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A systematic review and meta-analysis of Recovery educational interventions for mental health professionals

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Abstract

The history of mental health care has been marked by various struggles in maintaining the dignity of service users. Some reform movements have started to use educational strategies aimed at the beliefs and attitudes of professionals, as well as changing the way that practice is carried out. This paper intends to systematically review and synthesize studies assessing awareness and training activities for mental health professionals covering aspects related to recovery, empowerment, and in general, rights-based care to achieve full citizenship of mental health services users. We reviewed 26 articles and were able to include 14 of them in meta-analytic calculations. Our results at the qualitative level show an evolution of the literature towards better quality designs and focus on aspects related to the impact and maintenance of the effects of these training activities. Meta-analytic calculations found high heterogeneity but no risk of biases and low-to moderate effect sizes with a statistically significant impact on beliefs and attitudes but not on practices. The importance of this information in improving and advancing these educational activities is addressed.

Keywords: Mental health recovery, review, empowerment, person-centred approaches, rights

Introduction

Since Pinel released the chains of the Bicêtre and Salpêtrière inmates, until the recent recovery movement, the history of mental health care has been marked by various struggles in preserving the dignity of service users (Goldman & Morrissey, 1985). At the end of the 18th century, the appearance of some illustrious patients, including King George III in the UK and Jean-Baptiste Pussin (an ex-patient turned in Bicêtre Hospital-superintendent and Pinel's collaborator) and his wife Margueritte Jubline, marked the inauguration of the first humanitarian reform (Schuster, Hoertel, & Limosin, 2011). In the mid-19th century the UK Alleged Lunatics' Friend Society, founded by people with internment experience carried out what may be considered the first organized political lobbying and rights advocacy campaign for people confined in psychiatric hospitals (Hervey, 1986). Six decades later, Clifford Whittingham Beers founded the US National Committee for Mental Hygiene after having been confined to a mental institution where he witnessed serious maltreatments. The twentieth century witnessed how the anti-psychiatry, community mental health, and psychiatry survivors movements once again exposed the humiliations that were experienced in psychiatric care, giving way to the Psychiatric Deinstitutionalization process. This institutional transformation, although reduced coercive measures and long-term hospitalization, failed to provide enough outpatient and rehabilitative psychosocial services to replace the old interment system. The influence of the biopsychosocial model (Bachrach, 1993) and the efforts of community-oriented professionals should have been promising, but lack of funding and increased investment in biomedical-oriented services had detrimental effects on the deinstitutionalization process. For instance, the lack of funding for the process led to an increase in the number of homeless people with mental disorders (Lamb, 1984).

It could be said that in all these struggles, two or more truths about the nature and treatment of mental disorders were at stake (Bracken & Thomas, 2001). Indeed, the question of power has been highly relevant in the history of mental health care (Rose, 1989), not only because of the violence that was tolerated by the biomedical establishment, but also due to the influence of the pharmaceutical industry. This has been the main object of struggle for reform movements. Additionally, some paradigmatic changes occurred when senior professionals sympathized with changes driven by consumer organisations. Examples of this have accompanied the evolution of psychiatric care, from Pinel himself to contemporary reformists involved in the international recovery and other allied user-led movements.

Recently, mental health consumers/(ex-) users/survivors' groups, the recovery movement and the various campaigns against stigma at the global level have moved away (to varying degrees) from the struggle for a unique truth about mental health. Similarly to cultural competence (Comstock et al., 2008), a greater focus has been placed on the need for rights-based care through advocacy, as well as reflection and training of mental health professionals. These activities are focused not only on the stigma and discrimination that mental health service users often confront but also the need to empower them to make shared decisions and the need to adapt concepts used in general biomedicine to a field with many peculiarities and very specific psychosocial needs.

This new notion and strategy is reflected in the emergence of the literature on changes in the beliefs and attitudes of mental health professionals (Hansson, Jormfeldt, Svedberg, & Svensson, 2013; Ponce, Clayton, Gambino, & Rowe, 2016), in contrast to the literature on deinstitutionalization that strongly focused on structural changes. Campbell & Gallagher (2007) carried out the first literature review on recovery training in mental health practice. They analysed a total of 30 educational interventions. Their

findings point to a very heterogeneous inter-professional environment with a preponderance of experiential and reflective training activities combined with traditional teaching methods. They also stressed the importance of participation from service users and their relatives in these training experiences. In this regard, Repper and Breeze (2007) summarise user involvement in the education of health professionals, emphasising interpersonal skills, respect and humanistic qualities of caring, in contrast with practitioners' preferences for technical skills. In a conceptual review, Mabe, Rollock, & Duncan (2016) offer an overview of the contents of recovery-oriented training activities for clinicians. Starting from the recovery principles, all of them include the promotion of attitudes that support recovery-oriented care such as the elimination of stigmatizing views of individuals diagnosed with mental disorders, viewing patients as equal partners in their care and introducing recovery-oriented practices such as methods for instilling hope, identification of strengths or empowerment. In addition, many of them include individuals with a lived experience of mental illness as trainers. Using a rapid realist review methodology, Gee, Bhanbhro, Cook, & Killaspy (2017) identified factors contributing to lasting change in practice following recovery-based training interventions for inpatient mental health rehabilitation staff. They reviewed fifty-one documents based on 49 training experiences. Their findings point out the need to implement collaborative action plans and regular meetings, appointing change agents, explicit management endorsement and prioritization and modifying organizational structures to achieve lasting change. A recent narrative review (Jackson-Blott, Hare, Davies, & Morgan, 2019) yielded similar conclusions and stressed the need to incorporate recovery-oriented training within organisational changes to guarantee its translation into clinical practice.

So far, to the best of our knowledge, no systematic review or meta-analysis of the literature on recovery training has been carried out. The purpose of this study is to

systematically review and meta-analyse this information to provide an overview of the effectiveness of recovery training, as well as the best strategies to achieve change in different professional contexts. The topics covered in the present work are aspects related to empowerment, recovery, shared decision-making, stigma and in general rights-based care, in order for mental health services users to achieve full citizenship.

Methods

We adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009). We registered the review in PROSPERO (code CRD42017062561).

Eligibility criteria for the systematic review

For this systematic review, we considered empirical reports on recovery training addressed to mental health professionals involved in the treatment of mental health symptoms including clinical psychologists, general practitioners, psychiatrists, nurses, social workers, peer support staff as well as students in these disciplines.

We discarded articles exclusively dealing with stigma or seclusion and restrain measures due to the existence of recent comprehensive reviews (Goulet, Larue, & Dumais, 2017; Gronholm, Henderson, Deb, & Thornicroft, 2017; Henderson et al., 2014).

Inclusion and exclusion criteria for the meta-analysis

In terms of PICOS (participants, interventions, comparisons, outcomes and study design) the key inclusion criteria were; participants – mental health practitioners; interventions – recovery or psychosocial rehabilitation training programmes designed for promoting changes in knowledge, attitudes and practice based on recovery principles; comparisons – intervention versus control or post versus pre; outcomes – recovery-based knowledge, attitudes and practices; and study design – randomised, quasi-experimental and before-and-after/pre-post designs.

Exclusion criteria: qualitative measures, cross-sectional or retrospective, measuring change in consumers, professionals outside the mental health field, indistinct reporting of consumers and professionals' outcomes.

Data sources and search terms

We searched the academic databases PsycINFO, MEDLINE, Google Scholar and Scopus with the objective of finding academic literature; but we also searched in regular search engines such as Google and Bing, with the aim of finding grey literature on the subject.

Due to the heterogeneity of the reviewed subjects, several series of systematic reviews of terms were carried out. The search terms included seminar, teaching, training, or workshop; combined with keywords such as citizenship, human rights, empowerment, person-centred, recovery, shared decision-making, stigma; and classical professional terminology such as psychiatry, psychiatric care, psychology, psychotherapy, social work, social education, nursing and peer support. We also used a snowballing strategy building on the references of each article that was previously added. All these strategies were repeated until no relevant new articles were found. A more detailed explanation of search terms and strategies can be found in the PROSPERO record included as electronic supplementary material.

Meta-analytic data extraction process

The following variables were extracted from each paper by the first and second authors: occupation of participants; size of the experimental sample; size of the control sample, nature of the control condition; percentage of females, type and length of educational intervention; main outcomes; and the mean and standard deviations of these main outcomes. The outcomes of interest were grouped in three conceptual domains: (a) knowledge of recovery principles, (b) recovery attitudes and (c) recovery-based practice.

Quality assessment

The Quality Assessment Tool for Quantitative Studies (QATQS; National Collaborating Centre for Methods and Tools, 2008) was used to assess the quality of the studies (see table 2). QATQS assesses methodological rigor in six areas: (a) selection bias; (b) design; (c) confounders; (d) blinding; (e) data collection method; and (f) withdrawals and dropouts. QATQS scoring was conducted independently by both authors. Any discrepancies were resolved by discussion with agreement reached in all cases. Details of the QATQS scoring can be found in table 2.

Statistical analyses

We used the meta package (Schwarzer, Carpenter, & Rücker, 2015) for the R software (R Core Team, 2018) to calculate the statistical analyses and create both forest and funnel plots. To assess publication bias, we used contour-enhanced funnel plots and Begg and Mazumdar (1994) tests by outcome valence. We used random effects models to calculate effect sizes due to the anticipation of methodological heterogeneity between studies in some outcomes. As most studies reported means and standard deviations, different scales were grouped under a common outcome type (knowledge, attitudes and practice) and we calculated standardized mean differences (SMD) with 95% confidence intervals for each outcome (Sedgwick & Marston, 2013). In case of adding a negative valence scale to an asset-based outcome, we recoded the means (multiplied by minus one) so that the valences coincided. For studies with more than one scale in the same outcome group, we converted mean values for each of these measures to a single mean value for the intervention and control groups respectively. We computed the variance of the mean among scales enclosed within the same outcome grouping using Borenstein, Hedges, Higgins, and Rothstein's (2009) method:

$$var\left(\frac{1}{m}\sum_{i=1}^{m}Y_i\right)=\left(\frac{1}{m}\right)^2\left(\sum_{i=1}^{m}V_i+\sum_{i\neq j}\left(r_{ij}\sqrt{V_i}\sqrt{V_j}\right)\right)$$

When the correlation between scales was unknown, we assumed r = .5 as a midpoint between total independence and total dependence. For the weighted parameters, we excluded one study with active control arms (Williams et al., 2016). This was necessary to preserve the statistical independence of assumptions, so the risk of bias due to the inflation of the overall effect size's variance could be controlled. Heterogeneity was systematically assessed among the studies using the Cochran's *Q*, I^2 and the τ^2 statistics. Cochran's *Q*, is a Chi-squared distributed measure of weighted squared deviations. It can be converted into a p value and is the usual heterogeneity test statistic. Meanwhile, the principal advantage of the I^2 parameter, the proportion of the observed variance reflecting real differences in effect size, is that it can be calculated and compared across meta-analyses of different sizes, of different types of study, and using different types of outcome data (Higgins, Thompson, Deeks, & Altman, 2003). Finally, τ^2 is the random effects variance of the true effect sizes. Regarding moderator analyses, for each outcome, we gathered variables with possible effects on the impact of interventions (De Rijdt, Stes, van der Vleuten, & Dochy, 2013; Mansouri & Lockyer, 2007). We included year of publication, percentage of females, age, duration of intervention, time between pre and post evaluations, QATQS score and active arm sample size as covariates. Study design (randomised vs. non-randomised) could only be tested for the practice outcomes as we followed J. P. Higgins & Green's (2011) minimum of three studies for inclusion recommendation.

Results

Study selection

The search of the PsycINFO, MEDLINE, Google Scholar and Scopus databases provided a total of 836 articles and 15 more were added through snowballing. After removing duplicates, 823 remained, of which 52 included information on concrete trainings. Eight studies only included narrative information that has been used throughout this paper. Another eight studies were also excluded from the systematic review as they included training activities aimed at objectives different from those of the recovery movement. Five studies did not include any evaluation information, four were evaluating systemic or user-centred outcomes and one was an extended report of a published paper. After excluding these 26 documents, we included in the systematic review 26 articles reporting any kind of information about the evaluation of the effectiveness of these training activities.

Finally, 14 studies included pre-post, quasi-experimental or experimental designs, excluding a study with just active arms (Williams et al., 2016), were included in the meta-analysis. Figure 1 offers a flow diagram of the search and inclusion process.

Figure 1

PRISMA Flow Diagram

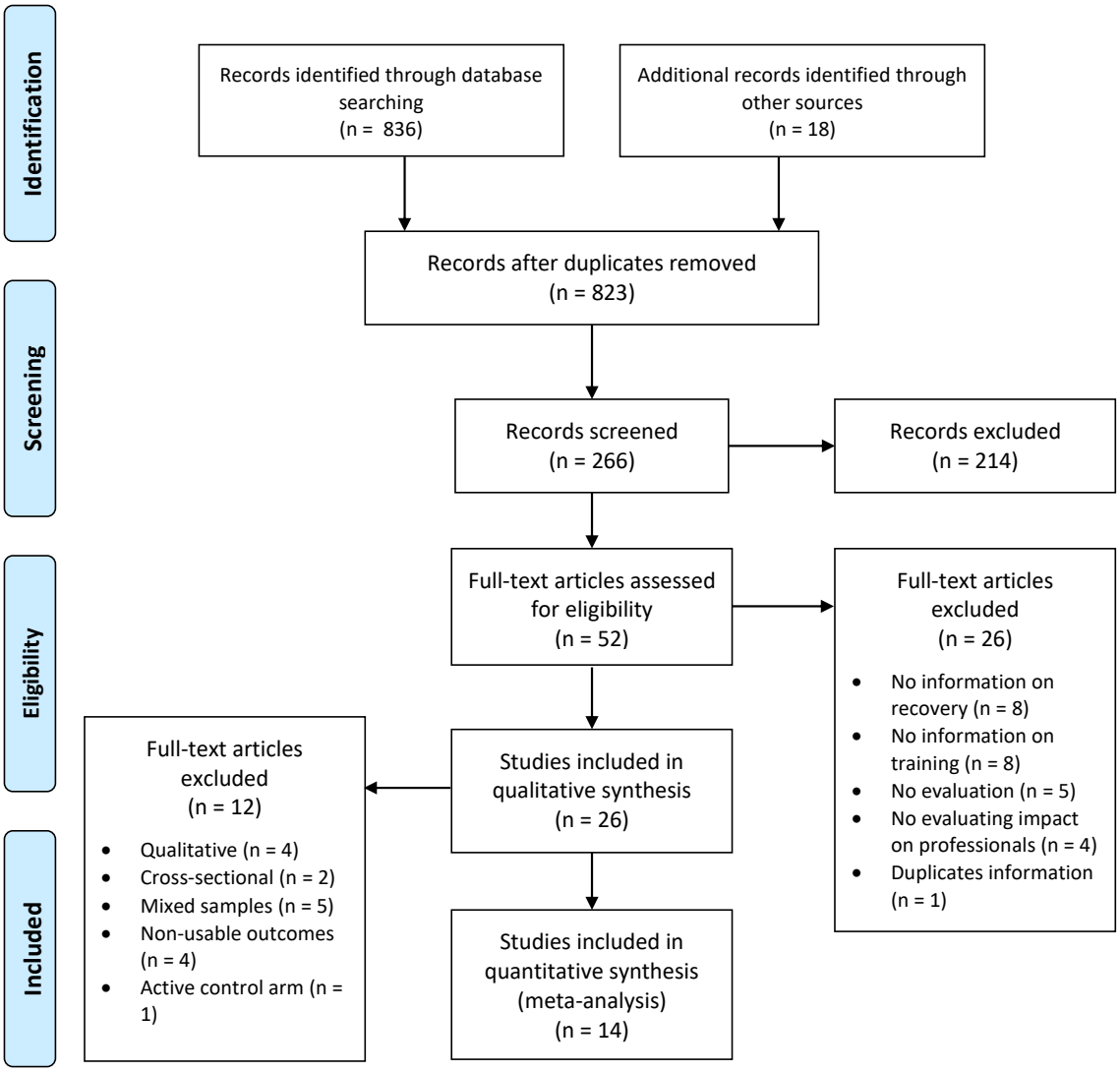


Table 1

Recovery and community treatment trainings for professionals

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
1	Bhanbhro et al., 2016 Further analysis of a subsample of Killaspy et al. (2015)	England, UK	Rehabilitation Effectiveness for Activities for Life (REAL), training intervention ("GetREAL"; S. Cook et al., 2016).	The original study included 40 inpatient mental health rehabilitation units (20 intervention, 20 control). For this study 4 focus groups, 3 interviews, 26 daily reflective practice diaries, 9-unit staff evaluation forms, 3 fidelity monitoring sheets and 6 supervisors notes were used.	Staff training in three stages: predisposing (single visit), enabling (five weeks), and reinforcing (12 months follow-up).	Qualitative	Focus groups, interviews, reflective practice diaries, forms.	Organisational culture and embedding of a change management programme in routine practice were reported as key influences in sustaining change in practice.	Convenience sample within an RCT.	No (qualitative)
2	Byrne, Happell, Welch, & Moxham, 2013	New South Wales, Australia	'Recovery in mental health nursing' by a person with a lived experience.	Undergraduate nursing students undertaking a major in mental health nursing (n=12) who had recently completed the subject 'Recovery for mental health nursing practice'.	Subject had been coordinated and taught by a person with a lived experience of mental health service use.	Qualitative	In-depth interviews	Two main themes were identified: (i) 'looking through fresh eyes' – what it means to have a mental illness; and (ii) 'it's all about the teaching'.	Small number of students.	No (qualitative)

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
3	Chen, Krupa, Lysaght, McCay, & Piat, 2014	Ontario, Canada	Own design course. Basic recovery concepts, tension-practice-consequence model, recovery competency framework + Appreciative Inquiry group learning programme.	Inpatient multidisciplinary providers (n=26).	Flexible delivery of facilitated group discussions, panel discussions, site visits, consumer presentations, didactic lectures, and role playing exercises as described by Chen, Krupa, Lysaght, McCay, & Piat (2013)	Pre-post	Recovery Knowledge Inventory (RKI; Bedregal, O'Connell, & Davidson, 2006)	Participants' improvement on recovery knowledge after the self-learning program.	Lack of a control group, confounding factors, such as the effect of other education or the degree of recovery-oriented culture in the research sites, small sample size	Yes
4	Crowe, Deane, Oades, Caputi, & Morland, 2006	University of Wollongong, Australia	Collaborative Recovery Training Program (Oades, Deane, Crowe, Lambert, Kavanagh, & Lloyd, 2005)	Mental health workers from the community-based government health sector and non-government organizations (n=248).	Workshops delivered by professional educators	Pre-post	RKI (Bedregal et al., 2006), Staff Attitudes To Recovery Scale (developed for this study)	Trainees significantly increased their knowledge regarding principles of recovery and belief in the effectiveness of collaboration and consumer autonomy support, motivation enhancement, needs assessment, goal striving, and homework use.	Lack of a control group to be able to rule out other potential confounds.	Yes

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
5	Deane, Goff, Pullman, Sommer, & Lim, 2018	University of Wollongong, Australia	Strengths-Model training program (SM)	Mental health professionals from the community and inpatient facilities (76).	2-day workshop developed and facilitate by SM practitioners and a consumer.	Pre-post and 6-month follow up.	Therapeutic Optimism Scale (TOS; M. K. Byrne, Sullivan, & Elsom, 2006), RKI (Bedregal et al., 2006), Recovery Attitudes Questionnaire (RAQ-7; Borkin et al., 2000) Perceived Risk Questionnaire (PRQ; Rundell, 2007) and two developed for this study: Strengths Model Attitudes Questionnaire (SMAQ) Strengths Model Skills Survey (SMSS)	The SM training increased knowledge and attitudes to recovery principles, therapeutic optimism, knowledge of SM principles and improvements to risk attitudes. However, only increasing in risk attitudes were maintained at follow-up.	Sample had already high knowledge and positive attitudes to recovery at baseline. Low frequency and attendance of supervision sessions might have been insufficient to maintain changes over time.	Yes

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
6	Doughty, Tse, Duncan, & McIntyre, 2008	New Zealand	Wellness Recovery Action Plan (WRAP)	Health professionals (75) and consumers (50) Drop-out of 16%	Workshops designed and delivered by people with experience of mental illness. Delivered over one or two full days.	Pre-post	WRAP questionnaire, purpose written for the study. It measures attitudes and knowledge about recovery principles.	Participants increased their knowledge and reported more positive attitudes about recovery after intervention. with a large effect size (d=0.82).	Confounding factors such as participants were convenience sample: possible attraction of individuals motivated to change. No control group. Participants volunteered Post-evaluation immediate after the end of the programme.	Yes
7	Eklund, Gunnarsson, Sandlund, & Leufstadius, 2014	Sweden	Own design course. Workshops focused on meaningful occupations and occupation-based rehabilitation, perceived meaningfulness in everyday occupations and client-centred practice. Strategies to implement these principles were also provided.	Staff members of psychiatric day centres (Intervention, n = 57; control, n = 51)	Implemented by the research team, based on the responses of the staff on a questionnaire of perceived meaningfulness of activities in day centres. Intervention designed specifically for each centre characteristics, and it was delivered and supervised during 14-months.	RCT	Purpose written questionnaire where adherence to intervention and major events affecting day centres routine were reported. Estimation of Perceived Meaningful-ness in Day Centres (EPM-DC; Nilsson, Argentzell, Sandlund, Leufstadius, & Eklund, 2011)	No differences between the intervention group and the comparison group regarding change in perceived meaningfulness of activities. No significant change in adherence and utilisation of rehabilitation principles over time.	The EPM-DC instrument had not been tested for sensitivity to change prior to intervention.	No (no validated recovery outcomes)

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
8	Gilburt, Slade, Bird, Oduola, & Craig, 2013	London, UK	Own design course. Introduction to recovery, Psychosis revisited - a psychosocial approach to recovery (Basset, 2007), assessment and care planning from service users' perspectives; social inclusion/vocational activities from a social work perspective; carer perspectives on recovery; spirituality and reflection on fundamental issues around personal values and beliefs, strengths based approaches, and the role of hope.	Twenty-two mental health teams (Intervention n=342, 300 controls).	Four full-day workshops and an in-team half-day session on supporting recovery. Delivered by persons with both professional expertise and lived experience. Attendance was mandatory.	Mixed methods quasi-experimental, comparing behavioural intent with staff from a third contiguous region	Clinical records reflecting: 1) change in care plan topics resulting from the removal or addition of topics; and 2) change in responsibility of action.	Care plans of patients in the intervention group had significantly more changes and the attributed responsibility for the actions detailed. Nine themes emerged from the qualitative analysis split into two superordinate categories. 'Recovery, individual and practice', and 'Systemic implementation'.	No randomisation, lack of blinding, lack of sensitivity in the care plan audit to different stages of change.	No (no recovery outcomes)
9	Higgins et al., 2012	Dublin, Ireland	Wellness Recovery Action Planning (WRAP, Copeland, 2002).	People with personal experience of mental health problems, practitioners in mental health services and family members/carers of those with mental health problems (n=191 practitioners with or without personal or family experience of mental illness).	Initial 2-day programme (overview of the recovery principles and introduction to developing individual WRAPs). + 5-day programme (train the trainers).	Pre-post	Recovery Knowledge Questionnaire (elaborated for this study), RAQ-7 (Borkin et al., 2000), Beliefs about Recovery and WRAP questionnaire (Doughty et al., 2008).	Increase was statistically significant in the three measures for the 2-day programme, but it was not so for the 5-day programme.	No control group. Participants volunteered Post-evaluation immediate after the end of the programme	No (not only-staff data available, mixed with relatives and service users)

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
10	Killaspy et al., 2017, 2015	England, UK	Rehabilitation Effectiveness for Activities for Life (REAL), training intervention ("GetREAL"; S. Cook et al., 2016; Killaspy et al., 2017).	40 inpatient mental health rehabilitation units (20 intervention, 20 control) randomly selected from a pool of 67 performing below average.	Staff training in three stages: predisposing, enabling, and reinforcing	Single-blind, two-arm, cluster-randomised controlled trial	Patients: Degree of activity engagement, social functioning, length of current admission, proportion of patients per unit who were either discharged or ready for discharge. Staff: attitudes towards patients' progress, service quality.	Training did not increase patients' engagement in activities at 12 months follow-up.	The authors provide explanations for the lack of effect: very few units made spontaneous contact with the predisposing teams, "turbulence" in the NHS, patients too severely impaired to benefit from the intervention and patient turnover.	Yes
11	Leamy et al., 2014	London, UK	REFOCUS team-level intervention	Mental health staff (24), trainers (3), focus groups (4) and written trainer reports (28).	Qualitative analysis of the RCT reported in Slade et al. (2015)	Qualitative	Individual face-to-face interviews with a specific guide, focus group topic guide, training reports that covered the results of REFOCUS intervention.	Organisational readiness for change and effectiveness of the training were the factors with stronger influence in enhancing implementation of recovery principles in community mental health teams.	Purposive selected sample. Potentially recall bias may affect accuracy and reliability. Inability to use a programme evaluation approach.	No (qualitative)

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
12	Lean et al., 2015	London, UK	Rehabilitation Effectiveness for Activities for Life (REAL), training intervention ("GetREAL"; S. Cook et al., 2016).	Staff of 10 units that received the GetREAL intervention (59)	Qualitative analysis of the RCT reported in Killaspy et al. (2015)	Qualitative	Focus groups interviews, recording and thematic analysis of transcriptions.	Staff accepted the intervention but found the skills gaining limited, not maintaining it after intervention ended. Main reasons were economic and organisational factors, and limitations of the intervention itself.	Not random selection of the sample, recall bias, some staff could not attend focus groups, absence of external stakeholders.	No (qualitative)
13	Meehan & Glover, 2009	Queensland, Australia	Own design course. "Building structure" (introduction to the principles of recovery-oriented practice). "New ways of relating to people with mental illness". "Doing things differently".	Mental health staff (n=247).	The training program was designed and delivered by an educator with lived experience. Delivered one day each month over a period of 3 months.	Non-equivalent control group. Measures: pre-training, immediately post-training, and at 6 months post-training.	Recovery Knowledge Inventory (Bedregal et al., 2006).	Those receiving training demonstrated significant gains in knowledge at follow-up.	No randomisation.	Yes

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
14	Peebles et al., 2009	Georgia, USA	Project Georgia Recovery based Educational Approach to Treatment (GREAT) based on Substance Abuse and Mental Health Services Administration (2006) model of recovery.	Psychiatrists and psychologists (intervention, n= 46; control, n=34)	Delivered by Certified Peer Specialists in a 2-day workshop. Educational techniques included a role-playing, a presentation of a personal recovery story by a consumer, didactic presentations, audience question-and-answer sessions, and prepared discussion questions intended to enhance audience participation.	Non-equivalent control group. Pre/Post-training	Project GREAT Recovery Knowledge Measure. Recovery Knowledge Inventory (Bedregal et al., 2006). Recovery Attitudinal Pre-Post Survey (J. A. Cook, Jonikas, & Razzano, 1995)	Intervention was successful in promoting enhanced knowledge of the recovery model and partially improved recovery-based attitudes.	No randomisation. No measurement of changes in practice.	Yes
15	Pollard, Gelbard, Levy, & Gelkopf, 2008	Pardessia, Israel	Own design course. Training on psychiatric rehabilitation principles for treating hospitalized individuals with mental illness. Basic concepts of recovery, the importance of hope, client-cantered approach, use of evidence-based practices, community services.	Mental health workers from inpatient hospitalization units (Intervention n=28, controls n=27).	Six 2-hour sessions and six 4-hour community visits.	RCT (Control group = wait-list)	Practitioners' Beliefs, Goals, and Practices in Psychiatric Rehabilitation Questionnaire (BGPPR; Casper, Oursler, Schmidt, & Gill, 2002).	The intervention group showed higher increased awareness of evidence-based practices and awareness that persons with mental illness can live in the community. A psychiatric rehabilitation forum was set up in the hospital following the training program.	Provider changes to consumer outcomes were not measured. No measure of effectiveness of the forum.	Yes

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
16	Repique, Vernig, Lowe, Thompson, & Yap, 2016	Philadelphia, USA	SAMHSA intervention for acute care settings (SAMHSA, 2010)	Psychiatric-mental health registered nurses from acute hospitalisation unit (32).	1-hour intervention trough webinar and delivered by interdisciplinary experts	Pre-post	RKI (Bedregal et al., 2006), restraint Rates	No significant differences in recovery knowledge after intervention. No restraint rate reduction able to attribute to intervention.	Several restraint prevention initiatives were underway confounding results, sample not representative, selection bias, 25% lost to follow up, short intervention, format of the program as webinar	Yes
17	Salgado, Deane, Crowe, & Oades, 2010	New South Wales, Australia	Collaborative Recovery Training Program (Oades, Deane, Crowe, Lambert, Kavanagh, Lloyd, et al., 2005)	Mental health workers (n=103)	2 days of training in recovery concepts and skills supporting consumers' abilities to set, pursue and attain personal goals.	Pre-post. Divided into (high dispositional hope versus low).	RAQ-7 (Borkin et al., 2000), dispositional Hope Scale (Snyder et al., 1996), Staff Attitudes to Recovery Scale (Crowe et al., 2006), Therapeutic Optimism Scale (Snyder et al., 1996), Recovery Knowledge Inventory (Bedregal et al., 2006)	Training improved providers' recovery knowledge, attitudes, hopefulness and optimism. Providers with both high and low dispositional hope achieved similar gains.	No control group. Provider behaviour, or link observed provider changes to consumer outcomes were not measured.	Yes

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
18	Slade et al., 2015	England	REFOCUS team-level intervention (Bird, Leamy, Boutillier, Williams, & Slade, 2011)	27 teams of community mental health centers (experimental, n=14, control, n=13). No team lost to follow up	1-year intervention following the REFOCUS model. The intervention involves the whole team in meetings and training (one trainer of professional background and one with service-use background)	RCT	RKI (Bedregal et al., 2006), Mental Illness: Clinicians' Attitudes questionnaire (MICA; Gabbidon et al., 2013; Kassam, Glozier, Leese, Henderson, & Thornicroft, 2010) and two non-standardised: Participation and Recovery Practice Scales	No significant changes in staff knowledge, skills or attitudes trough recovery-promotion principles. Scores were significantly higher in recovery knowledge and skills for staff in high-participation teams than for those in low-participation teams.	Social desirability bias, no stratification by team type, only the team coordinators were asked for measurement, absence of a pilot study to inform implementation.	Yes

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
19	Strating, Broer, van Rooijen, Bal, & Nieboer, 2012	Rotterdam, The Netherlands	Breakthrough method (Mittman, 2004)	25 teams from inpatient mental health care organizations	Theme discussion meetings. National conferences Plan-Do-Study-Act cycles Over 1-year period.	Pre-post.	Recovery-Oriented Practices Index (ROPI) (Mancini, 2008; Mancini & Finnerty, 2005)	Significant improvement (but weakly higher) in ROPI index. Higher scores indicated that health care services were oriented towards recovery, based on client potential and strengths, stimulated social participation and integration, and encouraged clients to take control	Only the team coordinators ("programme management") were asked for measurement. Lack of control sites.	Yes

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
20	Tsai, Salyers, & Lobb, 2010	Indiana, USA.	General: SAMHSA modules for reducing restraint measures. Specific: IMR program, IDDT program, WRAP program, the Matrix model	700 staff members from two state hospitals invited to participate (61.55% response rate, n = 184 at 1-year follow-up)	Not provided by the authors	Retrospective	Personal Optimism Through the Life Orientation Test-Revised (Beck, Steer, Kovacs, & Garrison, 1985), Consumer Optimism Scale (Grusky, Tierney, & Spanish, 1989) and Agency-Level Beliefs through the Recovery Self-Assessment (RSA; O'Connell, Tondora, Croog, Evans, & Davidson, 2005).	Only about 20-25% of staff had specific recovery training. Staff who received specific training had greater increase in agency recovery attitudes. No significant difference in consumer optimism over time.	Retrospective Only about 20-25% of staff had specific recovery training. A small group of participants that reported no training limits ability to detect differences between this group and the others.	No (no pre-post scores)

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
21	Tsai, Salyers, & McGuire, 2011	Indiana, USA	Illness Management and Recovery program (IMR; Mueser et al., 2006; Salyers, Godfrey et al., 2009) and other recovery programs (IDDT, WRAP, ACT)	455 staff members from four mental health centers invited to participate, response rate 70% No training (144) IMR and other recovery trainings (178)	Two-day IMR training and one-day IMR case consultation workshop.	Cross-sectional	Same as Tsai et al. (2010).	Staff who received more recovery training reported higher consumer optimism scores and greater agency attention to consumers' life goals. More recovery trainings attended implied higher scores. No significant differences were found between IMR training and other recovery interventions.	Retrospective, limited information available on the different types of recovery training outside of the IMR, possibility of selection bias.	No
22	Way, Stone, Schwager, Wagoner, & Bassman, 2002	New York State, USA	New York State Office of Mental Health's Core Curriculum training program	Staff from any discipline which work in inpatient units (n=86 in WAS scale, n=77 in WES scale)	Three full day program designed and led by former recipients of inpatient services	Pre-post	Ward Atmosphere Scale (WAS, Moos, 1996) Work Environment Scale (WES, Moos, 1994)	Significant improvements in team functioning, belief in the recovery of recipients of inpatient care, and in cultural competence levels	None as stated by the authors.	No (stigma outcomes)

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
23	Williams et al., 2016	University of Wollongong, Australia	Collaborative Recovery Model Training (Oades, Deane, Crowe, Lambert, Kavanagh, & Lloyd, 2005).	Mental health workers from community-managed organisations (Experimental group n=79, control group n=67)	Three full day workshops by professional educators.	Cluster-RCT	Four items of Autonomous motivation, 5-point Likert scale. One item of plans to implement purposeful action aligned to recovery principles.	Significant increase in integrated motivation and plans to implement to the workplace initiative in the experimental group.	No blinding of participants. Data loss due to attrition.	No (two active arms)
24	Wilrycx, Croon, van den Broek, & van Nieuwenhuizen, 2012	Breda, The Netherlands	Own design course. Recovery and recovery-oriented care project. Recovery principles, recovery process of patients with long-term psychiatric problems, implications of the relationship with mental health professionals.	Mental health multidisciplinary workers (n=210)	Two modules of 2-day sessions, separated by one year.	Quasi-experimental (two-group multiple intervention interrupted time-series).	RKI (Bedregal et al., 2006), RAQ-7 (Borkin et al., 2000).	Mental health care workers have more positive attitudes towards recovery after completing two training sessions. Second training session had a negative effect on knowledge of recovery.	No reference data for comparison purposes with the study design. No control group. Long time between the two modules training sessions.	Yes
25	Young et al., 2005	Arizona and Colorado, United States.	Own design course. Staff Supporting Skills for Self-Help.	Clinicians from organizations that provide case management, psychotherapy and housing (Intervention n=151, control n=118)	Six components, each one implemented during one months over the course of one year. Provided both by educators and specific components by consumers.	Mixed methods, quasi-experimental design, one organization in each state was assigned to the intervention, remaining ones as controls.	Competency Assessment Instrument (Chinman et al., 2003).	Intervention group showed greater improvements in competencies critical for client-cantered care. In interviews, clinicians stated that they were providing more recovery-oriented services.	No quantification of service use. No randomisation. Findings could have resulted from clinicians being predisposed to the care model. No measure of client outcomes.	Yes?

	Reference	Project, region and/or country	Training Curriculum	Training recipients	Delivery format and duration of training	Evaluation design	Recovery-related assessment instruments	Results	Limitations	Included in meta-analysis (reason for exclusion)
26	Zuaboni, Hahn, Wolfensberger, Schwarze, & Richter, 2017	Zurich, Switzerland	REFOCUS (Bird et al., 2011) training material.	43 Mental Health Nurses and their patients in the intervention group and 19 in the control group.	Five half-day training sessions.	Quasi-experimental (Controlled Trial)	RSA (O'Connell et al., 2005)	No statistically significant effects were found, between the experimental conditions. Reasons	The authors argue that study procedures were seen as being too ambitious to be coordinated within the stressful daily routines on the wards.	Yes

Note. RCT, Randomised Controlled Trial

Study characteristics

Table 1 offers an overview of the studies included in the systematic review. In the results section, we provide a summary of each project and the type of training activities that were carried out.

The majority of studies took place in Europe (mainly United Kingdom), Oceania (Australia and New Zealand) and The United States. Other countries involved were Israel and Canada. Only one study included undergraduate students, and six studies were carried out in the context of mental health inpatient facilities. Sample sizes were diverse, ranging from 12 to 342 participants per group. Regarding the training curriculum, nine studies used their own design course; the majority used short duration workshops (most of them lasting two to four days). Regarding outcomes, most studies reported quantitative measures, while four exclusively included qualitative assessments.

Risk of bias in individual studies (QATQS)

Of the 26 studies included in the systematic review, four were qualitative. Of the remaining 22, three (14%) were considered strong, six (27%) moderate and 13 (59%) weak. The greatest weaknesses were associated to blinding (it was considered that outcome assessors were aware of the intervention status of the participants and in fifteen studies the study participants were aware of the research questions) followed by attrition and confounders control (considered to be high and nil in six studies respectively). In contrast, all studies used measures with adequate properties and most, except for three, were designed with some type of control, at least through cohorts. Table 2 shows all the outcomes of the QATQS process.

Table 2
Quality Assessment Tool for Quantitative Studies scoring assessment of intervention studies

Reference	Selection bias	Design	Confounders	Blinding	Data	Attrition/Resp	Global
1. Bhanbhro et al., 2016	Q	Q	Q	Q	Q	Q	Q
2. Byrne, Happell, Welch, & Moxham, 2013	Q	Q	Q	Q	Q	Q	Q
3. Chen, Krupa, Lysaght, McCay, & Piat, 2014	3	2	3	2	1	3	3
4. Crowe, Deane, Oades, Caputi, & Morland, 2006	2	2	2	3	1	3	3
5. Deane, Goff, Pullman, Sommer, & Lim, 2018	2	2	2	3	1	2	2
6. Doughty, Tse, Duncan, & McIntyre, 2008	2	2	2	3	1	1	2
7. Eklund, Gunnarsson, Sandlund, & Leufstadius, 2014	2	1	1	2	1	2	1
8. Gilburt, Slade, Bird, Oduola, & Craig, 2013	1	2	3	3	1	3	3
9. Higgins et al., 2012	2	2	3	3	1	2	3
10. Killaspy et al., 2015	1	1	1	1	1	1	1
11. Leamy et al., 2014	Q	Q	Q	Q	Q	Q	Q
12. Lean et al., 2015	Q	Q	Q	Q	Q	Q	Q
13. Meehan & Glover, 2009	2	2	2	2	1	3	2
14. Peebles et al., 2009	2	1	3	3	1	1	3
15. Pollard, Gelbard, Levy, & Gelkopf, 2008	3	2	2	3	1	2	3
16. Repique, Vernig, Lowe, Thompson, & Yap, 2016	2	2	3	3	1	1	3
17. Salgado, Deane, Crowe, & Oades, 2010	2	1	1	3	1	1	2
18. Slade et al., 2015	1	2	2	2	2	1	1
19. Strating et al., 2012	3	3	1	2	1	2	3
20. Tsai, Salyers, & Lobb, 2010	2	3	1	3	1	2	3
21. Tsai, Salyers, & McGuire, 2011	2	3	2	3	1	2	3
22. Way, Stone, Schwager, Wagoner, & Bassman, 2002	2	2	3	3	1	2	3
23. Williams et al., 2016	2	2	2	2	1	3	2
24. Wilrycx, Croon, van den Broek, & van Nieuwenhuizen,	2	2	2	3	1	3	3
25. Young et al., 2005	3	2	1	3	1	2	3
26. Zuaboni, Hahn, Wolfensberger, Schwarze, & Richter, 2017	2	1	2	3	1	2	2

Note. Q, qualitative study.

Historical overview

The recovery movement was linked to the psychiatric rehabilitation movement, which originated within the deinstitutionalization process. One of the main differences is probably the recovery's intention of changing services where the rehabilitation philosophy had not had any influence, including inpatient facilities (Singh, Barber, & Sant, 2016). The recovery movement was deeply influenced by community rehabilitation ideas present in former movements such as Assertive Community Treatment, that also gave importance to the training of professionals from its foundation (Felton, Wallach, & Gallo, 1974). Indeed, slightly before the recovery movement started, J. A. Cook, Jonikas, & Razzano (J. A. Cook et al., 1995) published a randomized evaluation of training activities for mental health service providers carried out by consumers or non-consumers.

The first recovery project which published specific information about practitioner training was the *New York State Office of Mental Health's Core Curriculum* training program (Way et al., 2002). The pre-post evaluation of this programme included almost 4000 practitioners. Results showed statistically significant increases in communication and interaction, respect for recipients of inpatient care, and increases in cultural competence levels.

Young et al. (2005) presented a consumer-led *Staff Supporting Skills for Self-Help* intervention. The intervention included education, clinician-client dialogues, ongoing technical assistance, and support from self-help. They evaluated the intervention's impact on clinicians' competencies, care processes, and the formation of mutual support groups through a one-year randomised controlled trial. Results showed statistically significant improvements in education regarding care, rehabilitation methods, natural support, holistic approaches, teamwork, overall competency, and recovery orientation for participants who received the intervention.

Crowe, Deane, Oades, Caputi, & Morland (2006) introduced the concepts of hopefulness and optimism to this field of research. They examined the impact of a two-day recovery-based training program based on the Collaborative Recovery Model (Oades, Deane, Crowe, Lambert, Kavanagh, & Lloyd, 2005) at the University of Wollongong, Australia. Using a pre-post-training design, they found improvements in staff attitudes and hopefulness as well as an increase in knowledge regarding recovery and beliefs on the effectiveness of its components.

Doughty, Tse, Duncan, & McIntyre (2008) implemented a Wellness Recovery Action Plan (WRAP; Copeland, 2002) workshop in New Zealand. WRAP is a program designed and delivered by consumers to help both trained consumers (peer support workers) and practitioners to assist people in managing ill health. They examined the impact of a 2-day workshop using a pre-post design in a sample that mixed mental health professionals and consumers. Positive changes were found in knowledge and attitudes towards recovery principles. Participants also declared that the workshops were useful for their support work. Afterwards, A. Higgins (2012) implemented the same program in an Irish population also evaluating it through a pre-post design. They compared the differential effectiveness of a 2-day or a 5-day program in another mixed sample of mental health consumers and practitioners, replicating previous positive results for both modalities, and showing no different results between them.

Pollard, Gelbard, Levy, & Gelkopf (2008) created their own workshop to deliver the principles of recovery in an inpatient setting in Israel. The evaluation of this project was done using a Randomised Clinical Trial (RCT). The training significantly increased positive beliefs about recovery and knowledge of evidence-based practice treatments within a hospitalization context.

Meehan & Glover (2009) delivered a consumer-led recovery-training program in Queensland (Australia). This study employed a non-equivalent control group design. Three health service districts/regions from within were selected for training, whilst a fourth district was used as a comparison site. The 3-day workshop focused on knowledge and training of recovery-oriented clinician skills. The intervention group showed positive changes in the understanding of recovery principles and they were maintained at the six-month follow-up.

Psychiatry departments in the state of Georgia in the United States made considerable efforts to promote a holistic change to their institution based on recovery principles and created the Georgia Recovery-based Educational Approach to Treatment (GREAT; Ahmed, Serdarevic, Mabe, & Buckley, 2013). This project is based on the Substance Abuse and Mental Health Services Administration recovery concept (SAMSHA, 2012), articulated in the principles of empowerment, hope, holistic care and support and emphasizes the importance of a certified peer specialist in joining departments in order to facilitate change (Mabe, Ahmed, Duncan, Fenley, & Buckley, 2014). Peebles et al. (2009) evaluated the effectiveness of the program, delivered in short workshops. They used a non-equivalent control group, pre-post-training design. Their results showed statistically significant improvements in knowledge and partial changes to positive attitudes to recovery. However, they could not control its translation to practice.

Using a pre-post design; Salgado, Deane, Crowe, & Oades (2010) found improvements in recovery knowledge, attitudes, hopefulness and optimism after a two-day training programme carried out in New South Wales, Australia. They also found that attitudinal improvements following formal recovery training were not dependent on baseline levels of dispositional hope.

Tsai, Salyers, & Lobb (2010) conducted a quasi-experimental longitudinal study in two hospitals in the United States comparing specific/practical skills training with general/inspirational training and a control condition. An increase in agency recovery attitudes were found for staff who received specific/practical training than for staff who only received general/inspirational training or who did not receive any training. They also found a dose-dependent effect with higher effects for professionals who received more hours of training. The same research group (Tsai et al., 2011) carried out a cross-sectional retrospective study in four community mental health centres, confirming the previously proposed dose-dependent effect. Recovery-related training amount was related to higher scores on personal optimism, consumer optimism, and agency recovery orientation towards consumer life goals.

Strating, Broer, van Rooijen, Bal, & Nieboer (2012) was conducted in The Netherlands which involved a first team-level multiple case study of Recovery training. Their pre-post study focused on long-term mental health care settings. They explored the effectiveness of 'quality improvement collaborative groups' in terms of objective outcome indicators and the impact of changes as perceived by team members, as well as the associations between collaborative-organizational- and team-level factors and perceived effectiveness. Their results indicated that innovative attributes, appropriate measures, usable data collection tools and an innovative team culture could explain variations in perceived effectiveness. An additional study also conducted in The Netherlands investigated the effectiveness of a recovery-oriented training program on knowledge and attitudes (Wilrycx et al., 2012). This quasi-experimental study demonstrated the effectiveness of intensive sessions separated in time using a complex implementation and follow-up system.

A King's College-based group has carried out a series of evaluations of recovery-orientated practice adding for the first time behavioural intent measures. After a first approximation (Gilburt et al., 2013), they implemented a large-scale RCT consisting of a 1-year team-level intervention targeting staff behaviour to increase the focus on values, preferences, strengths and goals of patients with psychosis (REFOCUS; Slade et al., 2015). The authors did not find statistically significant differences between teams in their patients' recovery process, although high participation was related to higher staff-rated scores for recovery-promotion behaviour change and patient-rated interpersonal recovery. They also found a saving of £1062 for each patient treated within teams that had received the intervention. A qualitative evaluation on the possible implementation barriers of the same project (Leamy et al., 2014) yielded two main themes: 'Organisational readiness for change' and 'Training effectiveness'. 'Organisational readiness' was analysed at different ecological levels, evidencing barriers such as lack of time or heterogeneous leadership, perception by professionals that what they do is already recovery-based or insufficient preparation for participation. Training effectiveness included engagement strategies (including validation of previous knowledge), delivery style (with preference for practice-based activities) and modelling recovery principles (use of strengths-based approaches within the activities). The REFOCUS manual has influenced projects elsewhere. A project in Switzerland made an adaptation of the manual to implement a program delivered to mental health nurses in the context of acute psychiatric units (Zuaboni et al., 2017). The authors developed specific training sessions to enhance practical implementation of recovery principles during a period of nine months. However, they did not find statistically significant differences within the control group. Among the limitations of the study, the authors pointed out the need of involving

the full multidisciplinary team in training and produce organisational changes to ensure implementation of recovery-based practice.

Similarly, in England a national research project carried out in inpatient facilities developed the Rehabilitation Effectiveness for Activities for Life consumer-led program (REAL; S. Cook et al., 2016) aimed at improving the willingness of professionals to promote change in the users' engagement in structured activities. The training is focused on users with complex and severe mental health problems. The cluster-randomised controlled trial evaluation assessed change within a large-scale 1-year team-level intervention (GetREAL), which also evaluated direct costs and cost-effectiveness of care (study protocol in Killaspy et al., 2013). After the intervention, the users engagement in activities did not differ in comparison with a control group. In addition, researchers did not investigate whether the intervention caused behavioural changes in the staff that belonged to the intervention group (Killaspy et al., 2015). A further qualitative analysis (Lean et al., 2015) showed that despite the fact that participating staff received the intervention with enthusiasm, the changes it promoted could not be maintained after it ended. Reasons for this reversion to the previous state were lack of resources due to the economic recession, insufficient engagement with the intervention team and organisational limitations such as lack of senior staff support. Later analyses (Bhanbhro et al., 2016) explored possible mechanisms of maintaining long-term change in recovery-based practice. The mechanisms of change identified involved developing action plans collaboratively with staff and users, frequent group supervisions, implementing recovery-based plans in ongoing programmes in organisations and direct support of management and organisation in implementing recovery changes. All these measures, the authors argue, would assist staff in changing their practices.

A recent study focused on inpatient nurses (Repique et al., 2016), reported a mixed methods (pre-post questionnaires plus focus groups analysed through thematic analysis) evaluation of a webinar-based education programme. No differences were found in pre-post recovery knowledge or reduced restraint rates. The authors discuss the possibility that self-selection bias might have influenced the results as high levels of knowledge were found at baseline.

Using a cluster-randomised controlled trial, Williams et al. (2016) analyse in depth the possible influence that professionals' autonomy perception has on recovery values-based training. They hypothesise that staff subject to change would be more motivated to implement changes if trainings targeted their core professional values, thus introjecting the recovery philosophy. Results demonstrated that a single structured values clarification exercise promoted integrated motivation for changed practice and resulted in increased implementation planning.

Recent studies have included supervision sessions as a complement to workshops of short duration as a means of maintaining the changes that have been achieved and ensuring ensuring the recovery skills are put into practice. Deane, Goff, Pullman, Sommer, & Lim (2018) carried out a pre-post-repeated measures study based on a strengths-model based intervention. Their results at post-workshops evidenced gains in recovery and attitudes. However, almost none of these results were sustained at follow-up after supervision groups, with the exception of an improvement in willingness to assist consumers to pursue goals that require in positive risk taking. Overall, there was no improvement in recovery-based skills at follow-up. The authors suggested preliminary evidence of positive dose-dependent effects of gaining skills with attendance to supervision groups. However, one of their main limitations was the overall infrequent

number of supervision sessions attended by practitioners. The authors suggest strategies to increase the retention of practitioners in the supervision sessions.

To our knowledge, the most recent and ongoing trial is held in Australia, known as the Principles Unite Local Services Assisting Recovery (PULSAR) study, with a version for primary care settings (Enticott et al., 2016) and one for community mental health centres (Shawyer et al., 2017). This is a 4-year long project, also inspired by the REFOCUS British intervention (Slade et al., 2015), aimed at implementing recovery-based practice in mental health specialised staff. The training consists of 2-day workshops addressed to staff and team manager levels. In addition, it includes voluntary monthly supervision sessions to maintain expected changes. The evaluation design is a cluster randomized controlled trial. The main outcomes are measured in consumers, including degree of participation and personal recovery. Planned outcomes in staff and organisations are participation levels, intervention dosage and economic costs. Qualitative measures are also considered, which will explore from the intervention both staff and consumer views, as well as possible moderators of its effectiveness.

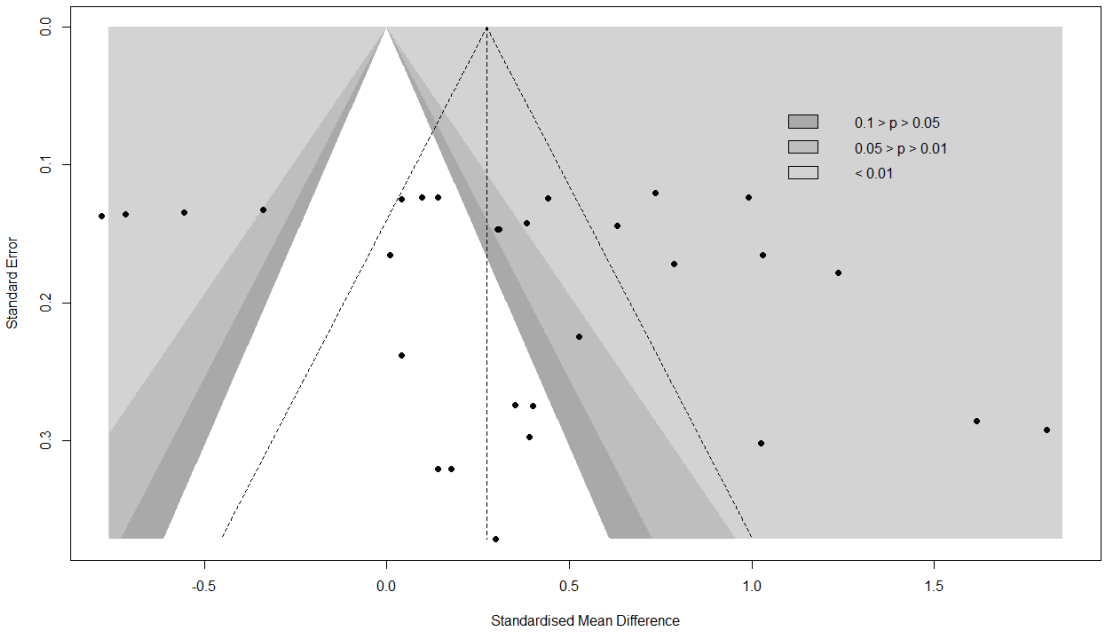
Synthesis of results (meta-analysis)

Risk of reporting bias

Figure 2 shows a Funnel plot of the included outcomes. Overall, there is no clear evidence of reporting bias. With the exception of two outlier outcomes, by observation of the funnel plot did not show a clear asymmetry. Begg and Mazumdar's (1994) tests showed no statistically significant asymmetry (z =.825, p = .409).

Fig. 2

Funnel plot of included outcomes



Change in knowledge of recovery principles

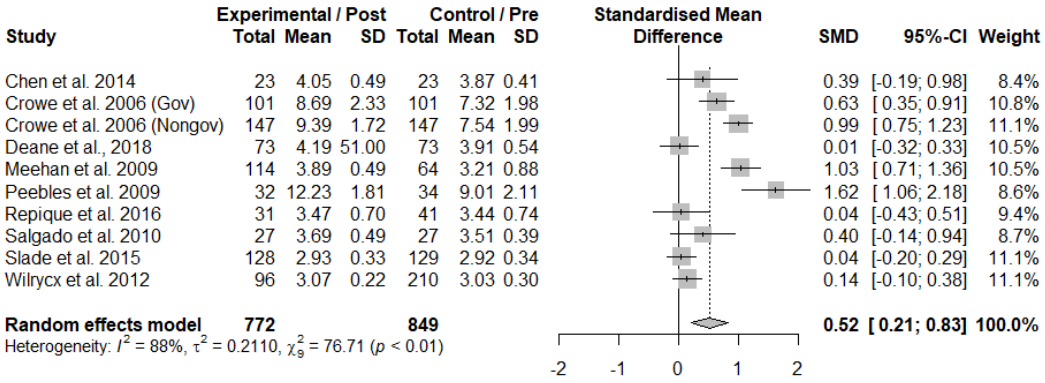
Recovery training appears to have an impact upon knowledge, as shown in figure 3 below. There was an overall moderate effect size of 0.52 (95% *CI*= 0.21 – 0.83, p=.001), with all studies showing SMD values over zero, although the confidence interval of some did, which suggests that knowledge of recovery increased after interventions. Heterogeneity showed statistical significance (I^2 = 88%, τ^2=.211, χ^2=76.71, p<.01).

Moderator analyses

Studies' publication year (Q(1) = 12.86, p = .0003) and gender proportion (Q(1) = 8.46, p = .0036) moderated results. Publications that have been published more recently and with more female participation showed lower intervention effects.

Fig. 3

Forest plot of change in knowledge of recovery principles



Change in recovery attitudes

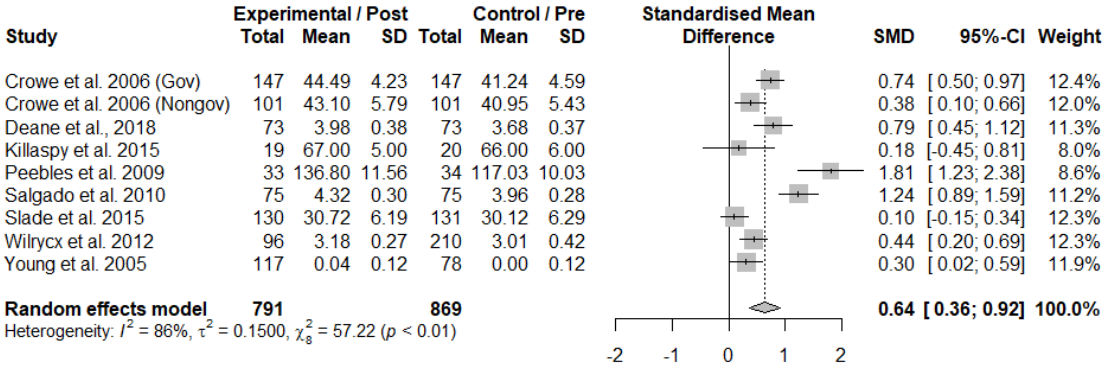
Regarding attitudes, the influence of interventions was higher, as shown in figure 4 below. In this case, the effect size was 0.64 (95% *CI*= 0.36, 0.92, p<.0001), suggesting that attitudes to recovery improved after interventions. Again, heterogeneity showed statistical significance (I^2 = 86%, τ^2=.150, χ^2=57.22, p<.01).

Moderator analyses

The time from pre to post (Q(1) = 4.36, p = .037), gender proportion (Q(1) = 9.79, p = .002) and mean age (Q(1) = 5.65, p = .018) moderated the results. Studies with longer assessment latency, a higher proportion of females and older participants, showed lower effects in attitudinal change.

Fig. 4

Forest plot of change in recovery attitudes



Change in recovery-based practice

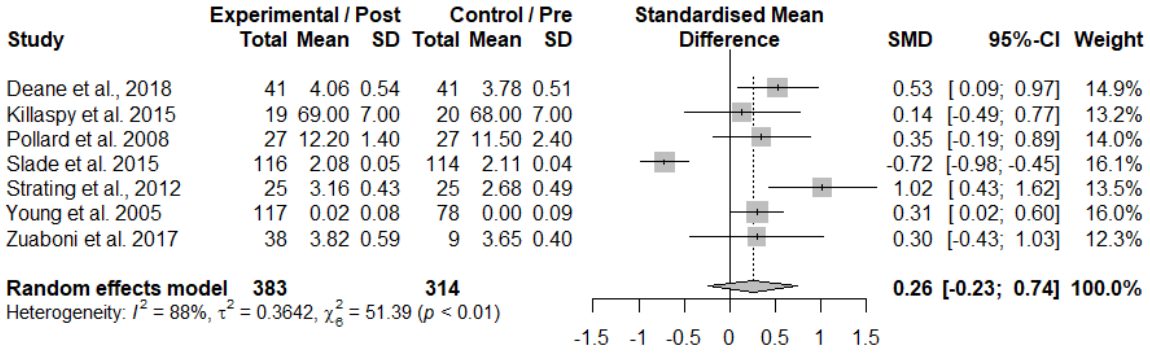
Interventions did not have an impact on practice, as shown in figure 5 below. The effect size was 0.26 (95% *CI*= -0.23, 0.74, *p*=.304) which was not statistically significant. In this analysis, heterogeneity also showed statistical significance (I^2 = 88%, τ^2=.364, χ^2=51.39, *p*<.01).

Moderator analyses

Change in practice levels were predicted by the methodological quality of the studies ($Q(1) = 4.39$, $p = .036$). Quality correlated negatively with intervention effects.

Fig. 5

Forest plot of change in recovery-based practice



Discussion

After several decades of influencing public mental health policies (Anthony, 1993; Jacobson & Curtis, 2000; Slade et al., 2014), the implementation of recovery-based services continues to be a pending issue in many territories and at certain care levels, especially hospital-based facilities (Singh et al., 2016). One of the main reasons for these obstacles is the lack of recovery-related concepts in the training of professionals (Silverstein & Bellack, 2008). To reverse this situation, various training programmes have been carried out. In this work, we have reviewed articles carrying out assessments of these training activities. We found 26 studies and were able to include 14 of them in our meta-analytic calculations.

Qualitative results show an evolution of the literature focusing towards better quality designs and on aspects related to the impact and maintenance of the effects of these training activities. Regarding measuring instruments and strategies, an evolution is apparent between studies that have exclusively focused on knowledge and attitudes to more ambitious designs in which the impact of training activities in real practice is measured, not without great difficulties. In this sense, great value is given to the organisational changes necessary to carry out changes in the direction proposed by the recovery movement. Changing beliefs and attitudes can be a sterile effort if the organisational structure does not allow a real change of practices. Organisational barriers, but also opportunities, have been a recurrent issue in qualitative studies nested to two main randomised trials analysed in this review, namely the REFOCUS (Leamy et al., 2014) and GetREAL (Bhanbhro et al., 2016; Lean et al., 2015) projects. Tensions between between ‘top down’ administrative-directed change and ‘bottom up’ or practitioner and team-level change are discussed in these secondary qualitative analyses. In the mentioned trials, although the intention was to carry out organisational changes from the bottom-up

(Leamy et al., 2014), it is evident that practitioners involved had serious doubts that there was institutional commitment to carry out real changes. This connects with other concepts that have been addressed at the individual level such as hopefulness and autonomy. Some of these projects try to systematise and implement on a large-scale basis changes that first occurred spontaneously in an environment of consumer and professional militancy. As it happened with the achievements of other social movements, systematizing bottom-up processes, even when considering idiosyncrasies, implies some contradictions such as the difficulty to emulate the intrinsic motivation that the original movement had obtained. This seems to occur in a context in which institutions send contradictory messages. On the one hand, these institutions allocate funds to projects of this type, but on the other, they do not give real support so that changes can occur and be maintained.

Quantitative results, quite conditioned by the heterogeneity of the studies analysed, show no evidence of reporting bias and low to moderate effect sizes. Statistically significant results with moderate effect sizes were found for knowledge and attitudes while no statistically significant results and a low effect size were found for practise. These results are in line with what was found in the qualitative synthesis. From the staff perspective, it seems clear that the integration of knowledge and attitudes based on the recovery movement claims could be considered an essential component within the general principles and values of any mental health professional. Relatedly, adopting recovery-based attitudes may lead to therapeutic optimism (Deane et al., 2018) and might decrease unmet needs for service users (Slade et al., 2015). However, it can be seen that, although it is relatively easy to have an impact on certain prejudices and attitudes, it is not so easy for organizational changes to be made so that practices can be developed in a different way.

Intervention effects were moderated by publication year (knowledge), the proportion of female participants (knowledge and attitudes), assessment latency (attitudes), age (attitudes) and the methodological quality of the studies (practices). It might seem logical that studies that are more recent (focused on more concrete aspects, as we have seen), with higher quality in their designs including longer time from pre to post, and those with older participants have smaller effects. The first studies, focused on knowledge and with short-term follow-ups in many cases, showed an impact that is difficult to find in the large randomized trials carried out recently in which an attempt is made to measure impact on practice. Regarding the smaller impacts on staff with older ages, it may be that, due to more professional experience, they have more positive attitudes towards mental health patients, so changes are smaller, as they start from higher levels of recovery-based attitudes. The lower change found within female participants was consistent within two of the outcomes analysed. This result requires a more detailed analysis considering gender differences in power imbalance (women are less likely to be in positions of responsibility which makes it very difficult to differentiate if the effect was due to differences in gender or to institutional power imbalances). Similar gender differences have been found in outcomes such as procedural justice (Caldwell, Liu, Fedor, & Herold, 2009; Sweeney & Mcfarlin, 1997) and corporate value change (Hebson & Cox, 2011), implying that what sometimes is attributed to gender differences sometimes is in reality related to power imbalances. It is also possible that females feel more connected from the beginning with the concepts of recovery and, therefore, changes are smaller since they begin having a higher level.

Limitations of the review

There was a high degree of methodological heterogeneity amongst the included studies in terms of intervention format, practitioners' features, assessment and study

characteristics. An example of this heterogeneity can be seen in the duration of the interventions, as some were conducted over an hour whereas other were extended interventions over a period of a year. Additionally, we were unable to select high quality studies for this review to strengthen evidence due to their reduced availability (only 3 from 14 studies included in the meta-analysis could be considered an RCT). Regarding the measurement instruments, the major limitation was that most of them included only self-reported measures, which may have led to social desirability bias confirming the hypothesis of the study (Robins, Fraley & Krueger, 2007). We attempted to control the risk of bias of this unobserved heterogeneity by performing random effect analyses and meta-regressions with related moderators, such as the quality of the study as assessed with the QATQS, and study design type, if the number of studies allowed for it. However, the number of analyses undertaken was limited due to the small amount of studies available. For instance, we could not examine the effect of study design in two of our three main outcomes or explore differences between the practitioner's professional backgrounds. In addition, few studies have collected follow-up data, which could have allowed us to investigate longer-term effects of the educational interventions. Therefore, research in this field requires RCTs with longer follow-ups in order to check effectivity and the real maintenance of educational effects of current interventions. At another level of analysis, we found it paradoxical that in the context of a reform that aims to give more prominence to service users, the latter hardly take part in the design, implementation and evaluation of these activities. Although it is true that some of the trainers and participants (peer-support workers) of these courses had lived experience of mental suffering, in the reviewed studies, the supposed beneficiaries of more horizontal interventions had mostly a passive role. In this sense, another limitation is that we did not include service users' outcomes in the analysis due to the rare inclusion of these variables in educational

evaluations. This is a significant limitation if we follow a recovery orientation, as the active involvement of users is a key factor of the recovery movement. Therefore, future systematic studies should assess the efficacy of this educational interventions on service-users' outcomes.

Conclusions and Implications for Research

Recovery training activities seem to have a clear but moderate impact on the beliefs and attitudes of mental health professionals. Impact on practice is, however, not clear. Qualitative evidence seems to point in the direction of organisational obstacles preventing these changes. We believe that the use of mixed methods is essential to continue deepening into the possibilities that change can have on recovery training activities. Future studies should also consider the participation of service users, not only as trainers or peer-support workers, but by also involving the people who will receive the recovery interventions in the design and implementation of trials. Funding research agencies should also prioritise studies focusing on maintaining long-term changes by targeting organisational transformations and direct managerial support.

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Author Contributions

FJEO designed the study, wrote the protocol, conducted literature searches and provided summaries of research studies. HGM extracted data from individual studies to carry the meta-analytic calculations. Both authors assessed risk of bias in individual studies. Author FJEO conducted the statistical analysis. FJEO wrote the first draft of the manuscript. Both authors contributed to and have approved the final manuscript.

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Availability of Data and Materials

The meta-analysis database from this project will be public under the same document object identifier as the article as supplemental material.

Conflict of interest

All authors declare that they have no conflicts of interest related to the present study.

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