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. 1995b) 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. 1995b) 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. 2015a). 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. 1995b) to 58 (Rife, 1992) years and gender balance varied from 13% male (Hodzic et al. 2015a) 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. 1995b; Vuori et al. 2002). Two studies, JOBS I and JOBS II reported supervision for their staff (Vinokur et al. 1995a, 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. 1995b; 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. 1995b; 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. 1991a, b, 1995a; 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. 1995b, 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. 1995b) at baseline. Vuori et al. (2002) adapted the JOBS II intervention for use in Finland.
(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. 1991a, b, 1995a; Vanryn & Vinokur, 1992).
<table>
<thead>
<tr>
<th>Study ID, country, design, no. of arms, no. of participants</th>
<th>Population age and gender and ethnicity</th>
<th>Intervention type</th>
<th>Referral pathway and inclusion criteria</th>
<th>Control</th>
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<tr>
<td>JOBS I (Caplan et al. 1989; Vinokur et al. 1991a, b; Price et al. 1992; vanryn &amp; Vinokur, 1992; Vinokur et al. 1995a, b) USA RCT 2 arms N = 1122 randomized, 83% completed baseline, 88% at 6 weeks and 80% at 4 months</td>
<td>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</td>
<td>‘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 &amp; Philip, 1979) Delivered to: people in groups of 16–20 participants Duration and frequency: eight 3 h sessions over 2 weeks</td>
<td>From four state recruitment compensation offices in SW Michigan</td>
<td>Written material. 25 page booklet on Job skills and job searching</td>
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<tr>
<td>JOBS II (Vinokur et al. 1995a, b; Vinokur et al. 1996; Vinokur &amp; Schul, 1997; Vinokur et al. 2000) USA RCT 2 arms N = 1771 completed baseline. 1801 randomized, 80% at T2; 87% at T3</td>
<td>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</td>
<td>‘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</td>
<td>From four state recruitment compensation offices in South West Michigan</td>
<td>Written, self-administered, job search materials and pamphlet. 25 page booklet on Job skills and job searching</td>
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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

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<tr>
<th>Study</th>
<th>Country</th>
<th>Intervention</th>
<th>Participants</th>
<th>Duration of unemployment</th>
<th>Age</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Baseline mental health</th>
<th>Delivery methods</th>
<th>Written materials</th>
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<tr>
<td>Työhön (Vuori et al. 2002; Vuori &amp; Vinokur, 2005)</td>
<td>Finland</td>
<td>'Job club': Työhön 'let's get to work' Job Search Program. Based on JOBS I</td>
<td>Unemployed: 100%</td>
<td>Duration of unemployment: median 5 months (mean = 10.7, s.d. = 17.3), 28% unemployed for 12 months or longer</td>
<td>Mean = 37 (18–61 years)</td>
<td>Gender: 22% male</td>
<td>Ethnicity: not reported</td>
<td>Baseline mental health: not reported</td>
<td>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</td>
<td>Written job search materials</td>
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<th>Participants</th>
<th>Duration of unemployment</th>
<th>Age</th>
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<th>Baseline mental health</th>
<th>Delivery methods</th>
<th>Written materials</th>
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<tr>
<td>JOBS skills training seminars to improve job seeking</td>
<td>USA (Rife, 1992; Rife &amp; Belcher, 1994)</td>
<td>'Job club': JOBS skills training seminars to improve job seeking</td>
<td>Unemployed: 100%. Duration of unemployment not described</td>
<td>Age: mean 58 years (range not provided)</td>
<td>Gender: 56% male</td>
<td>Ethnicity: 94% white</td>
<td>Baseline mental health: mean Geriatric Depression Scale (GDS) intervention 6.6 control 6.2. Participants were reported to be 'mildly depressed'</td>
<td>By post, phone and direct contact from four employment assistance services with the community agency</td>
<td>People who had applied for employment assistance services with the community agency</td>
<td>Usual service: State Government Job Service and community referral programme, e.g. employment registration, information and referral</td>
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Interventions to reduce the impact of unemployment and economic hardship on mental health.
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<th>Study ID, country, design, no. of arms, no. of participants</th>
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<tr>
<td>(Gustafson, 1995) USA RCT 2 arms N=16 100% completed</td>
<td>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)</td>
<td>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</td>
<td>Recruitment from Saddleback college career centre offices, California</td>
<td>Written, self-administered, job search materials and pamphlet</td>
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<td>(Proudfoot et al., 1997, 1999) UK RCT 2 arms N=289 randomized</td>
<td>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</td>
<td>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</td>
<td>Newspaper adverts, mail shots, the UK Employment service, employment/recruitment organization</td>
<td>Social support programme, same format as CBT and included weekly homework</td>
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<td>Interventions to reduce the impact of unemployment and economic hardship on mental health</td>
<td>Participants to use what they had learned in the future</td>
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<tr>
<td>GHQ-30</td>
<td>54% scored of 5 or more</td>
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<td>(psychiatric caseness)</td>
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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 (SD = 40.0)

Other: long-term unemployed from disadvantaged areas of Sydney. 51% left school before completing higher-level qualifications

Baseline mental health

Intervention SF-36 Mental Component Scale 41.03 (SD = 15.13), control 45.63 (12.35)

Baseline mental health: not reported

Gender: 55% male

Ethnicity: not reported

Age: 34 years (range not provided)

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

Debt advice: telephone call from trained advisors from National Debtline

Duration and frequency: one-off telephone call

Debt advice: telephone call

Researchers approached people in job centres

No intervention. Usual Job Centre service

CBT Group CBT

Baseline mental health

Intervention SF-36 Mental Component Scale 41.03 (SD = 15.13), control 45.63 (12.35)

Duration and frequency: One-off telephone call

Two-day Senior First Aid certificate

Two-day Senior First Aid Certificate - fundamental principles/knowledge/skills of First Aid

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. 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

Two-day Senior First Aid certificate

Two-day Senior First Aid Certificate - fundamental principles/knowledge/skills of First Aid

Duration and frequency: two days (11 h total)
Table 1 (cont.)

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<thead>
<tr>
<th>Study ID, country, design, no. of arms, no. of participants</th>
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<tbody>
<tr>
<td>(Spera et al. 1994) USA RCT 3 arms* N = 63 (in three arm, 41 participants discounting the non-randomized intervention arm)</td>
<td>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</td>
<td>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</td>
<td>Professionals recruited from outplacement firms</td>
<td>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</td>
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<td>(Joseph, 1999; Joseph &amp; Greenberg, 2001) USA RCT 2 arms N = 76 randomized.</td>
<td>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</td>
<td>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</td>
<td>Professionals recruited from outplacement firms</td>
<td>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</td>
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<td>(Hodzic et al. 2015a, b) Spain RCT 2 arms</td>
<td>Unemployed: 100% Duration of unemployment: mean unemployment duration 16.9 months.</td>
<td>Emotional competences training: based on Kotsou et al. (2011) Group work to identify and understand emotions of the self and other, using</td>
<td>Unemployed from unemployment agencies Inclusion criteria. (a) being unemployed, (b) motivated about the intervention process, (c) no prior knowledge about the</td>
<td>No intervention</td>
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<td>N = 78, randomized</td>
<td>Age: intervention mean age 32.68 (S.D.=10.34), control mean age 36.4 (S.D.=12.02)</td>
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<tr>
<td>Gender: 13% male</td>
<td>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</td>
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<td>Ethnicity: not reported</td>
<td>Duration and frequency: 3 days (5 h per day). Day one and 2 were consecutive. Two weeks gap between day 2 and day 3</td>
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<td>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)</td>
<td>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</td>
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<td>Mood depression mean = 1.83 (S.D. = 0.87), control mean = 1.70 (S.D. = 0.58)</td>
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</table>

* 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.
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. 1995b, 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. 1995b).

**CBT interventions**

Two studies assessed the effect of group CBT on long-term unemployed individuals. The intervention content...
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% vs. 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) (Pleasence & 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 (Pleasence & Balmer, 2007). One study (n = 41) provided unemployed

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**Table 1:** 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; *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; 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; *stopped early high drop out; *difference in baseline of people exposed to relaxation techniques. CBT, Cognitive behavioural therapy.
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. 2015a).

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. 2015a) 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. 1995b; Harris et al. 2002; Vuori et al. 2002) and three included an assessment of fidelity to treatment (Caplan et al. 1989; Vinokur et al. 1995b; 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. 1995b; 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. 1991b; 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>
<thead>
<tr>
<th>Intervention type</th>
<th>Outcome</th>
<th>Outcome scale</th>
<th>Study</th>
<th>n (Time point (sample))</th>
<th>Intervention Mean (S.D.)</th>
<th>Control Mean (S.D.)</th>
<th>Published analysis by trial authors</th>
<th>Calculation of difference in means, or risk difference, using available published summary data from studies(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job club</td>
<td>Anxiety</td>
<td>Subscale of HSCL-90</td>
<td>JOBS I</td>
<td>630 6 weeks (all)</td>
<td>1.87 (-)</td>
<td>1.88 (-)</td>
<td>ES = −0.03, ( t = 0.36(630df), p = 0.718 )</td>
<td>MD = −0.01 (not calculable)</td>
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<tr>
<td></td>
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<td></td>
<td>623 4 months (all)</td>
<td>1.89 (-)</td>
<td>1.86 (-)</td>
<td>ES = 0.04, ( t = 0.45(623df), p = 0.652 )</td>
<td>MD = −0.03 (not calculable)</td>
</tr>
<tr>
<td></td>
<td>STAI</td>
<td>Gustafson 1995</td>
<td>16</td>
<td>6 weeks</td>
<td>43.7 (14.9)</td>
<td>38.0 (6.9)</td>
<td>( \chi^2 ) ( p &gt; 0.05 )</td>
<td>MD 5.70 (−5.68 to 17.08)</td>
</tr>
<tr>
<td></td>
<td>Trait</td>
<td></td>
<td>16</td>
<td>6 weeks</td>
<td>41.7 (10.7)</td>
<td>44.6 (7.3)</td>
<td>( \chi^2 ) ( p &gt; 0.05 )</td>
<td>MD = −2.90 (−11.88 to 6.08)</td>
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<tr>
<td>Depression</td>
<td>HSCL-90</td>
<td>JOBS I</td>
<td>630</td>
<td>6 weeks (all)</td>
<td>1.84 (-)</td>
<td>1.91 (-)</td>
<td>ES = −0.01, ( t = −1.12(630df), p = 0.263 ) ( ns )</td>
<td>MD = −0.07 (not estimable)</td>
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<tr>
<td></td>
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<td></td>
<td>522 4 months (low)(^c)</td>
<td>1.67 (0.50)</td>
<td>1.60 (0.51)</td>
<td>Interaction ( F = 6.07, p = 0.01^d )</td>
<td>MD 0.07 (−0.02 to 0.16)</td>
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<td>179 4 months (high)(^c)</td>
<td>2.21 (0.73)</td>
<td>2.47 (0.70)</td>
<td>Interaction ( F = 12.14, p = 0.001^d )</td>
<td>MD −0.26 (−0.48 to −0.04)</td>
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<tr>
<td></td>
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<td></td>
<td>623 4 months (all)</td>
<td>1.84 (-)</td>
<td>1.92 (-)</td>
<td>( p = 0.194 ) ( ns )</td>
<td>MD = −0.08 (not estimable)</td>
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<td>695 4 months (all)</td>
<td>1.72 (0.63)</td>
<td>1.84 (0.69)</td>
<td>Interaction ( F = 6.05, p = 0.01^d )</td>
<td>MD = −0.13 (−0.24 to −0.02)</td>
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<td></td>
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<td>511 4 months (low)(^c)</td>
<td>1.59 (0.55)</td>
<td>1.63 (0.52)</td>
<td>Interaction ( F = 12.14, p = 0.001^d )</td>
<td>MD = −0.04 (−0.14 to 0.06)</td>
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<td>184 4 months (high)(^c)</td>
<td>2.08 (0.72)</td>
<td>2.44 (0.78)</td>
<td>Interaction ( F = 6.05, p = 0.01^d )</td>
<td>MD = −0.36 (−0.59 to −0.13)</td>
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<td>456 28 months (low)(^c)</td>
<td>1.55 (0.53)</td>
<td>1.61 (0.56)</td>
<td>Interaction ( F = 6.05, p = 0.01^d )</td>
<td>MD = −0.06 (−0.17 to 0.05)</td>
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<td></td>
<td>157 28 months (high)(^c)</td>
<td>1.95 (0.73)</td>
<td>2.20 (0.77)</td>
<td>( \beta ) ( LR = −0.06, p &lt; 0.05 )</td>
<td>MD −0.25 (−0.50 to 0.00)</td>
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<tr>
<td></td>
<td></td>
<td>JOBS II</td>
<td>157</td>
<td>28 months (high)(^c)</td>
<td>1.95 (0.73)</td>
<td>2.20 (0.77)</td>
<td>( \beta ) ( LR = −0.06, p &lt; 0.05 )</td>
<td>MD −0.25 (−0.50 to 0.00)</td>
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<td>742 2–6 months (low)(^c)</td>
<td>–</td>
<td>–</td>
<td>( \beta ) ( LR = −0.04, p &lt; 0.05 )</td>
<td>MD −0.25 (−0.50 to 0.00)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>470 2–6 months (high)(^c)</td>
<td>–</td>
<td>–</td>
<td>( \beta ) Log R = −0.49, ( p &lt; 0.05 ) (OR = 0.612)</td>
<td>MD −0.25 (−0.50 to 0.00)</td>
</tr>
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</table>

\(^a\) Interaction

\(^c\) Interaction

\(^d\) Interaction
Table 2 (cont.)

<table>
<thead>
<tr>
<th>Intervention type</th>
<th>Outcome</th>
<th>Outcome scale</th>
<th>Study</th>
<th>n (sample)</th>
<th>Time point</th>
<th>Mean (s.d.)</th>
<th>n</th>
<th>Mean (s.d.)</th>
<th>n</th>
<th>Published analysis by trial authors</th>
<th>Calculation of difference in means, or risk difference, using available published summary data from studies(^a,b)</th>
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<td>Intervention</td>
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<td>Control</td>
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<tr>
<td>CBT</td>
<td>Psychiatric caseness</td>
<td>Score &gt;5 on GHQ-30</td>
<td>Proudfoot 1997</td>
<td>209</td>
<td>7 weeks</td>
<td>3.72 (5.81)</td>
<td>112</td>
<td>5.16 (7.01)</td>
<td>97</td>
<td>F = 3.91, p &lt; 0.05(^c)</td>
<td>MD = −1.44 (−3.20 to 0.32)</td>
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<td></td>
<td>Psychological symptoms</td>
<td>GHQ-30</td>
<td></td>
<td>209</td>
<td>7 weeks</td>
<td>3.72 (5.81)</td>
<td>112</td>
<td>5.16 (7.01)</td>
<td>97</td>
<td>F = 3.91, p &lt; 0.05(^c)</td>
<td>MD = −1.44 (−3.20 to 0.32)</td>
</tr>
<tr>
<td></td>
<td>Mood</td>
<td>SF-36 MCS</td>
<td>Harris 2002</td>
<td>183</td>
<td>3 months</td>
<td>4.92 (7.21)</td>
<td>94</td>
<td>6.58 (8.14)</td>
<td>89</td>
<td>F = 3.85, p &lt; 0.05(^c)</td>
<td>MD = −1.66 (−3.89 to 0.57)</td>
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<td>BHS</td>
<td>Harris 2002</td>
<td>195</td>
<td>3–4 months</td>
<td>44.14 (12.19)</td>
<td>57</td>
<td>46.31 (12.78)</td>
<td>43</td>
<td>t test ns(^b)</td>
<td>MD = −2.17 (−7.13 to 2.79)</td>
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<td>LSS Opt</td>
<td>Harris 2002</td>
<td>3–4 months</td>
<td>5.11 (4.27)</td>
<td>57</td>
<td>3.07 (2.73)</td>
<td>43</td>
<td>F(_1, 97) = 7.26, p = 0.01(^b)</td>
<td>MD = 2.04 (0.66 to 3.42)</td>
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<td>3–4 months</td>
<td>13.54 (4.09)</td>
<td>57</td>
<td>16.14 (3.34)</td>
<td>43</td>
<td>F(_1, 97) = 7.26, p = 0.01(^b)</td>
<td>MD = 2.04 (0.66 to 3.42)</td>
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<tr>
<td>Debt advice</td>
<td>Anxiety</td>
<td>STAI-6</td>
<td>Pleasence 2007</td>
<td>402(^d)</td>
<td>0–5 months</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>MVV ES = −2.43, S.E. = 2.73</td>
<td>ns</td>
</tr>
<tr>
<td>Emotional competence training</td>
<td>Mental health</td>
<td>GHQ-12</td>
<td>Hodzic 2015</td>
<td>75</td>
<td>1 months</td>
<td>2.18 (0.59)</td>
<td>41</td>
<td>2.48 (0.60)</td>
<td>34</td>
<td>MD = −0.30 (−0.57 to 0.03)</td>
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<td></td>
<td></td>
<td>6 months</td>
<td>2.20 (0.53)</td>
<td>38</td>
<td>2.38 (0.53)</td>
<td>26</td>
<td>MD = 0.18 (−0.44 to 0.08)</td>
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<tr>
<td></td>
<td>Stress</td>
<td>PSSS</td>
<td></td>
<td>75</td>
<td>1 months</td>
<td>2.73 (0.66)</td>
<td>41</td>
<td>2.69 (0.66)</td>
<td>34</td>
<td>MD = 0.04 (−0.26 to 0.34)</td>
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<td></td>
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<td></td>
<td></td>
<td>6 months</td>
<td>2.61 (0.60)</td>
<td>38</td>
<td>2.69 (0.56)</td>
<td>26</td>
<td>MD = 0.08 (−0.37 to 0.21)</td>
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<tr>
<td></td>
<td>Anxiety</td>
<td>POMS</td>
<td></td>
<td>75</td>
<td>1 months</td>
<td>2.63 (0.92)</td>
<td>41</td>
<td>2.73 (0.98)</td>
<td>34</td>
<td>MD = −0.10 (0.53 to 0.33)</td>
<td></td>
</tr>
</tbody>
</table>
64 6 months 2.64 (1.02) 38 2.76 (0.86) 26 MD 0.12 (−0.58 to 0.34)
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)

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)

Depression CES-D Joseph 2001 52 2 weeks 10.67 (10.63) 26 12.92 (11.02) 26 MD 0.00 (−0.37 to 0.37)
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 52 2 months 8.71 (8.86) 26 12.48 (12.26) 26 ANOVA result as above MD −3.77 (not estimable)
41 3 and 8 month – – 26 12.48 (12.26) 26 ANOVA result as above MD −3.77 (not estimable)

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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 ≤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 Työähon 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 Ministers’ Health Questionnaire (Watson & Pennebaker, 1989); STAI, State 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); Työähon; 6 month data (Vuori et al. 2002); 24 month data (Vuori & Silvonen, 2005): Pleasance 2007; 0-5 month (Pleasance & Balmer, 2007); Proudfoot 1997; 7 week data (Proudfoot et al. 1999, Proudfoot et al. 1997); Spera 1994 (Spera et al. 1994).


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 ≥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 χ² 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.

l 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.

m ANCOVA (analysis of covariance) with pre-test scores as covariates. 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 ≤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 Työähon 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 Ministers’ Health Questionnaire (Watson & Pennebaker, 1989); STAI, State 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); Työähon; 6 month data (Vuori et al. 2002); 24 month data (Vuori & Silvonen, 2005): Pleasance 2007; 0-5 month (Pleasance & Balmer, 2007); Proudfoot 1997; 7 week data (Proudfoot et al. 1999, Proudfoot et al. 1997); Spera 1994 (Spera et al. 1994).
Table 3. Employment, debt and debt awareness outcomes by intervention type

<table>
<thead>
<tr>
<th>Intervention type</th>
<th>Study Year</th>
<th>Outcome</th>
<th>Time point</th>
<th>n</th>
<th>Intervention %</th>
<th>Control %</th>
<th>Statistical evidence for differences</th>
<th>Calculation of difference in means, or risk difference, using available published summary data from studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job club</td>
<td>JOBS I</td>
<td>Employment</td>
<td>6 weeks</td>
<td>563</td>
<td>33</td>
<td>26</td>
<td>t test nsd</td>
<td>RD 0.07 (0.00–0.14)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 months</td>
<td>499</td>
<td>60</td>
<td>51</td>
<td>t test nsd</td>
<td>RD 0.08 (−0.00 to 0.16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28 months</td>
<td>71.2</td>
<td>68.3</td>
<td></td>
<td>MANOVA F = 1.25 ns^e</td>
<td>Not estimable</td>
</tr>
<tr>
<td></td>
<td>Gustafson 1995</td>
<td>Employment</td>
<td>6 weeks</td>
<td>16</td>
<td>63</td>
<td>50</td>
<td>$\chi^2 p &gt; 0.05$</td>
<td>RD −0.13 (−0.61 to 0.36)</td>
</tr>
<tr>
<td></td>
<td>JOBS II</td>
<td>Employment</td>
<td>2 months</td>
<td>34</td>
<td>27</td>
<td></td>
<td>Wald’s $\chi^2 = 4.44, p &gt; 0.05$</td>
<td>RD 0.07 (not estimable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 months</td>
<td>35</td>
<td>29</td>
<td></td>
<td>Wald’s $\chi^2 = 5.79, p &gt; 0.05$</td>
<td>RD 0.06 (not estimable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 months</td>
<td>63</td>
<td>67</td>
<td></td>
<td>Wald’s $\chi^2 = 4.13, p &lt; 0.05$</td>
<td>RD 0.04 (not estimable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 months</td>
<td>62</td>
<td>54</td>
<td></td>
<td>Wald’s $\chi^2 = 4.55, p &lt; 0.05$</td>
<td>RD 0.08 (not estimable)</td>
</tr>
<tr>
<td></td>
<td>Rife 1992</td>
<td>Employment</td>
<td>12 weeks</td>
<td>52</td>
<td>65</td>
<td>26</td>
<td>$\chi^2 (1) = 7.73, p &lt; 0.01$</td>
<td>RD 0.38 (0.13–0.63)</td>
</tr>
<tr>
<td></td>
<td>Työhön</td>
<td>Employment</td>
<td>6 months</td>
<td>1261</td>
<td>34</td>
<td>31.9</td>
<td>ns</td>
<td>RD 0.02 (−0.04–0.08)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24 months</td>
<td>1112</td>
<td>54.1</td>
<td>49.5</td>
<td>$\chi^2 = 2.41 ns$</td>
<td>RD 0.05 (−0.02 to 0.11)</td>
</tr>
<tr>
<td></td>
<td>CBT</td>
<td>Employment</td>
<td>4 months</td>
<td>209</td>
<td>34</td>
<td>13</td>
<td>$\chi^2 p = 0.0006$</td>
<td>RD 0.21 (0.09 to 0.32)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FT PT temp</td>
<td>209</td>
<td>49</td>
<td>28</td>
<td>$\chi^2 p = 0.0016$</td>
<td>RD 0.21 (0.08–0.34)</td>
</tr>
<tr>
<td></td>
<td>Harris 2002</td>
<td>Employment activity</td>
<td>3–4 months</td>
<td>100</td>
<td>–</td>
<td>–</td>
<td>$\chi^2 = 0.27, p = 0.35$</td>
<td>Not estimable</td>
</tr>
<tr>
<td></td>
<td>Joseph 2001</td>
<td>Employment</td>
<td>2 months</td>
<td>52</td>
<td>62</td>
<td>11</td>
<td>$\chi^2 = 14.02, p &lt; 0.001$</td>
<td>RD 0.50 (0.28–0.72)</td>
</tr>
<tr>
<td></td>
<td>Expressive writing</td>
<td>Spera 1994</td>
<td>3 months</td>
<td>41^a</td>
<td>25</td>
<td>0</td>
<td>$\chi^2 = 0.21.0, p &gt; 0.04$; ANOVA F_2,59= 3.72, p = 0.03^f</td>
<td>RD 0.25 (0.05–0.45)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 months</td>
<td>41^a</td>
<td>52.6</td>
<td>23.8</td>
<td>–</td>
<td>RD 0.29 (−0.00 to 0.58)</td>
</tr>
<tr>
<td></td>
<td>Emotional competence training</td>
<td>Hodzic 2015</td>
<td>6 months</td>
<td>63</td>
<td>21.2% (7)</td>
<td>10% (3)</td>
<td>$\chi^2 = 1.48, p = 0.22$</td>
<td>RD 0.11 (−0.06 to 0.29)</td>
</tr>
<tr>
<td></td>
<td>Debt advice</td>
<td>Pleasance 2007</td>
<td>12 months</td>
<td>63</td>
<td>36.4% (12)</td>
<td>10% (3)</td>
<td>$\chi^2 = 6.02, p = 0.01$</td>
<td>RD 0.26 (0.07–0.46)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Facing a debt problem</td>
<td>0–5 months</td>
<td>234</td>
<td>35</td>
<td>37</td>
<td>$\chi^2 = 0.22, p = 0.64$</td>
<td>RD 0.92 (0.65–1.30)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perceived changes in financial circumstances 'better'</td>
<td>5 months</td>
<td>234</td>
<td>42</td>
<td>30.1</td>
<td>ORM estimate intervention = 0.23, s.e. = 0.24, p = 0.34^f</td>
<td>RD 0.12 (not estimable)</td>
</tr>
<tr>
<td>Perceived changes in financial circumstances ‘the same’</td>
<td>5 months</td>
<td>234</td>
<td>17.6</td>
<td>24.8</td>
<td>$\chi^2 = 5.92$, $p = 0.015$</td>
<td>RD 0.07 (not estimable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>See a future without debt</td>
<td>5 months</td>
<td>234</td>
<td>–</td>
<td>–</td>
<td>BLRA estimate intervention = 0.32, s.e. = 0.33 ns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of debt problems</td>
<td>5 months</td>
<td>234</td>
<td>–</td>
<td>–</td>
<td>NRM intervention = 0.56, s.e. = 0.30, Wald test $\chi^2 = 3.47$, $p = 0.06$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of debts</td>
<td>5 months</td>
<td>234</td>
<td>2.29</td>
<td>2.16</td>
<td>Poisson model $-0.03$, s.e. = 0.10 ns</td>
<td>MD 0.13 (not estimable)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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; FT, 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. 2015a); JOBS I; 6 week, 4 month data (Vinokur et al. 1991b), 28 month data (Vinokur et al. 1991b); JOBS II 2 month and 6 month data (Vinokur et al. 1995); 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).

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 ($F_{2,39} = 3.72$, $p = 0.03$).
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 test $\chi^2 = 5.92$, $p = 0.015$. 

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. 1991a, b, 1995a; 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,
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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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