



# Mental health promoting Interventions for the unemployed: a systematic review of applied techniques and effectiveness

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## ABSTRACT

Unemployment is associated with a diminished mental health. Interventions to improve mental health for the unemployed exist. However, there is no clear overview with respect to the content and effectiveness of these interventions. A systematic search was conducted and, included studies that targeted unemployed adults, described an intervention and reported mental health as an outcome measure. After screening, 24 studies remained, which contained 21 different interventions. These interventions could be classified into three categories: occupational skills training interventions, psychological interventions and combined interventions. The majority of the studies reported significant short-term effects on mental health, but in most cases evidence of sustained effects was lacking or not assessed. There is promising evidence that interventions combining occupational skills and resilience training are effective in promoting mental health. However, there is a need for high-quality research on the intervention effects on the mental health of the (long-term) unemployed.

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## Introduction

In Europe, unemployment rates have significantly increased from 2000 (9.1%) to 2015 (11.2%). Though unemployment rates made a downward movement from 11.8% in 2014 to 11.2% in 2015, there are still 23.8 million unemployed individuals in Europe (Eurostat, 2015). Unemployment has profound individual and societal implications. For unemployed individuals, mental health may be affected due to a decrease in self-esteem, life satisfaction and perceived competence (Brenner & Levi, 1987; Folke, Parling, & Melin, 2012; Kessler, House, & Turner, 1987; Martin, Keswick, & LeVeck, 2010; van Ryn & Vinokur, 1992; Vuori & Vinokur, 2005). Unemployment has also been related to psychological morbidity such as clinical depression (Price, van Ryn, & Vinokur, 1992) and even increased rates of suicide and suicide attempts (Brenner & Levi, 1987; Folke et al., 2012; Kessler et al., 1987; Martin et al., 2010; van Ryn & Vinokur, 1992; Vuori & Vinokur, 2005). Individuals who lost their job due to pre-existing poor (mental) health are particularly vulnerable, as their unemployment increases the risk

of acquiring additional (mental) health problems with 43%, compared to other unemployed individuals (Paul & Moser, 2009; Wanberg, 2012). Additionally, unemployment also has considerable social effects. It has been shown to be associated with deteriorating (family) relationships including separation, divorce, child neglect and spousal abuse (Brenner & Levi, 1987; Folke et al., 2012; Kessler et al., 1987; Martin et al., 2010; van Ryn & Vinokur, 1992; Vuori & Vinokur, 2005). And unemployment may also lead to increased alcohol abuse and criminal behaviour (Bodem, Fergusson, & Horwood, 2013; Catalano, Dooley, Wilson, & Hough, 1993; Vuori & Vinokur, 2005).

As re-employment is the most direct route to prevent the adverse consequences of unemployment, the majority of available interventions for the unemployed have focused on enhancing re-employment (Paul & Moser, 2009). Although such occupational interventions have shown positive effects on mental health and well-being (e.g. Caplan, Vinokur, Price, & Van Ryn, 1989; Price et al., 1992; Wanberg, 2012), adding components specifically aimed at improving resilience and mental health could have additional benefits. First, evidence suggests that psychological problems reduce the chance of reemployment (Hanisch, 1999) and therefore improved mental health could enhance re-employment speed (Wanberg, 2012). Second, as not all participants will eventually succeed in finding or retaining re-employment, these individuals may need other resources to maintain their mental health and quality of life. Promoting mental health by teaching resilience skills to cope successfully with long-term unemployment is warranted. In the past decades, several of these interventions have been developed and examined in effectiveness studies. However, it remains unclear which interventions or intervention components are the most promising in enhancing mental health in this population, as an overview of the content and characteristics of the available interventions and their effectiveness is currently lacking. This systematic review addresses this gap by reviewing the content, intensity and theoretical frameworks used in existing interventions and their effects on mental health for the unemployed. In addition, possible moderators of intervention effects were explored, including intervention and population characteristics.

## Method

### Literature search

The literature search aimed to identify all studies containing interventions to promote mental health of unemployed populations. The databases of SCOPUS, Web of Science and PsycINFO were explored to find relevant studies. The search string consisted of three search concepts joined by the Boolean operator AND, each containing a list of synonyms joined by the Boolean operator OR. The following search string was entered in the databases: [1] employment status; *unemploy\**, 'job loss', *jobless*, 'job seek\*', 'return to work', 'job resum\*', 'work resum\*', *reemploy\**, 'job reentry', 'out of work', 'loss of work', [2] intervention; *prevent\**, *intervent\**, 'health promotion', *programme*, [3] well-being; *wellbeing*, *well-being*, *depress\**, 'psycho\* problem\*', *stress*, *helplessness*, 'mental health', *distress*.

### Inclusion and exclusion criteria

Studies were included if they targeted unemployed adults, described an intervention (e.g. health promotion programme) and the (primary) outcome measure contained some

indicator of mental health (e.g. self-esteem, optimism, well-being, helplessness, depression, anxiety). Unemployment is defined in this review, as a state in which an adult of employment age does not have a paying job, despite being available for work.

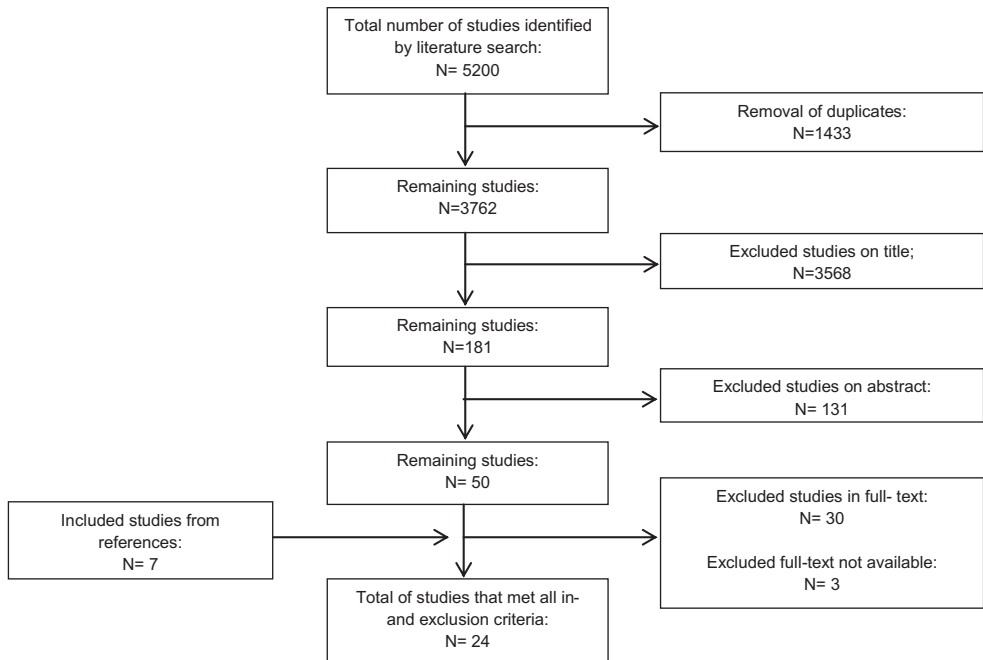
Studies including only youth were excluded, as this population experiences unemployment differently than middle-aged and older adults (Hanisch, 1999; McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Murphy & Athanasou, 1999). They lack the occupational identity that unemployed workers have developed, they are less vulnerable for economic hardship and are usually not a household provider (Hanisch, 1999; McKee-Ryan et al., 2005; Murphy & Athanasou, 1999). Given these differences, it seems likely that including youth would introduce considerable heterogeneity into the review. Second, studies limiting mental health outcomes to self-efficacy expectations only were excluded. The construct of self-efficacy is generally conceived as an underlying cognitive mechanism (Bandura, 1997) contributing to mental health through behavioural processes, and therefore not a primary psychological well-being outcome. However, self-efficacy outcomes were considered in our analyses when included studies reported self-efficacy in addition to well-being outcomes. As a potential mechanism of change, effects on self-efficacy may add knowledge on how intervention components contribute to improved mental health. Third, studies that targeted populations with physical impairments, substance abuse or severe mental illness were also excluded, as these populations need targeted interventions. All publications before 1993 were excluded as past reviews already covered studies before 1993 (e.g. Dooley, Fielding, & Levi, 1996). And finally, we excluded studies with a qualitative study design.

### **Study selection**

A total of 5200 articles were found after entering the search string in the databases (Figure 1). Studies were directly excluded if they were not written in English, were editorials or letters. The studies were then transferred to ENDNOTE and duplicates were removed from the dataset. The remaining articles ( $N = 3767$ ) were first manually screened for relevant titles. All titles were screened by one author, and a random sample of 40% of all titles were screened independently by a second member of the research team. Interrater inconsistencies were discussed until agreement was reached within the research team and if necessary the in- and exclusion criteria were refined. Subsequently, the abstracts of all selected titles ( $N = 181$ ) were screened by two researchers independently: one author screened all abstracts and other members of the research team each screened 50%. Any disagreements were discussed by all three raters until consensus was reached. A total of 131 studies were excluded in this step. The remaining 50 studies were then screened full-text by one author. Also in this stage the references of the studies were screened to find any new studies that met the inclusion criteria. Studies for which the first author could not reach a final decision were screened full-text by a co-author and discussed until consensus was reached. Thirty-three studies were excluded in this step, resulting in 17 included studies and 7 additional studies from the references. All together a total of 24 studies fulfilled all the in- and exclusion criteria.

### **Data extraction**

All data were extracted by one researcher and verified by the other researchers. Disagreements in data extraction between authors were resolved by consensus. Extracted data are presented



**Figure 1.** Flowchart of study selection

into summary tables (Tables 1–3), including intervention characteristics (primary goals, target population, intensity, providers, theoretical methods and techniques) and characteristics of the studies (study design, drop-out and effects on mental health). The Cochrane Collaboration tool to assess the risk of bias in randomized controlled trials (Higgins, Altman, & Sterne, 2011) was used. The risk of bias is described as high (+), low (–) or unclear (?) for five types of bias: (1) selection bias, due to an inadequate generation of a randomized sequence, (2) performance bias, due to systematic differences between groups in the care that is provided, or in the exposure to factors other than the intervention(s) of interest, (3) detection bias, caused by the knowledge of the allocated interventions by outcome assessors, (4) attrition bias, due to the amount, nature or handling of incomplete outcome data and (5) reporting bias, caused to selective outcome reporting. A score of unclear was given when insufficient information was available in the study to determine the risk of each bias. The last row in the summary tables contains these scores for the different types of bias.

### **Description of included studies**

The interventions were categorized into three groups according to the content described in the studies. The first category consists of *occupational skills training interventions (OST, Table 1)*, which contain components such as computer awareness, typing, trade assistance and grooming. The second category consists of *psychological interventions (PI, Table 2)*, containing components derived from behavioural and/or psychological theories further described in the ‘*theoretical methods and techniques*’ section of this review. The third category exists of *combined interventions (CI, Table 3)*, in which components from the former categories are combined.


**Table 1.** Intervention and study characteristics of Occupational Skills interventions (OST).

Author(s) Intervention Primary goal of study <sup>a</sup>	Intervention characteristics			Study characteristics			Risk of Bias <sup>b</sup>
	Target population	Duration (D) Contact time (C) Delivery (De) Provider (P)	Theoretical methods (TM) and techniques	Design Drop-out	Effects on mental health		
1. Andersen (2008) • Government training • Effect on subjective well-being	Unemployment at time of the interview or within the past two years of the study	D: not specified C: not specified De: not specified P: not specified	TM: not specified OST: not specified	Longitudinal design survey from 1991 to 2003 (one-year intervals) Total N = 5319 Drop-out: not specified	Decrease in subjective well-being for those who remained unemployed. Those who gained employment increased subjective well-being	Selection Performance Detection Attrition	?
2. Bruster (2009) • The VIEW Programme • Effect of the VIEW Programme on self-esteem and self-efficacy	African-American welfare women with one child under the age of 16 years	D: not specified C: not specified De: not specified P: not specified	TM: • The ecological theory OST: not specified	Pre-posttest Total N = 101 Drop-out N = 44	No significant effect on self-esteem and job search self-efficacy	Selection Performance Detection Attrition	+
3a. Creed et al. (1998) <sup>c</sup> • Occupational Skills Techniques Interventions/ personal development courses • Immediate and delayed mental health outcomes	Unemployed individuals for ≥ 6 months	D: 4–7 weeks C: 160–280 h De: group P: not specified	TM: not specified OST: • Computer awareness • Typing • Trade assisting • Grooming • Communication • Preparation interviews	Quasi-ED <sup>**</sup> , pre-posttest with a 3-month follow-up Total N = 133 Drop-out N = 42	Intervention effect on depression ( $F = 22.19, p < .001$ ), helplessness ( $F = 14.89, p < .001$ ), psychological distress ( $F = 12.98, p < .001$ ), life satisfaction ( $F = 31.76, p < .001$ ) and self-esteem ( $F = 20.66, p < .001$ ). Effects were maintained at follow-up	Reporting Selection Performance Detection Attrition Reporting	-
3b. Creed et al. (2001) <sup>c</sup> • Occupational Skills Techniques Interventions/ personal development courses • Immediate and long-term well-being and confidence outcomes	Unemployed individuals	D: 4–6 weeks C: 160–240 h De: group P: not specified	TM: not specified OST: • Computer awareness • Typing • Trade assisting • Grooming • Communication • Preparation interviews	Quasi-ED <sup>**</sup> , pre-posttest with a 3-month follow-up Total N = 162 Drop-out at T2 N = 61 Drop-out at T3 N = 114	Intervention effect on self-esteem ( $F = 4.97, p < .05$ ) and on job search self-efficacy ( $F = 14.12, p > .001$ ). No difference between T2 & T3	Selection Performance Detection Attrition Reporting	+
4. Joseph and Greenberg (2001) • Career transition programme vs. placebo • Efficacy of the programme in promoting re-employment and psychological enhancement	Unemployed individuals ≤ 6 months	D: 2 weeks C: 3 h De: group and individual P: psychologist	TM: • Emotional Expression • Theory of Possible Selves OST: not specified	RCT, with a 2-month follow-up Total N = 52 Drop-out N = 19	Intervention effect for self-esteem ( $F = 3.20, p < .05$ ), depression ( $F = 4.62, p < .05$ ) and anger ( $F = 4.73, p < .05$ ). Moderate effect for perceived control ( $F = -2.25, p < .05$ ) and effect of time ( $F = -3.34, p < .01$ ). Effects of time for self-esteem and depression, but interaction effects were not described. Anger increased over time ( $F = 4.45, p < .05$ )	Selection Performance Detection Attrition Reporting	?

(Continued)

**Table 1. (Continued)**

		Intervention characteristics			Study characteristics		
Author(s) Intervention Primary goal of study <sup>a</sup>	Target population	Duration (D) Contact time (C) Delivery (De) Provider (P)	Theoretical methods (TM) and techniques	Design Drop-out	Effects on mental health	Risk of Bias <sup>b</sup>	
5. Matt et al. (2006) • STRIVE programme • Overall impact of the programme on employment and psychological distress	Low-educated unemployed individuals and difficult to employ individuals	D: 3 weeks C: 120 h De: group <sup>c</sup> ; not specified P: not specified	TM: • Self-efficacy • Self-esteem • Locus of control OST <sup>d</sup> : not specified	Pre-posttest, with a 2 to 8-month follow-up Total N = 509 Drop-out at T2 N = 211 Drop-out at T3 N = 435 Cohort, with a 14 years follow-up assessed at 16 – 18 – 21 and 30 years of age. Total cohort N = 1083 Total ALMP N = 662	Self-esteem increased from pre to posttest ( $F = 106.99, p < .001$ ), no change from posttest to follow-up ( $F = 2.1, p = .149$ ). Depression decreased from pre to posttest ( $F = 33.2, p < .001$ ), no change from posttest to follow-up ( $F = .1, p = .149$ ). No effect on anxiety Participation had no effect on psychological symptoms (such as nervousness, anxiety) in any age group	Selection Performance Detection Attrition Reporting Performance Detection Attrition Reporting	
6. Reine, Novo, and Hammarström (2011) • Active Labour Market Programmes (ALMP) • Analyse if participation in ALMP is related to mental health	Those who attended or should have attended last year of compulsory school	D: not specified C: not specified De: not specified P: not specified	TM: not specified OST <sup>d</sup> : not specified	Cross-sectional comparison of participants and non-participants. Data from a Cohort of 5 years, with an assessment of 1 year (2011–2012) Total N = 7,234	The ALMP participants reported higher scores for life satisfaction, life worth and happiness than non-participants. No effect on anxiety for the ALMP	Selection Performance Detection Attrition Reporting	
7. Sage (in press) • Active Labour Market Programmes (ALMP) • Can ALMP's improve subjective well-being	Unemployed individuals	D: not specified C: not specified De: not specified P: not specified	TM: not specified OST <sup>d</sup> : not specified	Cohort of 1 year with two assessments Total N = 559 Drop-out at T1 = 4 Drop-out at T2 = 158	Participants who participated in the intervention were more often re-employed, in this group psychological distress levels decreased ( $r = 3.83, p < .001$ ). However, for those who were still unemployed at T2, psychological distress levels did not change over time	Selection Performance Detection Attrition Reporting	
8. Vuori and Vesalainen (1999) • Labour Market Interventions (guidance courses of vocational training) • Do the interventions influence re-employment, increase job seeking activity and decrease psychological distress	Unemployed individuals ≤ 1 year or those who transit from short-term to long-term unemployment	Guidance course D: 10–15 days C: 60–100 h De: individual P: not specified Vocational: D: 6 months C: not specified De: individual P: not specified	TM: • Self-awareness and self-esteem OST <sup>d</sup> : • Job seeking skills • Labour market knowledge				

<sup>a</sup>Primary goals written in cursives.

<sup>b</sup>Risk of Bias: + high risk; – low risk; ? unclear.

<sup>c</sup>Studies with the same intervention.

<sup>d</sup>OST = Occupational Skills Techniques; \*ED: Experimental Design.


**Table 2.** Intervention and study characteristics of Psychological Interventions (PI).

Author(s) Intervention Primary goal of study <sup>a</sup>	Intervention characteristics			Study characteristics			Risk of Bias <sup>b</sup>
	Target population	Duration (D) Contact time (C) Delivery (De) Provider (P)	Theoretical methods (TM) and techniques	Design	Effects on mental health		
9. Creed, Machin, and Hicks (1999) • Cognitive Behavioural Training (CBT) courses vs. waiting list • <i>Evaluation of immediate and long-term well-being</i>	Long-term unemployed youth (≥12 months prior to the intervention)	D: 3 days C: 15 h De: group P: registered psychologists	TM: • CBT <sup>†</sup> approach • Learned optimism	Pre-posttest design, with a 14–16-week follow-up. Total N = 65 Drop-out at T2: N = 5 Drop-out at T3: N = 33	Beneficial effects of the intervention in comparison with the waiting list group on psychological distress ( $p < .01$ ), self-esteem ( $p < .01$ ), positive affect ( $p < .01$ ) and negative affect ( $p < .01$ ). Psychological distress and negative affect abated at T3, self-esteem and positive affect increased at T3.	Selection Performance Detection Attrition Reporting	+
10. Damburn and Dubuy (2014) • Positive Psychology Intervention (PPI) vs. treatment as usual • <i>Examine the effect of the PPI intervention</i>	Long-term unemployed (≥ 1 year)	D: 2 weeks C: 1 h De: individual P: psychologist with a master in PP <sup>††</sup>	TM: • Positive Psychology • varied PP <sup>††</sup> exercises; e.g. altruism, three good things	Observational study, with a pre-posttest design of individuals who accepted or declined an offer to the PPI. With a follow-up of 1 week Total N = 21 Drop-out: not specified	Intervention effects for depression ( $F = 13.357, p < .002$ ), and maintained at follow-up. Intervention effects for subjective fluctuating happiness ( $F = 7.793, p < .02$ ), life satisfaction ( $F = 6.134, p < .03$ ), state anxiety ( $F = 11.363, p < .003$ ) and trait anxiety ( $F = 2.30, p < .05$ ), but not at follow-up. No effects on self-esteem and self-efficacy	Selection Performance Detection Attrition Reporting	+
11. Della-Posta and Drummond (2006) • Cognitive Behavioural Therapy (CBT) vs. job search programme • <i>Can CBT enhance employment outcomes</i>	Rehabilitated adults ready for employment	D: 4 weeks C: 16 h De: group P: not specified	TM: • CBT <sup>†</sup>	Pre-posttest design, with a follow-up at 4 and 10 weeks Total N = 39 Drop-out: no drop out	Intervention effect for anxiety ( $F = 8.45, p < .01$ ), stress ( $F = 11.7, p < .01$ ) and a marginal effect for depression	Selection Performance Detection Attrition Reporting	?
12. Harris, Rose, Morrow, Comino, and Harris (2002) • Brief group Cognitive Behavioural Therapy (CBT) vs. non-CBT skills-based comparison programme • <i>The effect of the brief CBT training programme</i>	Long-term disadvantaged unemployed individuals	CBT D: 2 days C: 11 h De: group P: psychologist Non-CBT/D: 2 days C: 16 h De: group P: Red Cross trainers	TM: • CBT <sup>†</sup>	Quasi-ED <sup>†††</sup> , with pre-posttest measures Total N = 195 Drop-out: N = 95	Although improvements were found, the control group increased more than the intervention group on self-esteem ( $F = 5.64, p = .02$ ), hopelessness ( $F = 7.26, p < .01$ ) and optimism ( $F = 7.29, p = .01$ )	Selection Performance Detection Attrition Reporting	+

(Continued)



Table 2. (Continued)

Author(s) Intervention Primary goal of study <sup>a</sup>	Intervention characteristics			Study characteristics			Risk of Bias <sup>b</sup>
	Target population	Duration (D) Contact time (C) Delivery (De) Provider (P)	Theoretical methods (TM) and techniques	Design	Effects on mental health		
13. Maitoza and Evans (2014) • Bite Programme • Develop mentation, implementation and evaluation of the programme	Unemployed management versus non-management and their families	Management: D: 7 weeks C: 10.5 h De: group P: not specified Non-management D: 4 weeks C: 8 h (group) P: not specified	TM: not specified	Pre-posttest design in two groups (management and non-management), with a 6–9-month follow-up Total N = 25 Drop-out = not specified	A significant reduction in depression and family functioning for both samples		+ + ? ? ?
14. Machin and Creed (2003) • 2-day Cognitive Behavioural Therapy intervention & 5-week occupational skills intervention • Intervention effect on self-efficacy and general health	Unemployed individuals ≥36 months	D: 5 wks & 2 days C: 200–216 h De: group P: not specified	TM: • CBT <sup>c</sup> • Learned Optimism	Quasi-ED <sup>***</sup> , pre-posttest (CBT+OST vs. only CBT) Total N = 182 Drop-out at T3: N = 53	No interaction effect on general self-efficacy, general health, positive and negative affect		- ? - ? +
15. Proudfoot, Guest, Carson, Dunn, and Gray (1997) • Cognitive Behavioural Therapy training vs. social support programme • Effects of the programme on mental health, job seeking and job-finding	Unemployed individuals ≥ 12 months	D: 7 weeks C: 21 h De: group P: psychologists	TM: • CBT <sup>c</sup>	RCT, pre-posttest with a 3–4 months follow-up Total N = 289 Drop-out at T2: 80 Drop-out at T3: 106	Intervention effects were found on posttest and follow-up for self-esteem ( $p = .02$ ), self-efficacy ( $p = .03$ ), life satisfaction ( $p = .32$ ) and mental strain ( $p = .05$ )		- - ? - +
16. Rose, Perz, and Harris (2012) • Vocational Cognitive Behavioural Therapy Programme • Effects on psychological health and vocational outcomes	Unemployed individuals ≥ 2 years	D: 2 weeks C: 16 h De: group P: psychologists	TM: • CBT <sup>c</sup>	Pre-posttest design, with a 12-week follow-up. Total N = 27 Drop-out at T2: N = 4 Drop-out at T3: N = 6 RCT, 3-armed (expressive writing vs. control writing vs. non-writing). Total N = 63 Drop-out N = not specified	Significant improvements from pre to posttest were found for optimism ( $p < .05$ ) and were maintained at follow-up. No effects were found on mental health and self-esteem		? ? ? - - ?
17. Spera, Duhreind, and Pennebaker (1994) • Self-disclosure writing vs. control writing vs. non-writing • The impact of disclosive writing on reemployment activity	Unemployed individuals (5 months)	D: 3 months C: 50.4 h De: individual P: not specified	TM: • Psychosomatic Theory of Inhibition Technique: • Expressive writing		No significant differences on behavioural items such as exercise, difficulty falling asleep		+ - ? +

<sup>a</sup>Primary goals written in cursives.<sup>b</sup>Risk of Bias: + high risk; - low risk; ? unclear.<sup>c</sup>Studies with the same intervention.<sup>d</sup>CBT = Cognitive Behavioural Therapy; \*\*\*ED = experimental design.





**Table 3.** Intervention and study characteristics of Combined Interventions (CI).

Author(s) Intervention Primary goal of study <sup>a</sup>	Intervention characteristics			Study characteristics		
	Target population	Duration (D) Contact time (C) Delivery (De) Provider (P)	Theoretical methods (TM) and techniques	Design	Effects on mental health	Risk of Bias <sup>b</sup>
18. Reynolds and Gabbaini (2010) • The Winning New Jobs Programme vs. standard training opportunities • <i>Evaluation of the programme and the effect on reemployment and mental health</i>	Long-term unemployed individuals ( $\geq 3$ years) and opportunity ready	D: 2 weeks C: 20 h De: group P: Skilled JOBS trainers	TM: • Self-efficacy • Locus of control • Self-esteem • Inoculation against setbacks • Active learning	Quasi-ED <sup>c</sup> , pre(baseline)-posttest at 12-month follow-up. Total N = 352 Drop-out at T2 (12-month follow-up) N = 155	Intervention effects were found for inoculation against setbacks, but not for depressive symptoms, self-efficacy, general health and sense of mastery	Selection Performance Detection Attrition Reporting
19a. Vinokur et al. (1995) <sup>c</sup> • JOBS II intervention vs. booklet • <i>Enhancement of sense of mastery, effects on reemployment and mental health</i>	Unemployed individuals ( $\geq 13$ weeks), not on strike or expecting to be recalled for work in the next few months or planning to retire in the next two years	D: 1 week C: 20 h De: group P: unemployed social workers, educational counsellors, high school teachers	TM: • Self-efficacy • Locus of control • Self-esteem • Inoculation against setbacks • Active learning	RCT, pre-posttest with a follow-up at 2 and 6 months Total N = 1801 Drop-out at T2 N = 358 Drop-out at T3 N = 232	The intervention increased self-esteem (Cohen's effect size $d = .51$ ), job-search self-efficacy ( $d = 1.27$ ) and inoculation against setbacks ( $d = .86$ ) at T2 At T3 sense of mastery increased ( $F = 20.43, p < .01$ ), depressive symptoms decreased ( $F = 3.91, p < .05$ )	Selection Performance Detection Attrition Reporting
19b. Vinokur et al. (2000) <sup>c</sup> • JOBS II intervention vs. booklet • <i>Long-term effects on reemployment and mental health</i>	See 19a	See 19a	TM: See 19a	RCT, 2-year follow-up Total N = 1801 Drop-out at T4 (2-years follow-up) N = 371	Intervention effects from baseline to 2-year follow-up were found for depressive symptoms ( $F = -.06, p < .05$ ) and role-and emotional functioning ( $F = .06, p < .05$ ). A lower likelihood of experiencing a major depressive episode	Selection Performance Detection Attrition Reporting
20a. Vuori et al. (2002) <sup>c</sup> • Työihön intervention vs. booklet • <i>Short and long-term impact on reemployment, depression and distress also</i>	Unemployed individuals or individuals who received a termination notice and were searching for a job	D: 1 week C: 20 h De: group P: unemployed job seekers	TM: • Self-efficacy • Locus of control • Self-esteem • Inoculation against setbacks • Active learning • Gradual exposure • Social modeling	RCT, pre-posttest with a 6-month follow-up Total N = 1261 Drop-out at T2 N = 267 Drop-out at T3 N = 212	Intervention effect from baseline to 6-month follow-up on psychological distress ( $F = -.06, p < .05$ ), but not on depressive symptoms	Selection Performance Detection Attrition Reporting

(Continued)

**Table 3.** (Continued)

Author(s) Intervention Primary goal of study <sup>a</sup>	Intervention characteristics			Study characteristics		
	Target population	Duration (D) Contact time (C) Delivery (De) Provider (P)	Theoretical methods (TM) and techniques	Design Drop-out	Effects on mental health	Risk of Bias <sup>b</sup>
20b. Vuori and Silvonén (2005) <sup>c</sup> • Työihön intervention vs. booklet • Long-term effects on reemployment and mental health	See 20a	See 20a	TM: See 20a	RCT, pre-posttest at 2-year follow-up Total N = 1261 Drop-out at T4 (12 months follow-up) N = 209	Intervention effect from baseline to 12 months follow-up were found on depressive symptoms ( $F = -.06, p < .05$ ) and self-esteem ( $F = .05, p < .05$ )	Selection Performance Detection Attrition Reporting
21. Kreuzfeld, Preuss, Weippert, and Stroll (2013) • Health promotion programme • Improvements of objective and subjective health measures	Long-term unemployed	D: 3 months C: 64 h De: group P: not specified	TM: not specified	Pre-posttest with a 6-month follow-up Total = 119 Drop-out at T2 N = 25 Drop-out at T3 N = 60	Significant decrease in depression from baseline to T2 ( $p < .028$ ), but no difference between baseline and T3	Selection Performance Detection Attrition Reporting

<sup>a</sup>primary goals written in cursive.<sup>b</sup>Risk of Bias: + high risk; - low risk; ? unclear.<sup>c</sup>Studies with the same intervention.<sup>d</sup>ED = experimental design.

It should be noted that six studies in this review were based on three data-sets and interventions. First, the data-set from Vinokur, Price, and Schul (1995) was used in Vinokur, Schul, Vuori, and Price (2000). Second, the data-set from Vuori, Silvonen, Vinokur, and Price (2002) was also used for the study of Vuori and Silvonen (2005). Third, the data-set from Creed, Bloxsome, and Johnston (2001) originated from the study by Creed, Hicks, and Machin (1998). These six studies are therefore considered as three larger studies in our analyses.

To improve readability, each study was numbered (see Tables 1–3) and these numbers were used for references in the text. The duplicate studies received a single number with an a or b added (3ab;19ab;20ab).

## Results

This review contains 24 studies in which 21 different interventions were examined. Below the characteristics, the quality and the effectiveness on mental health of the interventions are reported.

### *Characteristics of the interventions*

As stated in the method section, the interventions could be classified in OST, PI and interventions combining OST and PI components (CI). The interventions varied in target group, intensity, delivery mode and applied theoretical methods.

#### *Target population*

Individuals are categorized as long-term unemployed (LTU) if they are without paid work for more than 12 months (OECD, 2015). Both the LTU (1;9;10;12;13;14;15;16;18;21) and short-term unemployed (STU, 3a;4;8;17;19ab;20ab) were targeted by multiple studies in this review. The LTU were most frequently targeted population within the PI category (9;10;12;13;14;15;16). For six studies (2;3b;5;6;7;11), the unemployment duration was not specified. Instead, most of these studies described specific target populations like rehabilitated individuals (11), school attendances of the last year of compulsory school (6), low educated individuals (5) and women on welfare (2).

#### *Intensity*

Four studies did not specify information to determine the intensity of the intervention (1;2;6;7). Within the remaining 17 interventions, intensity varied widely with regard to both duration and contact time. The duration varied from 2 days up to 6 months. Most of the interventions had a duration of less than 4 weeks (4;5;9;10;12;16;18;19ab;20ab) and eight interventions had a duration of more than 4 weeks (3ab;8;11;13;14;15;17;21).

The total contact time varied from 1 h upto 280 h. Seven interventions had a contact time of less than 20 h (4;9;10;11;12;13;16). A contact time of 20–100 h was seen in seven interventions (8;15;17;18;19ab;20ab;21), and 100 h upto 280 h was seen in four interventions (3ab;5;14).

#### *Delivery mode*

Most of the interventions in this review were delivered as a group intervention (3ab;5;9;11;12;13;14;15;16;18;19ab;20ab;21) whereas four interventions combined group and individual

delivery methods (4) or were delivered individually (8;10;17). There were also four interventions that did not specify this (1;2;6;7).

More than half of all studies, including seven out of eight OST studies, did not describe clearly by whom the intervention was delivered. The studies involved psychologists or (trained) psychology students (4;9;10;12;15;16), fellow unemployed individuals trained to counsel groups (peer educators; 19a;20a), Red Cross staff members (12) and skilled JOBS trainers (18), individuals trained to apply the specific techniques of the Jobs Opportunities and Basis Skills (JOBS) training programme. However, this study did not clarify what kind of professionals these trained individuals were (18). The trained peer educators were only active in the CI category (19ab;20ab). As expected, psychologists were the providers of most studies in the PI category (9;10;12;15;16).

### ***Theoretical methods and techniques***

In the studies of this review, a range of theoretical concepts and methods were described as the basis of the 21 interventions. Improving perceptions of self-control by strengthening underlying skills appears to be the approach most frequently employed (5;8;18;19ab;20ab), and represented within de OST and CI category. Such interventions typically aim at reinforcing self-efficacy expectancies, and related constructs such as locus of control and sense of mastery. Self-efficacy is a central construct from Bandura's Social Cognitive Theory and can be defined as the individual's belief in his or her own capabilities to perform a specific behaviour under certain circumstances (Bandura, 1997). Locus of control is the degree to which individuals believe they can exert control over their own life (Levenson, 1973). Sense of mastery is the individuals believe in one's own power to influence the external environment and achieve the desired outcomes (Pudrovska, Schieman, Pearlin, & Nguyen, 2005). The specific techniques used in these interventions were not fully reported, but included recognizing and communicating about marketable skills (8;20ab), enhancing social and interpersonal skills (5;8;18;19ab;20ab), learning constructive strategies to resolve problems (5;18;20ab) and enhancing writing skills (19ab;20ab).

Another group of interventions, all in the PI category, were based on Cognitive Behavioural Therapy (CBT, 9;11;12;14;15;16). The central aim of CBT is to achieve improvements in mental health by modifying dysfunctional thinking and behaviour (Beck, 1997; Butler, Chapman, Forman, & Beck, 2006). The description of specific techniques used in these interventions was lacking in most studies. In only three studies these techniques were specified (11;12;15): cognitive restructuring by identifying negative thoughts and modifying or replacing them with more rational thoughts (11;12;15), problem-solving through a five-step structured problem-solving activity (12), breathing techniques and other relaxation skills (11;12), psycho-education on thinking errors and on attributional thinking (11;15).

Additional theoretical approaches were reported in four studies (2;4;10;17). First, one intervention (10) was based on positive psychology and reported the following techniques as the bases of the intervention: writing a gratitude letter, describing 'three good things' every day and the development of 'a strengths in action' plan (10). Positive psychology aims to enhance well-being by improving valued subjective experiences, hope, optimism and happiness (Seligman & Csikszentmihalyi, 2000). Second, the theories of emotional expression (Pennebaker, 1997) and possible selves (Markus & Nurius, 1986) were applied in one study, using self-generated imagery as a main technique (4). This included the construction of a valued successful possible self, mentally rehearsing competent job interviews, imagining

attaining their desired job and also constructing psychological and spiritual growth opportunities. Third, the psychosomatic theory of inhibition, which postulates the harmful influence of the inhibition of thoughts and feelings on psychological and physiological problems (Pennebaker, 1997), was applied using expressive writing as a technique to promote the disinhibition of feelings and thoughts (17). Finally, one intervention (2) focused on the social environmental conditions affecting one's health, by applying the ecological theory. This theory describes the dynamic interplay between situational and personal factors and also the influence of environmental conditions on health (Stokhols, 1996). The techniques derived from this theory were not mentioned.

The remaining studies (1;3ab;6;7) described mostly occupational skills used in the interventions, without providing a theoretical framework (1;3ab;6;7). The occupational skills were not specified in three of these interventions (1;6;7). One intervention, represented by two studies (3ab), reported training of computer awareness, typing, trade assisting, grooming, communication, preparing for interviews, job seeking skills and labour market knowledge. Finally, two studies (13;21) did not specify a theoretical framework nor any specific techniques.

## ***Effectiveness of the interventions***

### ***Quality of the studies***

The description of the research methodology in the 24 studies in this review was rather poor, which is reflected by the fact that in all studies the risk of bias for at least one of the five types of bias could not be assessed. A randomized controlled trial (RCT) was conducted in seven studies (4;11;19ab;20ab) of which two can be classified as high quality (19ab), encountering a lack of description of the method of randomization. The remaining RCTs were of lower quality and encountered the following limitations: [1] lack of description of the method of randomization (20ab), [2] attrition bias (15) and [3] performance bias due to full access to other outplacement services next to the experimental condition (17).

The studies that used a quasi-experimental design (2;3ab;12;14;18), and the studies with a single-group pre–posttest design (5;9;10;11;13;16;21) encountered the following limitations: [1], selection bias due to a lack of randomization (2;3ab;9;10;12;13;14;18); [2], attrition bias (2;3ab;5;9;12;14;18;21) and [3] limitations due to small sample size (2;3ab;9;10;12;13).

The remaining studies employed a longitudinal design with a duration ranging from 1 year to 14 years (1;6;8), or a cross-sectional design (7). Besides a lack of a control group, these studies encountered multiple methodological issues, such as selection bias, attrition bias and detection bias.

Overall, methodological quality varied widely, and was often reported rather poorly.

### ***Effects on mental health***

Mental health was assessed with a variety of measures, including positive constructs such as optimism, self-esteem and sense of mastery, and negative constructs such as depression, anxiety and hopelessness. Some studies included both positive and negative measures. Outcomes of the studies included in this review are presented here. First, the three intervention categories are reviewed separately, followed by a general overview.

More than half of the OST studies (Table 1) reported positive effects, including an increase in self-esteem (3ab;4;5), job-search self-efficacy (3b), life satisfaction (3a;7), perceived control

(4), life worth, subjective well-being among re-employed participants (1) and happiness (7). In two of these studies (5;7), a null finding was reported on a negative outcome measure, anxiety (5;7), and in one study an adverse effect on subjective well-being among participants unsuccessful in regaining employment was found (1). The remaining three OST studies found no effects (2;6;8). The OST category did not contain any studies that are considered of high quality.

In the PI category (Table 2), almost all studies reported effects (9;10;11;12;13;15;16), both on positive outcome measures like self-esteem (9;12;15), self-efficacy (15), positive affect (9), subjective fluctuating happiness (10), life satisfaction (10;15), optimism (12;16) and on negative outcome measures like depression (10;11;13), anxiety (10;11), psychological distress (9), negative affect (9), hopelessness (12) and mental strain (15). However, two of these studies did not improve on all outcome measures (10;16), respectively, no effect on self-esteem (10;16), self-efficacy (10) and mental health in general (16). Notably, in one study the non-CBT active control intervention delivered by Red Cross trainers performed better than the CBT-based experimental condition delivered by a psychologist (12). Two PI interventions showed no effects on mental health at all (14;17). In the PI category, no studies that are considered of high quality were included.

Interventions in the CI category (Table 3) appeared to have more consistent and stronger effects on mental health outcomes than PI and OST. Moreover, this evidence seems more robust since this includes the positive findings from the two high-quality studies (19ab) represented in this review. All of the six CI studies (18;19ab;20ab;21) reported positive effects, including inoculation against setbacks (18;19a), self-esteem (19a;20b), self-efficacy (19a), role and emotional functioning (19b), psychological distress (20a), depression (19b;21) and depressive symptoms (20b). In two of these six CI studies, not all outcome measures improved: no effects were reported for depressive symptoms (18;20a), and for self-efficacy, general health and sense of mastery (18). The 'The Winning New Jobs program' (18) is the only JOBS-related intervention that is focused on the LTU (> 3 years). The JOBS programme is one of the first reported effective welfare-to-work programmes (Caplan, Vinokur, Price & van Ryn, 1989), and almost all of the CI interventions are based on this programme. Caplan's (1989) framework for the JOBS programme involved a process model in which social interventions influence motivation and skills, that in return determine job seeking behaviour (Caplan et al. 1989).

Overall (Tables 1–3), the majority of studies reported positive effects on mental health (3ab;4;5;7;9;10;11;12;13;15;16;18;19ab;20ab;21). In 11 out of these 18 studies, consistent positive effects were reported, while 7 studies reported positive effects on some but not all the mental health outcomes that were measured (5;7;10;16;18;19a;20a). The positive constructs (e.g. self-esteem, sense of mastery) seem to generate larger effect sizes in comparison with the negative constructs (e.g. depression, anxiety). However, within the positive constructs categorization, more variables were investigated in the studies than negative constructs, 12 versus 7 variables. Almost a quarter of the studies reported no beneficial effects (2;6;8;14;17) or even adverse effects (1) on mental health. The latter study reported an adverse effect on the subjective well-being of participants that remained unemployed, though among individuals who did get re-employed, a positive effect on subjective well-being was found. This was also seen in another study (8) where the psychological distress levels did not change for those who remained unemployed, only for those who re-employed (8).

Most studies reported outcomes at follow-up in addition to immediate post-treatment outcomes. These follow-ups varied between 2 and 24 months. A follow-up of less than 6 months was reported in 10 studies (3ab;4;5;9;10;11;15;16;19a). Three studies reported increased intervention effects over time (9;15;19a). The remaining studies reported mixed results, a combination of retaining the effects from the posttests at follow-up and no effect on some of the investigated constructs. The OST and PI studies are overrepresented within this category. Five of the 16 studies reported a follow-up of 6–9 months (5;13;19a;20a;21). In two of these studies (19a;20a), the intervention effects increased over time. The other three studies, overrepresented in the CI category, reported either maintenance of effects of some of the researched constructs (5;13), or no effects at all over time (21). The CI category also contained the remaining three studies with a follow-up of more than 1 year (18;19b;20b). One study with a follow-up of 1 year (18) reported mixed results: an increase of some of the researched constructs. And the two remaining studies (19a;20b) reported an increase in the intervention effects over time.

Overall, long-term intervention effects were found in five studies (9;15;19ab;20b), including the two high-quality studies (19ab).

### ***Moderators of effectiveness***

Method of delivery, intervention intensity and target population (short-term unemployed versus long-term unemployed) were considered as moderators of intervention effectiveness in this review. As the included studies did not allow for statistical pooling of data, analyses of moderation were performed qualitatively.

#### ***Method of delivery***

There were significantly more group delivered interventions than individually delivered interventions in this review (seventeen versus three) and in four studies the delivery method was not specified (1; 2; 6; 7). Group and combined group–individual interventions (3ab;4;5;9;11;12;13;14;15;16;18;19ab;20ab;21) appeared to be more effective in promoting mental health than individually delivered interventions (8;10;17). Almost all of the group and combined delivered interventions reported (partial) positive effects on mental health, while only one of the individual delivered interventions reported positive effects (10). It should be noted, though, that two of the three individual interventions (10;17) were very small studies. This impedes a valid comparison of interventions on this delivery mode.

#### ***Intervention intensity***

Remarkably, the analysis of a moderating effect of intervention intensity points towards an inverse association between intensity and effectiveness. More specifically, the interventions with the strongest and most robust mental health effects include the JOBS intervention (19ab;20ab), which is considered as a relatively low intensity programme with a duration of 1 week and 20 h of contact time in total. In comparison, the interventions with highest duration (17;21) reported no intervention effects (17), or the effects were not maintained at follow-up (21).



### **Target population**

Regarding the unemployment status of the target population prior to recruitment, studies among (LTU; > 12 months) were compared with studies among short-term unemployed (STU; ≤ 12 months). In 8 out of 10 studies targeting the LTU (9;10;12;13;15;16;18;21), primarily positive effects on mental health were found. Similarly, in six out of eight STU studies (3a;4;19ab;20ab), positive effects were reported. Notably, the studies that did not specify the target population (2;3b;5;7) appeared to have less convincing effects. These studies either showed short-term effects only (3b;5;7) or none at all (2;6).

### **Discussion**

Despite the profound impact of unemployment on mental health, only a limited number of studies on interventions aiming at this topic were published over the last two decades. Overall, in about 75% of the studies, short-term beneficial effects on mental health or psychological morbidity were found, but evidence of sustained effects is weak. In general, the strength of the evidence is impaired by the limited methodological quality of most of these studies. Of the 21 interventions, 8 could be classified as OST, 9 as PI and 4 interventions combined elements of both approaches (CI). OST are characterized by practising vocational skills, whereas PI reinforces skills for self-regulation of cognitions, mood and behaviours related to mental health. The available evidence suggests that CI may be superior to both OST and PI in promoting mental health among unemployed.

The CI category was represented by the highest quality studies and these showed consistent and lasting beneficial mental health effects, including increased self-esteem, reduced depression and reduced psychological distress. This suggests that the training of occupational skills and of psychological resilience both contribute independently to mental health in unemployed and that joining these approaches into a comprehensive intervention is promising. While the psychological components may contribute to mental health more directly, the occupational skills components may add an indirect effect through increasing the chance of re-employment with its consequential mental health benefits. Studies have also shown that still being unemployed after participating in OST has detrimental effects on the mental health (Andersen, 2008; Vuori & Vesalainen, 1999). Future research is warranted to confirm this hypothesis of complementarity of approaches. It should be noted, though, that within the CI category the JOBS intervention (Caplan et al., 1989) is dominant among included studies, and among studies with a high-quality design in particular. Although JOBS has shown to have robust effects across different cultural and national settings, this dominance of a single intervention in the CI category may limit the generalizability of attributing superior effectiveness to the combined nature of interventions.

Remarkably, the relatively strong effects of CI appeared not to be affected by the rather low intensity of the CI in comparison with the PI and OST. As this also may be an artefact resulting from the small number of available CI studies, and due to the limited homogeneity between studies, more research is needed to determine the optimal intervention intensity for varying target populations. Furthermore, within CI studies, there was a lack of data on individuals who remained unemployed after participating. Because of the detrimental effects of continued unemployment (Folke et al., 2012; Paul & Moser, 2009; Wanberg, 2012), future research should investigate how these persistent unemployed may be protected against



this harm. It might be that for these individuals participating in PI may be preferred as PI focuses on the resilience to cope with unemployment.

The interventions in this review appeared to be mostly based on social and psychological applied theories and methods. However, the description of the theories, methods and techniques of the interventions was poor and lacking. Constructs related to self-control were most often used as the basis of the interventions. Future research should investigate if the constructs related to self-control are indeed the best basis for interventions to enhance the mental health of the unemployed. There was also limited evidence on active ingredients of the interventions, as most studies involved multi-component interventions. Future research is needed to determine active ingredients that improve the mental health of unemployed target populations. Interestingly, one study (Dambrun & Dubuy, 2014) based their intervention on a theory from the positive psychology domain. The use of new generations of theories and techniques like the broaden-and-build theory (Fredrickson, 2001, 2004) or techniques focusing on enhancing psychological flexibility through acceptance of (negative) feelings and thoughts (e.g. Hayes, 2004, Acceptance and Commitment Therapy) should be further explored. These new theories could help build the psychological resilience and therefore one's well-being independent of occupational status. Also another interesting finding was that not one intervention in this review contained a digital or web-based component as delivery method; future interventions should incorporate these new delivery methods (eHealth and/or mHealth).

The target population of LTU is more susceptible for an impaired mental health due to the duration of their unemployment (Borgen & Amundson, 1987; Paul & Moser, 2009; Vuori et al., 2002). The LTU and short-term unemployed (STU) were almost equally targeted in this review. Due to a lack of information, it remains unclear if LTU and STU are in need of targeted interventions. Possibly, PI are the best-suited interventions for the LTU, but it should be noted that this population has rarely been exposed to other intervention categories (OST or CI). More research on this issue is therefore warranted. Another interesting finding with regard to the target population was that only three studies explicitly aimed at persons of lower socio-economic status (SES), in spite of the increased risk in this target group of psychological morbidity (Martin et al., 2010; Matt, Bellardita, Fischer, & Silverman, 2006). Also, educational qualifications are still the best guarantee against unemployment, and individuals with a lower SES often lack such qualifications (Hanisch, 1999; Wanberg, 2012). Therefore, the odds of reemployment are lower for this population. Future research should also take this population into account.

Unfortunately, the reporting of research methodology in the included articles was often inconsistent and lacking in detail. This impeded a thorough comparison of the evidence within this review, and may also hinder future replications of the studies. Recently, an extension on the Consolidated Standards of Reporting Trials Statements guideline has been developed for social and psychological interventions, the CONSORT-SPI (Grant, Mayo-Wilson, Melendez-Torres, & Montgomery, 2013; Montgomery et al., 2013). If proven valid, future research in this field should preferably comply with these CONSORT-SPI guidelines. In a similar vein, the reporting of the content and active ingredients of the interventions needs improvement. It has been argued by Michie and others (Michie & Abraham, 2004; Michie, Abraham, Eccles, Hardeman, & Johnston, 2011; Michie, Fixsen, Grimshaw, & Eccles, 2009) to complement the CONSORT-SPI guideline with: [1] detailed description of the intervention,

[2] clarification of the assumed change processes and design principles, [3] access to intervention manuals and protocols and [4] detailed description of active control conditions.

Some limitations of this review should be addressed. First, we encountered strong heterogeneity between studies and this inhibited the pooling of data for statistical meta-analyses. However, the primary aim of this review was to explore the available evidence on various interventions that enhance the mental health of unemployed, as well as the currently applied theoretical frameworks. For this purpose, this narrative review seems adequate considering the current state of this field of research. Taking a wide scope for this review enabled us to find numerous gaps in the literature on this topic, and to formulate directions for future research. Second, we included studies that contained Active Labour Market Programmes (ALMPs). ALMPs are subsidized government programmes and are often mandated under threat of benefit sanction (Brown & Koetti, 2015; Sage, 2015). These programmes aim to reduce the risk of unemployment and to increase workers' earning capacity (Brown & Koetti, 2015; Sage, 2015). ALMPs can be classified into five categories: (1) ALMPs that provide incentives for retaining existing employment, (2) ALMPs providing incentives for creating new employment for labour market outsiders, (3) ALMPs providing incentives for seeking and keeping a job (e.g. public worker), (4) ALMPs providing incentives for human capital enhancement by upgrading workers' skills and (5) ALMPs that improve labour market matching policies aiming at raising the probability, efficiency and quality of labour market matching (Brown & Koetti, 2015). In this review, we focused on ALMPs directly targeting the unemployed (categories 2 and 3), rather than ALMPs aiming at employers or intermediation services (categories 1, 4 and 5). However, the other ALMPs may, in the long term, also contribute to better mental health of the unemployed. By excluding these interventions this remains untested. Finally, we excluded interventions targeting youth. Although this contributed to a more rigorous review methodology, this does not imply that interventions aiming at young people do not deserve attention. On the contrary, there is evidence suggesting that unemployed youth suffer considerable negative consequences (Creed & Reynolds, 2001; Hammarström, 1994). A review specifically addressing youth target groups is warranted to fill this gap.

Summarising: a relative small number of interventions were found that focused on improving the mental health of the unemployed. A combination of vocational skills aiming at re-employment and psychological components strengthening psychological resilience appears to be the most promising approach. The evidence found in this review was impaired due to poor study designs and due to poor reporting of intervention components. There is a need for high-quality research on the intervention effects on the mental health of the (long-term) unemployed. Future research should also explore new theoretical approaches, delivery methods, optimal intensity and high-risk populations.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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