a systematic review

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Background. Job loss, debt and financial difficulties are associated with increased risk of mental illness and suicide in the general population. Interventions targeting people in debt or unemployed might help reduce these effects.

Method. We searched MEDLINE, Embase, The Cochrane Library, Web of Science, and PsycINFO (January 2016) for randomized controlled trials (RCTs) of interventions to reduce the effects of unemployment and debt on mental health in general population samples. We assessed papers for inclusion, extracted data and assessed risk of bias.

Results. Eleven RCTs (*n* = 5303 participants) met the inclusion criteria. All recruited participants were unemployed. Five RCTs assessed 'job-club' interventions, two cognitive behaviour therapy (CBT) and a single RCT assessed each of emotional competency training, expressive writing, guided imagery and debt advice. All studies were at high risk of bias. 'Job club' interventions led to improvements in levels of depression up to 2 years post-intervention; effects were strongest among those at increased risk of depression (improvements of up to 0.2–0.3 S.D. in depression scores). There was mixed evidence for effectiveness of group CBT on symptoms of depression. An RCT of debt advice found no effect but had poor uptake. Single trials of three other interventions showed no evidence of benefit.

Conclusions. 'Job-club' interventions may be effective in reducing depressive symptoms in unemployed people, particularly those at high risk of depression. Evidence for CBT-type interventions is mixed; further trials are needed. However the studies are old and at high risk of bias. Future intervention studies should follow CONSORT guidelines and address issues of poor uptake.

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Key words: Anxiety, austerity, debt, depression, financial hardship, intervention, mental health, recession, self-harm, suicide, systematic review, unemployment.

Introduction

Job loss, debt and financial difficulties are associated with an increased risk of mental illness, self-harm and suicide (Fitch *et al.* 2011; Haw *et al.* 2015). During periods of economic recession the numbers of people affected by these and other problems rise and levels of depression, self-harm and suicide increase (Stuckler *et al.* 2009; Katikireddi *et al.* 2012; Chang *et al.* 2013; Corcoran *et al.* 2015). Interventions to help mitigate the effect of job loss and debt on mental health are an important element of policy response to periods of recession. Ecological studies indicate that factors such as

government spending on active labour market programmes and unemployment protection schemes may counter the effect of recession on suicide rates (Stuckler *et al.* 2009; Norström & Grönqvist, 2014) and austerity measures such as reassessment of individuals' eligibility for benefit could have the opposite effect (Barr *et al.* 2015). However, there have been few evaluations of specific interventions targeted at individuals.

A number of policy documents (WHO, 2011; van Stolk *et al.* 2014) have summarized some of the limited randomized controlled trial (RCT) evidence of the effects on mental health of interventions for people who have lost their jobs, most notably studies of the JOBS programmes in the USA (Caplan *et al.* 1989; Vinokur *et al.* 1995*b*) and the Työhön job search programme in Finland (Vuori *et al.* 2002). Two reviews assessed the evidence on 'job search' interventions and included data from randomized and non-randomized

studies (Audhoe *et al.* 2010; Liu *et al.* 2014). Both reported that job search interventions improved depression and employment (Audhoe *et al.* 2010; Liu *et al.* 2014). However, to our knowledge, no systematic reviews have assessed evidence of the effectiveness of the range of interventions, including job-search programmes, designed to ameliorate the impact of job loss, unemployment and economic hardship on mental health.

Our aim was to systematically review the evidence from randomized controlled trials of interventions given to the general population to reduce the effects of economic hardship on mental health. Our focus was on studies conducted in general population samples of working age individuals, rather than those focusing on specific high-risk samples, such as individuals with serious mental illness (Kukla & Bond, 2009; Tsang *et al.* 2010; Burke-Miller *et al.* 2012; Nieuwenhuijsen *et al.* 2014). We also excluded studies on select population groups (e.g. single mothers) where we felt policy responses and interventions would be tailored specifically for the particular needs of those populations and were not generalizable to a general population (Wiggins *et al.* 2004; Forgatch & DeGarmo, 2007). This review will be of use to policy makers, researchers planning future intervention studies and public health practitioners working in local authorities.

Method

Criteria for considering studies for this review

We included randomized controlled trials (RCTs) and cluster randomized trials of public health or health service interventions designed to mitigate the effects of unemployment, debt or austerity measures in the general population. We included only studies with a measure of mental health as an outcome, such as studies with measures of either mental disorder or mental health symptom scales. Examples of types of intervention include: group support or workshops to provide people with job search skills and resilience to the impact of rejected applications; advice type interventions (e.g. Citizens Advice Bureau) to help people navigate their way through benefits systems and/or access relevant support or to provide debt advice; interventions aimed at training frontline staff in job centres or benefits agencies or debt collection agencies to identify individuals who have mental health problems and help them respond appropriately. We excluded studies focused on people with serious mental illness, as this is a distinct subgroup of the population requiring specific intervention types; people not of working age; rehabilitation interventions for people with somatic or mental

health problems that either aimed to help them get back into work, or to prevent them from losing their job if they were currently employed; and interventions aimed at selected specific groups of the working population (e.g. single mothers). We also excluded studies if the authors did not report any measure of mental health. A protocol for the review was registered in advance on the PROSPERO website, we prepared the review following Cochrane methods and using PRISMA reporting guidelines (Liberati *et al.* 2009; Higgins & Green, 2011; Moore *et al.* 2015).

Search

We searched MEDLINE, PsycINFO, Embase on Ovid; the Cochrane Library including CENTRAL on Wiley Interscience; and Science and Social Science Citation Index, and Arts and Humanities Citation Index on Web of Science. All databases were searched from inception to 27 May 2015 and re-run on 16 January 2016. We excluded letters, editorials, and conference proceedings for which there were no full-text papers. We searched the reference lists of, and ran a citation search on, all included studies. We used a combination of MeSH terms and text words for mental health combined with terms for economic hardship, unemployment, job insecurity credit advice and financial worries. We used filters for selection of RCTs taken from the Cochrane Handbook (Lefebvre *et al.* 2011). We did not exclude studies based on language (see Supplementary Appendix 1 for full details of the searches).

Eligibility, data collection and assessment of risk of bias

We screened the titles and abstracts and eligibility of full-text reports independently and in duplicate (D.G. and T.H.M.M.) using a form to check the criteria and discussing any discordant decisions until consensus was reached. All authors extracted data and assessed risk of bias, independently and in duplicate, recording these on a data extraction form (D.G., T.H.M.M., K.H., N.K., C.M.). Disagreements were discussed until consensus was reached, with recourse to a third reviewer if necessary. To investigate bias we used the Cochrane Risk-of-Bias tool (Higgins *et al.* 2011). Domains assessed included quality of the random sequence generation, concealment of allocation, description of drop-outs and withdrawals, blinding (of participants, research personnel and outcome assessment) and selective outcome reporting. (See Supplementary Appendices for details of data extracted, eligibility and risk of bias assessment.)

Synthesis

We planned to examine the treatment effect direction and consistency by providing a systematic narrative, structured summary of the evidence (tables and descriptive text) from the studies based on type of intervention and participants. There were insufficient data reported in the studies to prepare a meta-analysis for 'job-club' type interventions; the remaining interventions were too heterogeneous in terms of interventions to attempt to pool data. We categorized type of interventions on a *post-hoc* basis as described in our protocol because we were unclear what range of interventions, setting and participants we would identify (Moore *et al.* 2015).

Results

Our search identified 2389 records (see Fig. 1). The 11 RCTs included 5303 participants and were reported in 26 papers (see Fig. 1). There was considerable heterogeneity in terms of type of intervention, and participants, study size (see Table 1, Fig. 2, Supplementary Appendix 2 and Supplementary Appendix 3). Six studies were from the USA, two from the UK, and one each from Spain, Australia and Finland. Five studies – four in the USA (Caplan *et al.* 1989; Rife, 1992; Gustafson, 1995; Vinokur *et al.* 1995*b*) and one in Finland (Vuori *et al.* 2002) – examined the effect of 'job-club' type interventions for unemployed people to cope with job loss and assisted them into new employment, two studies assessed the effects of cognitive behavioural therapy (CBT) for unemployed people (Proudfoot *et al.* 1997; Harris *et al.* 2002), one study investigated the effects of expressive writing (Spera *et al.* 1994), a second the effect of guided mental imagery (Joseph & Greenberg, 2001), and a third the effects of emotional competencies training (Hodzic *et al.* 2015*a*). Another study evaluated debt advice for people in debt (Pleasence & Balmer, 2007).

We excluded 110 reports (see Fig. 1 and Supplementary Appendix 4). Twenty papers describing RCTs were excluded because they did not report any mental health data (see Supplementary Appendix 4); five reports because the population, i.e. single or new mothers on benefits, would necessarily have interventions tailored to suit their circumstances (Wiggins *et al.* 2004; Forgatch & DeGarmo, 2007; Morris & Hendra, 2009; Jagannathan *et al.* 2010; Kneipp *et al.* 2011); one report providing loans (Fernald *et al.* 2008); and two reports where the intervention was increasing access to healthcare insurance (Finkelstein *et al.* 2012; Baicker *et al.* 2013), as these interventions were unlikely to be suitable for a general population.

Despite searching for and including people in the general population all participants in the included studies were unemployed, with mean durations of unemployment ranging from 2.3 to 33 months (see Fig. 2). Three studies recruited professionals or management-level staff (Spera *et al.* 1994; Proudfoot *et al.* 1997; Pleasence & Balmer, 2007). Mean age ranged from 32 (Vinokur *et al.* 1995*b*) to 58 (Rife, 1992) years and gender balance varied from 13% male (Hodzic *et al.* 2015*a*) to 98% male (Spera *et al.* 1994).

Most studies were assessed as at high or unclear 'risk of bias' so the numerical outcomes need to be interpreted with some caution. Information needed to assess bias was not reported in several studies and participants in all 11 studies would have been aware of the intervention they were given and so all the studies were at high risk of bias for that domain (see Fig. 3).

Ten of 11 studies described the personnel delivering the intervention the exception was Rife (1992), while just two, JOBS II and Työhön, described their training (Vinokur *et al.* 1995*b*; Vuori *et al.* 2002). Two studies, JOBS I and JOBS II reported supervision for their staff (Vinokur *et al.* 1995*a, b*). Four studies, JOBS I, JOBS II, Työhön and Harris *et al.* (2002) reported use of a manual (Caplan *et al.* 1989; Vinokur *et al.* 1995*b*; Harris *et al.* 2002; Vuori *et al.* 2002) and three (JOBS I, JOBS II and Työhön) included an assessment of fidelity to treatment (Caplan *et al.* 1989; Vinokur *et al.* 1995*b*; Vuori *et al.* 2002) (see Supplementary Appendix 5).

'Job-club' interventions

Five studies, reported in 17 papers, assessed the effects of 'job-club' interventions. Four of these compared 'job-club' to written, self-administered job-search materials (JOBS I, JOBS II, Työhön and Gustafson, 1995) and one, Rife *et al.* compared 'job club' to usual unemployment centre services. The JOBS I intervention (Caplan *et al.* 1989; Vinokur *et al.* 1991*a, b*, 1995*a*; Price *et al.* 1992; Vanryn & Vinokur, 1992) ($n = 1122$) delivered job skills training seminars to groups of 16–20 people in eight sessions of 3 h (Table 1, Fig. 2 and Supplementary Appendix 3). The JOBS I intervention was modified in JOBS II ($n = 1771$) to focus more on enhancement of personal control, sense of mastery and job-search self-efficacy; sessions were reduced from eight sessions over 2 weeks in JOBS I to daily 4 h sessions provided over 5 days in JOBS II and training of group facilitators was also increased (Vinokur *et al.* 1995*b*, 1996, 2000; Vinokur & Schul, 1997). Both JOBS I and JOBS II excluded people with any signs of mental illness (JOBS I; Caplan *et al.* 1989) or depression scores of >3 on Hopkins Symptom checklist 90, (JOBS II; Vinokur *et al.* 1995*b*) at baseline. Vuori *et al.* (2002) adapted the JOBS II intervention for use in Finland
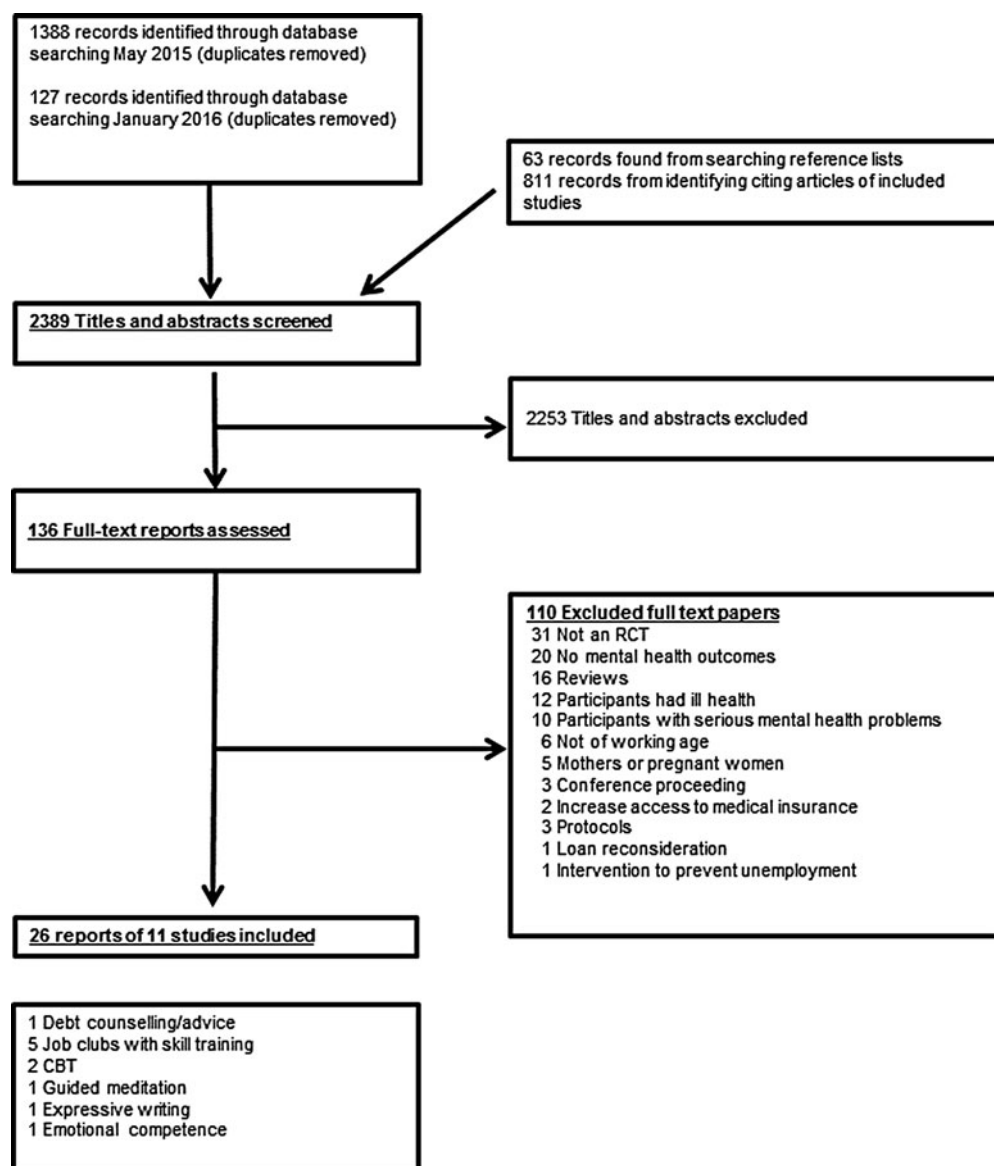
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┌─────────────────────────────────────┐
│ 1388 records identified through      │
│ database searching May 2015          │
│ (duplicates removed)                 │
│                                      │
│ 127 records identified through       │
│ database searching January 2016      │
│ (duplicates removed)                 │
└─────────────────────────────────────┘

                    ┌─────────────────────────────────────┐
                    │ 63 records found from searching      │
                    │ reference lists                      │
                    │ 811 records from identifying citing  │
                    │ articles of included studies         │
                    └─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ 2389 Titles and abstracts screened   │
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                    ┌─────────────────────────────────────┐
                    │ 2253 Titles and abstracts excluded   │
                    └─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ 136 Full-text reports assessed       │
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                    ┌─────────────────────────────────────┐
                    │ 110 Excluded full text papers        │
                    │ 31 Not an RCT                        │
                    │ 20 No mental health outcomes         │
                    │ 16 Reviews                           │
                    │ 12 Participants had ill health       │
                    │ 10 Participants with serious mental  │
                    │    health problems                   │
                    │ 6 Not of working age                 │
                    │ 5 Mothers or pregnant women          │
                    │ 3 Conference proceeding              │
                    │ 2 Increase access to medical         │
                    │    insurance                         │
                    │ 3 Protocols                          │
                    │ 1 Loan reconsideration               │
                    │ 1 Intervention to prevent            │
                    │    unemployment                      │
                    └─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ 26 reports of 11 studies included    │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ 1 Debt counselling/advice            │
│ 5 Job clubs with skill training      │
│ 2 CBT                                │
│ 1 Guided meditation                  │
│ 1 Expressive writing                 │
│ 1 Emotional competence               │
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Fig. 1. Study selection.

(n = 1261), named it Työhön ('let's get to work'), and recruited people with a longer history of unemployment (11 months v. 3-4 months in JOBS I and JOBS II). Unlike the two JOBS trials a high proportion (78%) of participants were female (Vuori *et al.* 2002; Vuori & Silvonen, 2005; Vuori & Vinokur, 2005). Rife *et al.* (n = 52) provided practical job skills training workshops two afternoons per week for 12 weeks (Rife, 1992; Rife & Belcher, 1994) and Gustafson *et al.* (n = 16) delivered job skills training interventions similar to JOBS I for eight 3 h sessions over 2 weeks (Gustafson, 1995).

The 'job club' intervention delivered in JOBS I had no effect on levels of anxiety or depression at 6 weeks or 4 months (see Table 2). A *post-hoc* subgroup analysis showed that the participants with higher risk of developing depression, based on the 25% of

participants with highest baseline risk of depression, economic hardship and social assertiveness (Price *et al.* 1992) benefited most from the intervention (interaction: p = 0.01). In high-risk participants depression scores were reduced at 6 weeks [difference in means: −0.26, 95% confidence interval (CI) −0.48 to −0.04; interaction: F = 6.07 p = 0.01], 4 months (difference in means: −0.36, 95% CI −0.59 to −0.13; interaction: F = 12.14 p = 0.001) and 28 months (difference in means: −0.25, 95% CI −0.50 to 0.0; interaction: F = 6.05 p = 0.01) by up to almost 0.5 s.d. on the depression subscale of the Hopkins Symptom Checklist 90 (HSCL-90; see Table 2). JOBS I had no effect on employment at the same time points (see Table 3) (Caplan *et al.* 1989; Price *et al.* 1992; Vinokur *et al.* 1991*a, b*, 1995*a*; Vanryn & Vinokur, 1992).

Table 1. *Details of interventions and participants*

Study ID, country, design, no. of arms, no. of participants	Population age and gender and ethnicity	Intervention type	Referral pathway and inclusion criteria	Control
JOBS I (Caplan *et al.* 1989; Vinokur *et al.* 1991*a*, *b*; Price *et al.* 1992; vanryn & Vinokur, 1992; Vinokur *et al.* 1995*a*, *b*) USA RCT 2 arms N = 1122 randomized, 83% completed baseline, 88% at 6 weeks and 80% at 4 months	Unemployed: 100% Duration of unemployment: mean of 13 weeks, s.d.=9 weeks. Maximum 4 months Age: mean 35.9 years (range not provided) Gender: 46% male Ethnicity: 75% white Baseline mental health: not reported	'Job club' (JOBS I) JOBS skills training seminars to improve job seeking Class based group active training sessions with two trainers (male/female pairs) aiming to cover problem solving, decision making processes, inoculation against setbacks, provision of social support and positive regard from trainers, learning and practicing job, search skills, building self-esteem. This intervention aimed to set itself apart from the work of Azrin et al (Azrin *et al.* 1975; Azrin & Philip, 1979) Delivered to: people in groups of 16–20 participants Duration and frequency: eight 3 h sessions over 2 weeks	From four state recruitment compensation offices in SW Michigan	Written material. 25 page booklet on Job skills and job searching
JOBS II (Vinokur *et al.* 1995*a*, *b*; Vinokur *et al.* 1996; Vinokur & Schul, 1997; Vinokur *et al.* 2000) USA RCT 2 arms N = 1771 completed baseline. 1801 randomized, 80% at T2; 87% at T3	Unemployed: 100% Duration of unemployment: mean 4.11 weeks s.d.=3.8 weeks. Maximum 13 weeks Age: mean 36.2 years (range not provided) Gender: 45% male Ethnicity: 76% white Baseline mental health: People with depression were excluded. Each participant completed a selection questionnaire from Price *et al.* (1992) (JOBS I) and a 'weighting' was applied to classify people at low or high risk of poor mental health. JOBS II	'Job club' (JOBS II) JOBS skills training seminars to improve job seeking Content same as JOBS I but with a focus on increasing sense of mastery, increase of personal control and job search efficacy. Included problem solving, decision making, group processes, inoculation against setbacks, receiving social support and positive regard from the trainers. Learning and practicing job seeking skills. Skill training Group support, problem solving, trainer support, active identification of possible setbacks, planning how to respond to these and practicing responses	From four state recruitment compensation offices in South West Michigan	Written, self-administered, job search materials and pamphlet. 25 page booklet on Job skills and job searching

	then oversampled from those at High risk of poor mental health based on these criteria. This was done because JOBS I found the Job Club intervention appeared to improve depression symptoms of those at higher risk	Delivered to: People in groups of 12–20 participants Duration and frequency: 5x4 h sessions over 1 week		
Työhön (Vuori *et al.* 2002; Vuori & Vinokur, 2005) Finland RCT 2 arms *N* = 1261 randomized, 994 (78%) completed	Unemployed: 100% Duration of unemployment: median 5 months (mean = 10.7 s.d. = 17.3). 28% unemployed for 12 months or longer Age: mean = 37 (18–61 years) Gender: 22% male Ethnicity: not reported Baseline mental health: not reported	'Job club': Työhön 'let's get to work' Job Search Program. Based on JOBS I Main difference between this trial and JOBS I and JOBS II is context. Finnish unemployed participants have longer access to higher rates of unemployment benefit than US counterparts Components: class based group active training sessions with two trainers (male/female pairs) aiming to cover problem solving, decision making processes, inoculation against setbacks, provision of social support and positive regard from trainers, learning and practicing job, search skills, building self-esteem Delivered to: groups of 6–17 participants Duration and frequency: daily, half-day sessions over 5 days	By post, phone and direct contact from four employment offices by contacting recently laid-off workers; recruiting services of trade unions, associations of the unemployed, and universities; and by advertisements in newspapers, radio, and the Internet	Written job search materials
(Rife, 1992; Rife & Belcher, 1994) USA RCT 2 arms *N* = 52, randomized 100% completed	Unemployed: 100%. Duration of unemployment not described Age: mean 58 years (range not provided) Gender: 56% male Ethnicity: 94% white Baseline mental health: mean Geriatric Depression Scale (GDS) intervention 6.6 control 6.2. Participants were reported to be 'mildly depressed'	'Job club': JOBS skills training seminars to improve job seeking Provision of practical assistance in completing forms and CVs and access to telephones to call potential employers· Based on work by Gray 1983 and Azrin 1978(Azrin, 1978, Gray, 1983) Components: 'Job club' consisted of a half-day, group, workshop on job-search techniques. Then on-going 'job club' meetings two afternoons per week. These comprised goal setting, receiving information about job seeking, interviewing, writing CVs and completing application forms.	People who had applied for employment assistance services with the community agency	Usual service: State Government Job Service and community referral programme, e.g. employment registration, information and referral

Table 1 (*cont.*)

Study ID, country, design, no. of arms, no. of participants	Population age and gender and ethnicity	Intervention type	Referral pathway and inclusion criteria	Control
		Groups also provided practical advice and help on information on job leads, access to telephones, and support (peer and from the group leaders) Duration and frequency: one half day workshop followed by two afternoon workshops per week for 12 weeks		
(Gustafson, 1995) USA RCT 2 arms *N* = 16 100% completed	Unemployed: 100% Duration of unemployment: mean 5.5 months range (1.5–13) Age: median 36 years (21–50 years) Gender: 25% male Ethnicity: 88% white Baseline mental health Stait Anxiety: Intervention mean 48.2 (s.d.=11.8), control mean 41.0 (s.d.=8.5). Trait anxiety mean 43.6 (s.d.=14.3), control mean 46.6 (s.d.=7.5)	'Job club': based on JOBS I Components: coping skills, problem solving, inoculation against setbacks, social support and positive regard from trainers, job seeking skills training and practice, job interview preparation Delivered to: group of 8 people Duration and frequency: 8x3 h sessions over 2 weeks	Recruitment from Saddleback college career centre offices, California	Written, self-administered, job search materials and pamphlet
(Proudfoot *et al*. 1997, 1999) UK RCT 2 arms *N* = 289 randomized	Unemployed: 100% Duration of unemployment: for 12 months to 12 years. Mean length of unemployment 25.8 months intervention group and, 23.1 months control group Age: mean 43 years (22–62 years) Gender: 83% male Ethnicity: not reported Baseline mental health: Intervention group: GHQ-30 59% scored 5 or more. Control group:	CBT Group CBT To identify and test the validity of automatic thoughts, reattribution of thoughts, and monitoring behaviour and experimentation with behaviours. The CBT included weekly homework Components: introduction to cognitive model, goal setting, automatic thoughts, Though recording, common thinking errors, techniques to change unhelpful thinking, personalization of the approach, homework, Final session was to teach	Newspaper adverts, mail shots, the UK Employment service, employment/ recruitment organization	Social support programme, same format as CBT and included weekly homework

	GHQ-30 54% scored of 5 or more (psychiatric caseness)	participants to use what they had learned in the future Delivered to: groups of 10–15 people Duration and frequency: 3 h weekly for 7 weeks		
(Harris *et al.* 2002) Australia RCT 2 arms *N* = 195 randomized 100 % completed	Unemployed: 100% Duration of unemployment: mean length of unemployment 33 months (s.d. = 40.0) Age: 34 years s.d. = 9.4 (18–45 years) Gender: 55% male Ethnicity: not reported Baseline mental health Intervention SF-36 Mental Component Scale 41.03 (15.13), control 45.63 (12.35) Other: long-term unemployed from disadvantaged areas of Sydney. 51% left school before completing higher-level qualifications	CBT: Group CBT Cognitive restructuring (identifying negative thoughts, modifying and replacing thoughts), problem solving (five step structured problem solving activity), behaviour strategies (relaxation skills, breathing techniques) CBT was modified during pilot testing from an existing 3-day CBT programme to a 2 day programme Delivered to: groups of 5–16 people Duration and frequency: 2 days (11 h total)	Employment support agencies in disadvantaged areas of Sydney	Two-day Senior First Aid certificate. Two-day Senior First Aid Certificate – fundamental principles/knowledge/skills of First Aid Duration and frequency: Two days with exam
(Pleasence & Balmer, 2007) UK RCT 2 arms *N* = 402 randomized. 234 completed (119 intervention and 115 control)	Unemployed: 'Mostly unemployed seeking work' recruited from job centres In debt: 100% of participants were in debt Age: mean 35 years (range not provided) Gender: not reported Ethnicity: 66% white Baseline mental health: not reported	Debt advice: telephone call from trained advisors from 'National Debtline' Where was advice given? By phone Content: telephone call from National Debtline. Advice was free of charge. Immediate advice and assistance was provided in relation to any emergency issues, (e.g. bailiffs or repossession). Main advice was on longer-term resolution of problems such as debt management programmes. Written self-help materials were provided. Participants could be referred on to other services Delivered to: individuals Duration and frequency: one-off telephone call	Researchers approached people in job centres	No intervention. Usual Job Centre service

Table 1 (*cont.*)

Study ID, country, design, no. of arms, no. of participants	Population age and gender and ethnicity	Intervention type	Referral pathway and inclusion criteria	Control
(Spera *et al.* 1994) USA RCT 3arms[a] *N* = 63 (in three arm, 41 participants discounting the non-randomized intervention arm)	Unemployed: 100% Duration of unemployment: mean 5 months. Mean 20 years working with same employer Age: mean 54 years (40–68 years) Gender: 98% male Ethnicity: not reported Baseline mental health: measured but values not reported Other: managerial professionals being offered the services of an outplacement company as they were being laid off from employment	Writing transition project Daily, private, disclosive writing sessions for recording personal and deepest thoughts and feelings about unemployment and how their lives both personal and professional, had been affected. Participants were encouraged to explore their emotions deeply Duration and frequency: 20 min daily for 5 days	Professionals recruited from outplacement firms	Control writing: Daily, private, disclosive writing sessions for recording plans for the day, and activities in job search Duration and frequency: 20 min daily for 5 days
(Joseph, 1999; Joseph & Greenberg, 2001) USA RCT 2 arms *N* = 76 randomized.	Unemployed: 100% Duration of unemployment: mean unemployment duration 2.3 months, range (0–5.8 months) Age: mean 46.8 years (29–64 years) Gender: 60% male Ethnicity: 83% white Baseline mental health: Intervention group mean CES-D (s.d.) 12.38 (9.39) Control CES-D 16.68 (10.25) Other: participants were described as 'business workers'. Mean years in last job 8.27 years (0.17–30.58) years	Guided imagery group intervention: Components: six brief, 20 min sessions. Participants followed tape recorded guided muscle relaxation followed by guided imagery covering; emotional experience of job loss and unemployment, job search and job interview rehearsal, positive self-regard and cognitive reframing	Professionals recruited from outplacement firms	Placebo imagery: Self-directed visualization of job search plans and activities in the past and the future 6x20 min 'imagery sessions' following written instructions, thinking about their daily job search activities
(Hodzic *et al.* 2015a, b) Spain RCT 2 arms	Unemployed: 100% Duration of unemployment: mean unemployment duration 16.9 months.	Emotional competences training: based on Kotsou *et al.* (2011) Group work to identify and understand emotions of the self and other, using	Unemployed from unemployment agencies Inclusion criteria. (a) being unemployed, (b) motivated about the intervention process, (c) no prior knowledge about the	No intervention

N = 78, randomized	Age: intervention mean age 32.68 (s.d.=10.34), control mean age 36.4 (s.d.=12.02) Gender: 13% male Ethnicity: not reported Baseline mental health: GHQ-12 intervention group mean = 2.42 (s.d. = 0.53), control group mean = 2.58 (s.d. = 0.60). Mood anxiety mean = 2.94 (s.d. = 0.98), control mean = 2.59 (s.d. = 0.95) Mood depression mean = 1.83 (s.d. = 0.87), control mean = 1.70 (s.d. = 0.58)	emotions to assess need, regulating emotions, conflict management, practical work to regulate one's own emotions and to listen to others' emotions. Including video clips, group exercise, discussion and role play Duration and frequency: 3 days (5 h per day). Day one and 2 were consecutive. Two weeks gap between day 2 and day 3	intervention, (d) not using the intervention content for professional purposes, (e) not planning psychological treatment during the training, and (f) not being dependent on drugs, alcohol or psycho-pharmaceuticals

[a] Although Spera *et al.* (1994) had three arm study with *n* = 63 participants we are using data from just two study arms (*n* = 41) the people in one of the groups (no writing) were not allocated during the randomization procedure (Spera *et al.* 1994). CES-D Centre of epidemiologic studies depression scale.

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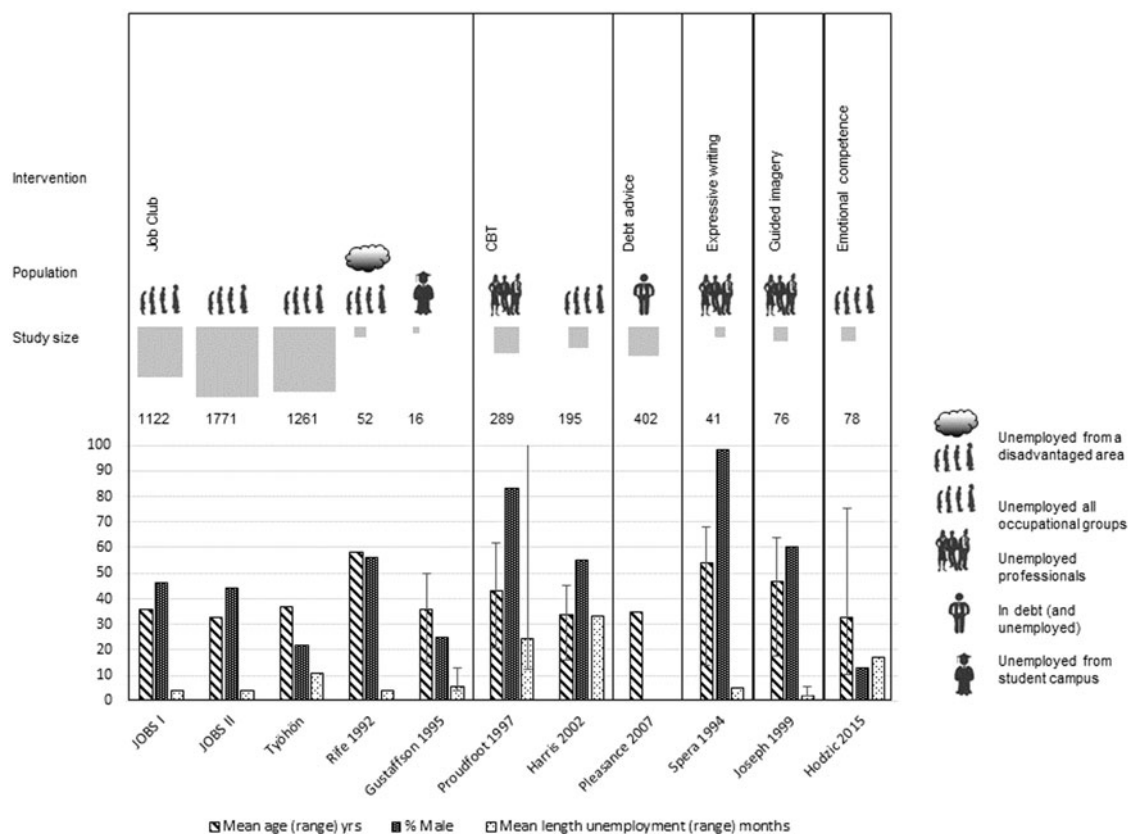
Fig. 2. Visualization of study characteristics. Ranges for age and length of unemployment were presented when data were available.

JOBS II evaluated a modified version of JOBS I and stratified participants at baseline according to their risk of depression (high or low). The authors reported a small improvement of depressive symptoms at 2 years for those who received the intervention (standardized linear regression coefficient −0.06, $p < 0.05$) (see Table 2). As in JOBS I, stronger effects of approximately 0.2 S.D. improvements were seen in participants at high risk of depression (around 40% of the trial participants) (interaction: $F_{1,1331} = 4.10$, $p = 0.043$). There was no effect on the Composite Index of Depression Inventory (CIDI), a 9-point scale of likelihood of major depressive episode (MDE) (linear regression: −0.04 S.D. $p > 0.05$). However, using the more stringent criteria of probable (90% likely) to have a MDE (scores of 7 or 8 on CIDI) fewer people in the intervention group had probable MDE at 2 years compared to those in the control (odds ratio 0.61, $p < 0.05$). This intervention was also associated with improved employment at this time point (Vinokur *et al.* 1995*b*, 1996, 2000; Vinokur & Schul, 1997). In the Finnish version of JOBS II, Työhön ('Let's get to work'), there were improved psychological symptoms (GHQ-12) at 6 months and improved depression symptoms at 6 months and 24 months, although, as described above for JOBS II, the actual size of the

reduction in depressive symptoms was small. No analyses stratified by baseline depression risk were reported. In the Työhön study there was no effect on employment at 6 or 24 months (see Tables 2 and 3) (Vuori *et al.* 2002; Vuori & Silvonen, 2005; Vuori & Vinokur, 2005). Rife and colleagues assessed the effects of a similar intervention, more focussed on practical skills training, and reported that the people in the intervention group showed an improvement in depressive symptoms on the Geriatric Depression Scale at 3 months ($p < 0.05$) and more of this group were employed compared to the control group (65% *v.* 26% $p < 0.01$) (see Tables 2 and 3) (Rife, 1992; Rife & Belcher, 1994). Gustafson's small ($n = 16$) trial found no effect of the 'job club' intervention on anxiety scores or employment (see Table 2), but was under-powered (Gustafson, 1995). The trials and subgroups where the greatest improvements were seen in employment were those in which participants experienced the greatest improvement in depression (Rife, 1992; Rife & Belcher, 1994; Vinokur *et al.* 1995*b*).

CBT interventions

Two studies assessed the effect of group CBT on long-term unemployed individuals. The intervention content

Intervention	Study name	Selection bias — Generation of random sequence was truly random	Selection bias — Allocation was concealed	Baseline outcome measurements were similar	Baseline participant characteristics were similar	Attrition bias — Complete outcome data available	Performance bias — Participants were unaware of intervention allocation[a]	Detection bias — Blinding of SUBJECTIVE mental health outcomes	Reporting bias — No evidence of selective reporting of outcomes	Other bias
Job club	JOBS I	?	?	✓	✓	?	×	×	?	?[b]
	JOBS II	✓	?	✓	✓	✓	×	×	×	✓
	Työhön	?	?	✓	✓	×	×	×	?	✓
	Rife 1992	?	?	✓	✓	✓	×	×	?	✓
	Gustaffson 1995	?	?	✓	✓	✓	×	×	?	✓
CBT	Proudfoot 1997	✓	?	✓	✓	?	×	×	?	✓
	Harris 2002	?	?	×	?	×	×	×	×	✓
Debt Advice	Pleasance 2007	✓	✓	?	?	×	×	✓	?	×[c]
Emotional competence Training	Hodzic 2015	?	?	✓	✓	×	×	×	?	✓
Expressive writing	Spera 1994	?	?	✓	✓	?	×	×	?	✓
Guided imagery	Joseph 1999	?	?	✓	✓	×	×	×	✓	×[d]

Fig. 3. Risk of bias. ✓ Domain was judged to be low risk of bias; ×, domain was judged to be at high risk of bias; ?, it was not possible to assess the risk of bias for this domain; [a]it is not possible to obscure the type of intervention in studies such as these as the participants are aware of the intervention they are receiving, therefore all studies are rated at high risk-of-bias; [b]employment outcome was complex, dichotomised to working enough and not working enough however 14% of people did not meet these criteria and were not included in the outcome assessment; [c]stopped early high drop out; [d]difference in baseline of people exposed to relaxation techniques. CBT, Cognitive behavioural therapy.

was similar in both trials, including cognitive restructuring, behaviour modification and homework assignments. However, Proudfoot *et al.* (1997) provided sessions of 3 h per week for 7 weeks (21 h) compared to Harris *et al.* (2002) who provided 11 h over 2 days (see Table 1 and Supplementary Appendix 3). Both studies used an active comparator arm [social support programme that included homework (Proudfoot *et al.* 1997) and a 2-day senior certificate in first aid (Harris *et al.* 2002)] to mimic the attention provided to participants in the intervention arm. The populations were quite different; Proudfoot *et al.* ($n = 289$) enrolled long-term (>12 months) unemployed professionals who were mostly (83%) male, whereas Harris *et al.* ($n = 195$) targeted long-term unemployed individuals in disadvantaged areas who were of lower socioeconomic status and were 55% male (see Table 1) (Harris *et al.* 2002; Proudfoot *et al.* 1997).

Proudfoot *et al.* reported that CBT improved mental health (GHQ-30) scores (difference in means: -1.44, 95% CI −3.20 to 0.32, $p < 0.05$) at 7 weeks but found no effect on the proportion of participants meeting thresholds for a psychiatric 'case' (defined as a score >5 on GHQ-30) in the intervention group (21%) compared to the control group (23%) ($p = 0.78$; see Table 2). However, people receiving CBT were more likely to be employed at 7 weeks compared to those in the control group (34% *v.* 13%, $p = 0.0006$; see Table 3) (Proudfoot *et al.* 1997). The second, smaller CBT trial of Harris *et al.* (2002) showed no effect on employment or the mental health indicators (Harris *et al.* 2002); if anything there was evidence of an adverse effect on measures of hopelessness (difference in means: −2.04, 95% CI 0.66 to 3.42) and optimism (difference in means: −2.6, 95% CI −4.10 to 1.10; see Table 2), although there were baseline differences between the study arms with higher levels of self-esteem (Table 2) and shorter durations of unemployment (Table 3) in the control compared to the intervention arm (Harris *et al.* 2002).

Other interventions

Four other interventions have been evaluated in single trials of 41–402 participants. Telephone debt advice to people ($n = 402$) who were in debt (recruited from unemployment offices) had no effect on measures of anxiety (Table 2) or on numerous measures of indebtedness (see Table 3) (Pleasance & Balmer, 2007), but only 31% of participants in the intervention group actually received debt advice and 10% of the control (no intervention) group independently sought debt advice (Pleasance & Balmer, 2007). One study ($n = 41$) provided unemployed

people with opportunities for expressive writing (20 min over 5 days where they could disclose effects of unemployment) compared to control writing (Spera *et al.* 1994). Expressive writing had no effect on symptoms of anxiety at 3 months (Table 2) but appeared to improve employment (Table 3) (Spera *et al.* 1994). Joseph and colleagues (*n* = 76) assessed the effects of guided imagery (20 min over six sessions) that allowed participants to visualize their success at finding and obtaining employment and also included relaxation techniques compared to control imagery (see Table 2) (Joseph, 1999; Joseph & Greenberg, 2001). People who received guided imagery were more likely to be in employment at 7 weeks but there was no effect on depression (Tables 2 and 3) (Joseph, 1999; Joseph & Greenberg, 2001). Finally, a trial (*n* = 75) of the provision of group emotional competency training for unemployed people compared to no intervention did not present an analysis of the effects emotional competency training on mental health but calculation of the difference in means and 95% CIs showed no effect on (GHQ-12), nor on symptoms of depression, anxiety or stress (see Table 2) (Hodzic *et al.* 2015*a*).

Discussion

Main findings

There is consistent evidence from large RCTs in different settings, including three trials with more than 1000 participants, that intensive 1- to 2-week 'job club' interventions for unemployed people reduce the risk of depression. The most clinically relevant effects are seen among participants at increased risk of developing depression (around a quarter of participants); in this group, effect sizes of up to 0.5 S.D. improvements in depression scores were seen. Improvement in depression was seen for up to 2 years, although effects on employment were mixed. Larger effects on depression were seen in trials/subgroups with the greatest increases in employment.

The only other intervention investigated in more than one trial was group CBT. There was good evidence of a short-term (3 months) effect on depression symptoms and re-employment in the larger trial that delivered CBT over 7 weeks, though no effect on psychiatric 'caseness' (Proudfoot *et al.* 1997). The second showed no beneficial effects (Harris *et al.* 2002). Differences between these two trials may reflect differences in participants [professionals (Proudfoot *et al.* 1997) *v.* people from disadvantaged areas (Harris *et al.* 2002)] and timing/intensity of the intervention [21 h provided weekly over 7 weeks (Proudfoot *et al.* 1997) *v.* 11 h provided over 2 days (Harris *et al.* 2002)].

There is limited evidence for other interventions, but these were all evaluated in single trials with small

sample sizes (Spera *et al.* 1994; Joseph & Greenberg, 2001; Hodzic *et al.* 2015*a*) or limited uptake of the intervention (Pleasence & Balmer, 2007).

Risk of bias was a problem for many of the studies with a third of the items rendered not assessable because the items were not reported. Taking into account the high risk of bias of the studies we have to interpret the strength of the evidence with some caution. Studies varied in the quality of reporting important details of interventions. In four a manual was used (Caplan *et al.* 1989; Vinokur *et al.* 1995*b*; Harris *et al.* 2002; Vuori *et al.* 2002) and three included an assessment of fidelity to treatment (Caplan *et al.* 1989; Vinokur *et al.* 1995*b*; Vuori *et al.* 2002). Detailed descriptions of interventions and assessments made to assess fidelity to treatment should be described in future studies (Craig *et al.* 2008).

Evidence of improvement in depressive symptoms in intervention group participants coincided in some studies with higher levels of re-employment (JOBS II high-risk group and Proudfoot *et al.*) (Vinokur *et al.* 1995*b*; Proudfoot *et al.* 1997, 1999; Vinokur *et al.* 2000); however, in some studies this was not the case (JOBS I and Työhön) (Vinokur *et al.* 1991*b*; Price *et al.* 1992; Vuori *et al.* 2002; Vuori & Silvonen, 2005). Some studies looked for aspects of the intervention that might contribute to the change in outcome (mediating effects). There was some evidence in JOBS II that reduced depressive symptoms were associated with reduction of financial strain and reemployment (Vinokur & Schul, 1997). Job search preparedness (self-efficacy and inoculation against setbacks) reduced depressive symptoms and improved employment in JOBS I and Työhön but the authors do not present an analysis on effects of employment on mental health for JOBS I (Vanryn & Vinokur, 1992; Vuori & Vinokur, 2005). Työhön authors did identify a link between reduced financial strain and reduction in depressive symptoms (Vuori & Vinokur, 2005).

Strengths and limitations

To the best of our knowledge this is the first comprehensive review of RCT evidence of interventions targeted at alleviating the impact on mental health of unemployment and debt in general population samples. Two reviews with a narrower focus solely on 'job search' interventions, which included evidence from non-randomized studies, reported that 'job search' interventions reduced depression and anxiety and improved employment (Audhoe *et al.* 2010; Liu *et al.* 2014). A strong evidence base in this area is important to inform policy responses to future recessions as these are associated with rises in unemployment, debt, depression, and suicidal behaviour. Our review facilitates an overview of the types of

Table 2. *Mental health outcomes by Intervention type*

Intervention type	Outcome	Outcome scale	Study	n	Time point (sample)	Intervention Mean (S.D.)	n	Control Mean (S.D.)	n	Published analysis by trial authors	Calculation of difference in means, or risk difference, using available published summary data from studies[a,b]
Job club	Anxiety	Subscale of HSCL-90	JOBS I	630	6 weeks (all)	1.87 (–)	–	1.88 (–)	–	ES = −0.03, $t = 0.36(630df)$, $p = 0.718$	MD −0.01 (not calculable)
				623	4 months (all)	1.89 (–)	–	1.86 (–)	–	ES = 0.04, $t = 0.45(623df)$, $p = 0.652$	MD −0.03 (not calculable)
		STAI State	Gustafson 1995	16	6 weeks	43.7 (14.9)	8	38.0 (6.9)	8	$\chi^2 \, p > 0.05$	MD 5.70 (−5.68 to 17.08)
		STAI Trait		16	6 weeks	41.7 (10.7)	8	44.6 (7.3)	8	$\chi^2 \, p > 0.05$	MD −2.90 (−11.88 to 6.08)
	Depression	HSCL-90	JOBS I	630	6 weeks (all)	1.84 (–)	–	1.91 (–)	–	ES = −0.09, $t = -1.12(630df)$, $p = 0.263$ ns	MD −0.07 (not estimable)
				522	6 weeks (low)[c]	1.67 (0.50)	340	1.60 (0.51)	182	Interaction $F = 6.07$, $p = 0.01$[d]	MD 0.07 (−0.02 to 0.16)
				179	6 weeks (high)[c]	2.21 (0.73)	117	2.47 (0.70)	62		MD −0.26 (−0.48 to −0.04)
				623	4 months (all)	1.84 (–)	–	1.92 (–)	–	ES = −0.11, $t = -1.30$ (623df), $p = 0.194$ ns	MD −0.08 (not estimable)
				695	4 months (all)	1.72 (0.63)	465	1.84 (0.69)	230	t test ns	MD −0.13 (−0.24 to −0.02)
				511	4 months (low)[c]	1.59 (0.55)	343	1.63 (0.52)	168	Interaction $F = 12.14$, $p = 0.001$[d]	MD −0.04 (−0.14 to 0.06)
				184	4 months (high)[c]	2.08 (0.72)	122	2.44 (0.78)	62		MD −0.36 (−0.59 to −0.13)
				456	28 months (low)[c]	1.55 (0.53)	305	1.61 (0.56)	151	Interaction $F = 6.05$, $p = 0.01$[d]	MD −0.06 (−0.17 to 0.05)
				157	28 months (high)[c]	1.95 (0.73)	103	2.20 (0.77)	52		MD −0.25 (−0.50 to 0.00)
		HSCL-90	JOBS II	742	2–6 months (low)	–	–	–	–	–	–
				470	2–6 months (high)	–	–	–	–	$F_{1,1331} = 4.10 \, p = 0.043$, difference = −0.2 S.D. at 2 months Difference = −0.22 S.D. at 6 months[e] -	–
				578	24 months (all)	–		–	–	Beta LR = −0.06, $p < 0.05$	–
		CIDI MDE[f]		578	24 months (all)	–		–	–	Beta LR = −0.04, $p > 0.05$	–
		CIDI Probable MDE[f]		578	24 months (all)	–		–	–	Beta Log R = −0.49, $p < 0.05$ (OR = 0.612)	–

Table 2 (*cont.*)

Intervention type	Outcome	Outcome scale	Study	n	Time point (sample)	Intervention Mean (S.D.)	n	Control Mean (S.D.)	n	Published analysis by trial authors	Calculation of difference in means, or risk difference, using available published summary data from studies[a,b]
		GDS	Rife 1992	52	12 weeks	5.03 (–)	26	7.07 (–)	26	MW U 188.5, $Z = -2.76$, $p < 0.05$	MD −2.0 (not estimable)
		HSCL90	Työhön	1049	6 months	–	–	–	–	SLRC (Beta) = −0.04 ns	
				1261	24 months	–	–	–	–	SLRC (Beta) = −0.06, $p < 0.05$	
	Psychological symptoms	GHQ-12	Työhön	1049	6 months	–	–	–	–	SLRC (Beta) = −0.06, $p < 0.05$	
				952	24 months	–	–	–	–	SLRC (Beta) = −0.06, $p < 0.05$	
CBT	Psychiatric caseness	Score >5 on GHQ-30	Proudfoot 1997	209	7 weeks	–	–	–	–	21% CBT 23% control t test, $p = 0.78$	RD−0.01 (−0.12 to 0.09)
	Psychiatric symptoms	GHQ-30		209	7 weeks	3.72 (5.81)	112	5.16 (7.01)	97	$F = 3.91$, $p < 0.05$[g]	MD −1.44 (−3.20 to 0.32)
				183	3 months	4.92 (7.21)	94	6.58 (8.14)	89	$F = 3.85$, $p < 0.05$[g]	MD −1.66 (−3.89 to 0.57)
		SF-36 MCS	Harris 2002	195	3–4 months	44.14 (12.19)	57	46.31 (12.78)	43	t test ns[h]	MD −2.17 (−7.13 to 2.79)
	Mood	BHS	Harris 2002		3–4 months	5.11 (4.27)	57	3.07 (2.73)	43	$F_{1, 97} = 7.26$, $p = 0.01$[g]	MD 2.04 (0.66 to 3.42)
		LSS Opt			3–4 months	13.54 (4.09)	57	16.14 (3.54)	43	$F_{1, 97} = 7.29$, $p = 0.01$[g]	MD −2.60 (−4.10 to −1.10)
Debt advice	Anxiety	STAI-6	Pleasence 2007	402[i]	0–5 months	–	–	–	–	MVM ES -2.43, S.E. = 2.73 ns	
Emotional competence training											
	Mental health	GHQ-12	Hodzic 2015	75	1 months	2.18 (0.59)	41	2.48 (0.60)	34		MD −0.30 (−0.57 to 0.03)
					6 months	2.20 (0.53)	38	2.38 (0.53)	26		MD 0.18 (−0.44 to 0.08)
	Stress	PSSS		75	1 months	2.73 (0.66)	41	2.69 (0.66)	34		MD 0.04 (−0.26 to 0.34)
				64	6 months	2.61 (0.60)	38	2.69 (0.56)	26		MD −0.08 (−0.37 to 0.21)
	Anxiety	POMS		75	1 months	2.63 (0.92)	41	2.73 (0.98)	34		MD −0.10 (0.53 to 0.33)

				64	6 months	2.64 (1.02)	38	2.76 (0.86)	26		MD −0.12 (−0.58 to 0.34)
	Depression	POMS		75	1 months	1.76 (0.75)	41	1.76 (0.85)	34		MD 0.00 (−0.37 to 0.37)
				64	6 months	1.72 (0.81)	38	1.67 (0.55)	26		MD 0.05 (−0.28 to 0.38)
Guided imagery	Depression	CES-D	Joseph 2001	52	2 weeks	10.67 (10.63)	26	12.92 (11.02)	26	MF ANOVA no main effect intervention $F_{1,47}=2.25$, $p=>0.05$ No intervention x time interaction $F_{2,94}=0.062$, $p=0.939$ ns	MD −2.25 (not estimable)
				52	2 months	8.71 (8.86)	26	12.48 (12.26)	26	ANOVA result as above	MD −3.77 (not estimable)
Expressive writing	Anxiety	SMUHQ	Spera 1994[i]	41[j]	3 and 8 month	–	–	–	–	ANOVA ns	–

BHS, Beck Hopelessness Scale; CES-D, Centre of Epidemiologic Studies Depression Scale; ES, Effect size; GDS, Geriatric Depression Scale; GHQ-12, General Health Questionnaire - 12 items. Self-report measure of psychological morbidity (Goldberg et al. 1997); GHQ-30, General Health Questionnaire 30 Item. Self-report measure of psychological morbidity; HSCL-90, Hopkins Symptom Checklist 90 Subscale – 11 items adapted for use in Finland (Vuori et al. 2002). The measure of depressive symptoms was a 10-item Finnish scale (Salokangas et al. 1994) based on the Hopkins Checklist (Derogatis et al. 1974) Cronbach's α coefficients were 0.92 at T1 and 0.92 at T4; Log R, Logistic regression; LR, Linear Regressions; LSS-Opt, Life satisfaction scale subscale optimism; MD, difference in means; MF ANOVA, multifactorial ANOVA; MVM, multivariate model, Pleasence & Balmer (2007). The authors state 'We fitted a multivariate model fitting STAI-6 and EQ-5D scores simultaneously as normal response variables' The effect sizes they report are changes from baseline to follow-up at 20 weeks; MW-U, Mann–Whitney U; ns, not reaching the statistical significance of a p value $\leqslant 0.05$; OR, odds ratio; POM, Profile of Mood States Questionnaire; PSS, Perceived Stress Scale; RD, risk difference; SF-36, Short-Form-36 Health Survey Questionnaire (Ware et al. 1994); SLRC, Standardized linear regression coefficient; For the Työhön study the s.d. for the HSCL-90 were reported as 6 for the intervention or 6.5 for the control. Therefore a change in 0.06 of a s.d. represents a change in score of 0.36 of a point on the HSCL-90 scale). For the JOBS II study no s.d. is provided for the HSCL-90; SMUHQ, Southern Methodists University Health Questionnaire (Watson & Pennebaker, 1989); STAI, Stait Trait Anxiety Scale (reduction in score = benefit range 20–80 score of >42 = case). Gustafson 1995; 6 week data (Gustafson, 1995): Harris 2002; 3–4 month data (Harris et al. 2002): Hodzic 2015; 1 month and 6 month data (Hodzic et al. 2015a): JOBS I; 6 week, 4 month data (Vinokur et al. 1991a), 28 month data (Vinokur et al. 1991b), low risk and high risk data all time points (Price et al. 1992): JOBS II; 2 month and 6 month data (Vinokur et al. 1995b), 2 year data (Vinokur et al. 2000): Joseph 2001; 2 week and 2 month data (Joseph, 1999, Joseph & Greenberg, 2001): Rife 1992; 12 week data (Rife, 1992): Työhön; 6 month data (Vuori et al. 2002); 24 month data (Vuori & Silvonen, 2005): Pleasance 2007; 0-5 month (Pleasence & Balmer, 2007): Proudfoot 1997; 7 week data (Proudfoot et al. 1999, Proudfoot et al. 1997): Spera 1994 (Spera et al. 1994).

[a] Risk difference calculated using methods described in Deeks & Higgins (2010) Statistical algorithms in Review Manager 5.2 (Deeks & Higgins, 2010).

[b] Mean difference calculated using methods described in Salanti (2013) Statistical algorithms for the Calculator in Review Manager 5.2 (Salanti, 2013).

[c] Data from Price et al. (1992). Participants were at high or low risk of depression. NB People scoring $\geqslant 3$ on pre-test depression were excluded from the analysis.

[d] Two-way ANCOVA (analysis of covariance) baseline depression and hours of employment as covariates and stratified by predicted risk of depression score (75% low risk; 25% high risk) (Price et al. 1992).

[e] Generalized linear model analysis of variance (ANOVA) 4.10 = F of interaction of risk (high or low) and condition (intervention or control) (Vinokur et al. 1995b).

[f] CIDI (Composite Index of Depression Inventory). Defines the occurrence of major depressive episode (MDE). A less stringent definition of 'probable' MDE was defined by dichotomizing a score of 0–6 = 0 or no diagnosis whilst 7–8 = 1 or probable diagnosis MDE.

[g] ANCOVA (analysis of covariance) with pre-test scores as covariates.

[h] Harris et al. do not present the p values for the t tests for SF-36 MCS. The t test is for baseline to follow-up within groups, i.e. not comparing groups. The authors report a χ^2 analysis to test for differences between groups but these data were not presented. They also prepare an ANCOVA using baseline values as covariates – and do not present these data.

[i] Only 31% of the intervention group received debt advice. 10% of the control group sought and obtained debt advice.

[j] Although the Spera et al. (1994) study had three arms ($n=63$) only two of the arms (Writing and No writing $n=41$) were allocated at random. While we are reporting only from these two study arms the ANOVA analyses include all three arms.

Table 3. *Employment, debt and debt awareness outcomes by intervention type*

Intervention type	Study	Outcome	Time point	n	Intervention %	Control %	Statistical evidence for differences	Calculation of difference in means, or risk difference, using available published summary data from studies[a,b]
Job club	JOBS I	Employment[c]	6 weeks	563	33	26	t test ns[d]	RD 0.07 (0.00–0.14)
			4 months	499	60	51	t test ns[d]	RD 0.08 (−0.00 to 0.16)
			28 months		71.2	68.3	MANOVA $F = 1.25$ ns[e]	Not estimable
	Gustafson 1995	Employment	6 weeks	16	63	50	χ^2 $p > 0.05$	RD −0.13 (−0.61 to 0.36)
	JOBS II	Employment[c]	2 months		34	27	Wald's $\chi^2 = 4.44$, $p > 0.05$	RD 0.07 (not estimable)
			2 months		35	29	Wald's $\chi^2 = 5.79$, $p > 0.05$	RD 0.06 (not estimable)
			6 months		63	67	Wald's $\chi^2 = 4.13$, $p < 0.05$	RD 0.04 (not estimable)
			6 months		62	54	Wald's $\chi^2 = 4.55$, $p < 0.05$	RD 0.08 (not estimable)
			24 months	–	–	–	BLRC = 0.44, OR = 1.55 $p < 0.001$	Not estimable
	Rife 1992	Employment	12 weeks	52	65	26	χ^2 (1) = 7.73, $p < 0.01$	RD 0.38 (0.13–0.63)
	Työhön	Employment	6 months	1261	34	31.9	ns	RD 0.02 (−0.04–0.08)
			24 months	1112	54.1	49.5	$\chi^2 = 2.41$ ns	RD 0.05 (−0.02 to 0.11)
CBT	Proudfoot 1997	Employment	4 months	209	34	13	χ^2 $p = 0.0006$	RD 0.21 (0.09 to 0.32)
		FT PT temp	4 months	209	49	28	χ^2 $p = 0.0016$	RD 0.21 (0.08–0.34)
	Harris 2002	Employment activity[f]	3–4 months	100	–	–	$\chi^2 = 0.27$, $p = 0.35$	Not estimable
Guided imagery	Joseph 2001	Employment	2 months	52	62	11	$\chi^2 = 14.02$, $p < 0.001$	RD 0.50 (0.28–0.72)
			4 months	124	69	38	$X^2 = 5.79$, $p < 0.001$	RD 0.31 (0.05–0.57)
Expressive writing	Spera 1994[g]	Employment	3 months	41[g]	25	0	$t_{50} = 2.10$, $p = 0.04$; ANOVA $F_{2,59} = 3.72$, $p = 0.03$[f]	RD 0.25 (0.05–0.45)
			8 months	41[g]	52.6	23.8	–	RD 0.29 (−0.00 to 0.58)
		FT; PT and contract	8 months	41[g]	68.4	47.6	ANOVA $F_{2,59} = 3.72$, $p = 0.03$[h]	RD 0.22 (−0.07 to 0.52)
Emotional competence training	Hodzic 2015	Employment	6 months	63	21.2% (7)	10% (3)	$\chi^2 = 1.48$, $p = 0.22$	RD 0.11 (−0.06 to 0.29)
			12 months	63	36.4% (12)	10% (3)	$\chi^2 = 6.02$, $p = 0.01$	RD 0.26 (0.07–0.46)
Debt advice	Pleasance 2007	Facing a debt problem	0–5 months	234	35	37	$\chi^2 2 = 0.22$, $p = 0.64$	RD 0.92 (0.65–1.30)
		Perceived changes in financial circumstances 'better'	5 months	234	42	30.1	ORM estimate intervention = 0.23, S.E. = 0.24, $p = 0.34$[i]	RD 0.12 (not estimable)

Perceived changes in financial circumstances 'the same'	5 months	234	17.6	24.8	$\chi^2 = 5.92$, $p = 0.015$	RD 0.07 (not estimable)
See a future without debt	5 months	234	–	–	BLRA estimate intervention = 0.32, s.e. = 0.33 ns	
Knowledge of debt problems	5 months	234	–	–	NRM intervention = 0.56, s.e. = 0.30, Wald test $\chi^2 = 3.47$, $p = 0.06$	
			Intervention mean	Control mean		
Number of debts	5 months	234	2.29	2.16	Poisson model −0.03, s.e. = 0.10 ns	MD 0.13 (not estimable)

BLRA, Binary logistic regression analysis; BLRC, binary logistic regression coefficient; Contract, contract employment; FT, full time; NRM, normal response model; MD, difference in means; OR, odds ratio; PT, part time; RD, risk difference; Temp, temporary. Gustafson 1995; 6 week data (Gustafson, 1995): Harris 2002; 3 to 4 month data (Harris *et al.* 2002); Hodzic 2015; 6 month and 1 year data (Hodzic *et al.* 2015*b*): JOBS I; 6 week, 4 month data (Vinokur *et al.* 1991*a*), 28 month data (Vinokur *et al.* 1991*b*): JOBS II 2 month and 6 month data (Vinokur *et al.* 1995*b*); 2 year data (Vinokur *et al.* 2000): Joseph 2001; 2 week and 2 month data (Joseph, 1999; Joseph & Greenberg, 2001): Rife 1992; 12 week data (Rife, 1992): Työhön 6 month data (Vuori *et al.* 2002); 24 month data (Vuori & Silvonen, 2005): Pleasence 2007; 0 to 5 month data (Pleasence & Balmer, 2007): Proudfoot 1997; 4 month (Proudfoot *et al.* 1997); Spera, 1994; (Spera *et al.* 1994).

[a] Risk difference calculated using methods described in Deeks & Higgins (2010) Statistical algorithms in Review Manager 5.2 (Deeks & Higgins, 2010).

[b] Mean difference calculated using (Salanti, 2013). Statistical algorithms for the Calculator in Review Manager 5.2.

[c] Employed >20 h per week and considered to be 'working enough'.

[d] Employment in JOBS I was defined as working 20 h per week or more PLUS working as many hours as they needed.

[e] Multivariate analysis of variance (MANOVA).

[f] Some employment related activity, i.e. temporary, part-time, unpaid, paid, casual or full-time employment or enrolment in part or full-time study.

[g] Although the Spera *et al.* (1994) study had three arms ($n = 63$) only two of the arms (Writing and No writing $n = 41$) were allocated at random. While we are reporting only from these two study arms for the ANOVA analyses include all three arms. For this analysis only data from 40 participants were available.

[h] ANOVA across all three intervention arms shows there are significant variation in number employed ($F_{2,59} = 3.72$ $p = 0.03$).

[i] ORM Ordinal regression model was fitted across the five categories (much better, better, the same, worse, and much worse) and there were no differences between categories by intervention type. When the data were looked at for each category, only one was significant, the people who had the intervention were more likely to score their perception of debt as 'better' Wald text $\chi^2 = 5.92$, $p = 0.015$.

interventions considered to date, providing pointers to what works best to inform future research in this field.

The main limitation is the relatively sparse literature in this field. The only intervention evaluated in large trials in different settings was the 'job club' intervention and results for these trials are not presented in such a way as to enable meta-analysis. Thus identifying what works for whom and when was not possible from this data set. There is some evidence from a systematic review that included non-randomized studies that job-search interventions only appeared to improve employment if they included components that developed skills and enhanced motivation, although mediating effects on mental health were not investigated (Liu *et al.* 2014). In JOBS II there was some evidence that the intervention had the greatest effects on mental health among those individuals with low levels of mastery (a composite measure based on self-esteem, self-efficacy and locus of control measures) at baseline, but such effects have not been investigated systematically (Vinokur *et al.* 2000). Suicide (incidence 11.4/1 00 000) and attempted suicide (4/1000), possibly the most severe effect of economic hardship, are thankfully relatively rare (WHO, 2014, 2016); reported trials are underpowered to detect any effect on these indicators and were not evaluated in the studies we reviewed. Our focus was on trials evaluating mental health, the key risk factor for suicide and we assumed that interventions having an impact on mental health will in turn influence suicide attempts and suicide. The studies we identified used a range of outcome measures (GHQ-12, GHQ-30, SF-36, GDS, PSSS, Beck Hopelessness scale, POMS, CIDI, CES-D HSCL-90, STAI) designed to measure different aspects of mental health and ranging from disorder specific scales (e.g. CES-D) to screens for common mental disorder (GHQ-12). We excluded 20 reports of RCTs because they did not report any measures for mental health and we would recommend that any future trialists investigating interventions for debt and unemployment collect and publish such outcomes.

A priori we decided not to review the literature on specific groups, e.g. people with severe mental illness and single mothers, although some of the included trials did focus on population subgroups [e.g. unemployed professionals (Proudfoot *et al.* 1997), long-term unemployed living in deprived areas (Harris *et al.* 2002)]. Literature in this area is rather old and largely focused on the unemployed/job loss. The one trial of debt advice had to be stopped early because of high levels of loss to follow-up (Pleasence & Balmer, 2007; Pleasence, 2008).

Findings in the context of the wider literature

The focus of our review has been on the relatively few RCTs in this field. Conducting trials in the context of

economic recession is challenging as the rapid rises in job loss and debt require timely policy responses. Timescales for obtaining research funding to conduct RCTs, and time delays in obtaining research ethics approval (Salman *et al.* 2014), means that by the time a trial is funded the most acute period of economic difficulty may have passed. Three previous systematic reviews have all remarked upon the absence of evidence of health benefits for public health interventions for people on low income. One found 10 RCTs on income supplementation by searching medical and sociological literature but none had measured any aspect of health (Connor *et al.* 1999). A broader search including grey literature for welfare advice delivered in a healthcare setting found 55 studies (one RCT) and concluded that income was improved but could not comment on health (Adams *et al.* 2006). A third searched medical literature for vocational interventions for unemployed and found weak evidence of no effect on mental health (Audhoe *et al.* 2010).

Several observational studies have investigated the impact of different policy responses to periods of recession and provide additional pointers to effective interventions. Stuckler *et al.*'s analysis of the association of changes in unemployment with changes in suicide mortality in 26 European Union countries between 1970 and 2007 indicates that government spending on active labour market programmes mitigated the effect rises in unemployment on suicide (Stuckler *et al.* 2009). Components of active labour market programmes include classroom or on the job training, job search assistance or sanctions for failing to search, subsidized private sector employment and subsidized public sector employment. Notably, some elements of these programmes were included in the 'job club' (interventions described above) (Caplan *et al.* 1989; Vinokur *et al.* 1991*a*, *b*, 1995*a*; Price *et al.* 1992; Vanryn & Vinokur, 1992).

Two recent ecological studies conducted during the 2008 recession provide evidence of the beneficial effects of providing generous welfare benefits to people who are out of work. An analysis of US state-level suicide data showed that states providing more generous unemployment benefits experienced lower recession-related rises in suicide than those providing less generous welfare support (Cylus *et al.* 2014). In an ecological analysis of data from 30 countries, there was a graded association between a country's spending on unemployment protection and the effect of unemployment rises on suicide (Norström & Grönqvist, 2014).

Future research agenda

Whilst some authors did report their RCTs with reference to CONSORT guidelines (Pleasence & Balmer,

2007; Schultz *et al.* 2010) we would urge authors of future studies to follow this lead to allow accurate assessments of risk-of bias and clarity of analysis and treatment effects (Turner *et al.* 2012). Some trials had low recruitment rates and, given the likely financial difficulties faced by research participants in this field, trialists could attempt to increase participation by providing incentives or compensation for participants' time, as five of the 11 studies in this review did (see Supplementary Appendix 3).

Recent research into suicides occurring during a period of recession indicated that those whose suicide appeared to be related to consequences of recession were largely still in work, cohabiting, with financial dependents but had no contact with secondary-care psychiatric and little recent contact with primary-care services (Coope *et al.* 2015). This indicates the need for research into how best to (*a*) identify those at risk of adverse mental health outcomes during recession, and (*b*) intervene to reduce risk among those not in contact with services. In the UK's recent recession, policy responses included training front-line job centre and debt collection staff (Fitch & Davey, 2010; Domokos, 2011). Evaluation of these and similar interventions would inform responses to future recessions. From a healthcare perspective, pragmatic trials in primary care such as the DeCoDer trial will provide useful additional evidence for primary care type interventions to address economic hardship and depression and anxiety (DECODER, 2014). In addition the impact of training primary-care and specialist mental health staff in appraising financial difficulties and signposting them to appropriate statutory and voluntary sector organizations may be worthwhile and form the basis of future evaluative research (Adams *et al.* 2006; Harris & Harris, 2009; Barnes *et al.* 2016). Future RCTs could usefully include measures to help identify what intervention works for whom and why. They might specifically build on work by studies in this review and measure mediating effects e.g. self-efficacy, debt management skills etc. Stratification to create *a priori* subgroups of participants would help identify which groups were benefitting or not from the intervention. Other potential subgroups could include age, socioeconomic position, or gender. Nested qualitative research could be used to identify potential barriers and facilitators to intervention uptake and adherence among participants and be useful in helping to identify time critical aspects of the intervention, e.g. were participants successful at gaining employment, managing debt, etc. because their mood lifted or vice versa? Researchers could try to publish across both socio-legal and medical disciplines and future systematic reviews should search both literature sources.

Conclusions

There is reasonably consistent evidence from large RCTs that short, 1- to 2-week 'job club' interventions can reduce depressive symptoms in high-risk, unemployed people up to 2 years. Evidence for CBT is mixed and for other interventions it is limited. Further high-quality RCTs are urgently needed. Such trials might usefully focus on interventions to help individuals with financial difficulties and debt, as most of the literature to date as focussed on provision of help to the unemployed, although the two issues are closely inter-related.

Supplementary material

The supplementary material for this article can be found at https://doi.org/10.1017/S0033291716002944.

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Declaration of Interest

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