National Institute for Health and Care Excellence

Draft for consultation

Rehabilitation in adults with complex psychosis and related severe mental health conditions

[M] Interventions to improve engagement in community activities

NICE guideline TBC

Evidence review

January 2020

Draft for Consultation

This evidence review was developed by the National Guideline Alliance which is part of the Royal College of Obstetricians and Gynaecologists

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Contents

Interventions to improve engagement in community activities

Review question 5.3 What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?

Introduction

Engagement in everyday community activities such as participation in leisure activities, education and employment are key targets for rehabilitation services. Staff assisting people who are using rehabilitation services to achieve these goals need to be aware of and employ the interventions that have been shown to be effective in achieving these outcomes for people with complex psychosis and related severe mental health conditions

Summary of the protocol

Please see Table 1 for a summary of the Population, Intervention, Comparison and Outcome (PICO) characteristics of this review.

Table 1: Summary of the protocol (PICO table)

Population	Adults (aged 18 years and older) with complex psychosis and other severe mental health conditions (as defined in scope) Currently receiving rehabilitation in an inpatient rehabilitation unit, while living in supported accommodation or in the community.

Intervention	Employment and education interventions for service users:
	• Occupational therapy
	• Vocational training and resources
	• Recovery college
	• Job searching, interview & IT skills
	• Vocational support
	• Supported employment
	  ○ Work programs
	  ○ Sheltered workshops
	  ○ Transitional employment schemes (Clubhouse model)
	  ○ Individual Placement and Support
	Social and leisure Interventions for service users:
	• Social skills training
	• Peer support interventions (both giving and receiving support)
	• Exercise/physical therapy (team sports)
	• Leisure activities and arts
	• Social participation and participatory arts interventions

	Promotional interventions to encourage the formation and uptake of community, volunteer, education and employment opportunities for people with psychosis: • Aimed at carers and care staff • Aimed at promoting peer support interventions • Stigma busting interventions with employers and groups • Social participation/community engagement interventions (for example community navigators, community bridge builders)
Comparison	• No intervention • Other class of rehabilitation intervention • Standard care
Outcomes	**Critical outcomes** • Engagement with community activities • Quality of life • Social inclusion **Important outcomes** • Social skills, social and occupational functioning • Readmission/relapse • Sustaining tenancy (of accommodation)

IT: Information technology

For further details see the review protocol in appendix A.

Clinical evidence

Included studies

Fourteen randomised controlled trials (RCTs) were identified for this review (Areberg 2013, Bartels 2014, Bell 2001, Bond 2007, Bond 2015, Burns 2007, Drake 1996, Drake 1999, Gold 2006, Latimer 2006, Lindenmayer 2008, McGurk 2005, McGurk 2016 and Vauth 2005).

The included studies are summarised in Table 2.

Eight studies compared Individual Placement and Support (IPS) with other active vocational rehabilitation interventions (Areberg 2013, Bond 2007, Bond 2015, Burns 2007, Drake 1996, Drake 1999, Gold 2006 and Latimer 2006). Five studies examined the effect of adding cognitive remediation to usual vocational rehabilitation (Bell 2001, Lindenmayer 2008, McGurk 2005, McGurk 2016 and Vauth 2005). One study (Bartels 2014) compared social skills training to treatment as usual (TAU).

See the literature search strategy in appendix B and study selection flow chart in appendix C.

Excluded studies

Studies not included in this review with reasons for their exclusions are provided in appendix K.

Summary of clinical studies included in the evidence review

A summary of the studies that were included in this review are presented in Table 2.

Table 2: Summary of included studies

Study	Population	Intervention	Comparison	Outcomes
Areberg 2013 RCT Sweden	N=120 Diagnosis: 64% psychotic disorder, 8% bipolar, 28% other Setting: participants were recruited from all 6 mental health teams in a southern Swedish city.	Individual placement and support (IPS)	Traditional vocational rehabilitation (VR)	Follow-up 18 months • Engagement in community: 1 or more days worked in employment • Engagement in community: hours worked in employment • Engagement in community: participation in education • Quality of life: Manchester Short Appraisal (MANSA)
Bartels 2014 RCT	N=183 Diagnosis: 28% schizophrenia, 28% schizoaffective disorder, 20% bipolar disorder, 24% major depression. Setting: community dwelling adults. Mean age: 60.2 years.	Psychosocial skills training.	Treatment as usual (TAU)	Follow-up 36 months • Social skills: Multinomah Community Ability Scale (MCAS) total • Readmission/relapse:
Bell 2001 RCT	N=145 Diagnosis: schizophrenia or schizoaffective disorder (100%). Setting: outpatients treated at two mental health centres. Mean age 42 years; 58% male; 23% African American, 45% white.	Cognitive remediation + work therapy	Work therapy	Follow-up 12 months • Engagement in community: 1 or more days worked in employment
Bond 2007 RCT	N=187 Diagnosis 39% schizophrenia, 17% schizoaffective disorder, 24% bipolar disorder, 17% depression. Setting: Thresholds, psychiatric	Individual placement and support (IPS)	Clubhouse (diversified placement approach - DPA)	Follow-up 24 months • Engagement in community: 1 or more days worked in employment • Engagement in community: hours worked in employment

Study	Population	Intervention	Comparison	Outcomes
	rehabilitation service. Age: ≥ 18 years, mean 38.8 years Gender: 64% male Ethnicity: 51% African American, 38% white, 8% Hispanic Substance use: 32% used alcohol and 21% used drugs during study.			
Bond 2015 RCT	N=85 Diagnosis 53% schizophrenia, 18% depressive disorder, 25% bipolar disorder. Setting: an outpatient psychiatric rehabilitation agency. Age: ≥ 18 years, mean 43.8 years Gender: 79% male Ethnicity: 59% African American, 30% white	Individual placement and support (IPS)	Work Choice a job club model for job skills training.	Follow-up 12 months • Engagement in community: 1 or more days worked in employment • Readmission/relapse: • Engagement in community: hours worked in employment
Burns 2007 RCT Europe	N=312 Diagnosis: 80% schizophrenia or schizoaffective disorder, 17% bipolar disorder. Setting: 6 European mental health centres. Age:, mean 37.8 years, Gender: 60% male, Ethnicity: 90% born in country of residence.	Individual placement and support (IPS)	Vocational services (best alternative available locally).	Follow-up 18 months • Engagement in community: 1 or more days worked in employment • Engagement in community: hours worked in employment • Readmission/relapse: • Social skills: Groningen Social Disability Schedule (GSDS)
Drake 1996 RCT	N=143 Diagnosis: 47% schizophrenia and related psychotic disorders, 43% bipolar and other severe mood disorders. Setting: community mental health centres Age: 20-65 years, mean 37.0 years,	Individual placement and support (IPS)	Group job skills training	Follow-up 18 months • Engagement in community: hours worked in employment • Engagement in community: 1 or more days worked in employment

Study	Population	Intervention	Comparison	Outcomes
	Gender: 48% male, Ethnicity: 95% white			
Drake 1999 RCT	N=152 Diagnosis: 67% schizophrenia spectrum, 14% bipolar disorder, 16% depressive disorder) Setting: Community agency for people with SMD who need intensive case management.. Age: mean 39.4 years, Gender: 39% male, Ethnicity: 82% African American, Substance abuse: 9% current alcohol use disorder, 15% current drug use disorder.	Individual placement and support (IPS)	Enhanced vocational rehabilitation	Follow-up 18 months • Engagement in community: hours worked in employment • Engagement in community: 1 or more days worked in employment
Gold 2006 RCT	N=143 Diagnosis: 69% schizophrenia spectrum, 31% mood spectrum Setting: a rural Community Mental Health Centre. Age: ≥ 18 years, 71% between 26-45 years, Gender: 38% male, Ethnicity: 77% African American, 19% white Substance abuse: 9% current alcohol abuse/dependence, 8% current drug abuse/dependence	Assertive community treatment (ACT) with IPS	Traditional vocational rehabilitation	Follow-up 24 months • Engagement in community: 1 or more days worked in employment
Latimer 2006 RCT Canada	N=150 Diagnosis: 59% schizophrenia spectrum and 20% bipolar disorder. Setting: a teaching psychiatric hospital with a vocational rehabilitation centre. Age: 18-64 years, mean 40.3 years; Gender: 62% male;	Individual placement and support (IPS)	Usual vocational rehabilitation intervention	Follow-up 12 months • Engagement in community: hours worked in employment • Engagement in community: 1 or more days worked in employment

Study	Population	Intervention	Comparison	Outcomes
	Ethnicity: 82% white; Substance abuse: 4% alcohol misuse or dependence, 10% drug misuse or dependence.			
Lindenmayer 2008 RCT	N=85 Diagnosis: schizophrenia or schizoaffective disorder (84%). Setting: intermediate- to long-stay psychiatric inpatients. 89% male; 13% white, 58% African American; 80% substance abuse.	Cognitive remediation + work therapy	Attention control + work therapy	Follow-up 12 months • Engagement in community: hours worked in employment • Engagement in community: 1 or more days worked in employment
McGurk 2005 RCT	N=44 Diagnosis: 62% schizophrenia, 24% depression/anxiety, 6% bipolar disorder. Setting: a vocational rehabilitation programme in an urban medical centre. Age: ≥ 18 years; mean age 44.0 years; Gender: 59% male; Ethnicity: 62% African American, 15% Hispanic; Substance abuse: 26% current alcohol use disorder, 26% current drug use disorder	Cognitive remediation + vocational rehabilitation intervention	Vocational rehabilitation intervention	Follow-up 12 months • Engagement in community: 1 or more days worked in employment
McGurk 2015 RCT	N=54 Diagnosis: 83% schizophrenia. Setting: outpatient, community mental health agency. 75% male; 25% white, 61% African America; 15% substance abuse..	Cognitive remediation + supported employment	Supported employment	Follow-up 36 months • Engagement in community: 1 or more days worked in employment
Vauth 2005 RCT Switzerland	N=93 Diagnosis: 100% schizophrenia.	Cognitive remediation + work therapy	Work therapy	Follow-up 12 months • Engagement in community: 1 or more days worked in employment

Study	Population	Intervention	Comparison	Outcomes
	Setting: inpatient rehabilitation ward. Mean age 29 years; 65% male.			

RCT: randomised controlled trial; TAU: treatment as usual

See the full evidence tables in appendix D and the forest plots in appendix E.

Quality assessment of clinical outcomes included in the evidence review

See the clinical evidence profiles in appendix F.

Economic evidence

Included studies

A systematic review of the economic literature was conducted but no economic studies were identified which were applicable to this review question.

Excluded studies

Studies not included in this review with reasons for their exclusions are provided in Appendix K – Excluded studies.

Summary of studies included in the economic evidence review

No economic evidence was identified for this review (and so there are no economic evidence tables).

Economic model

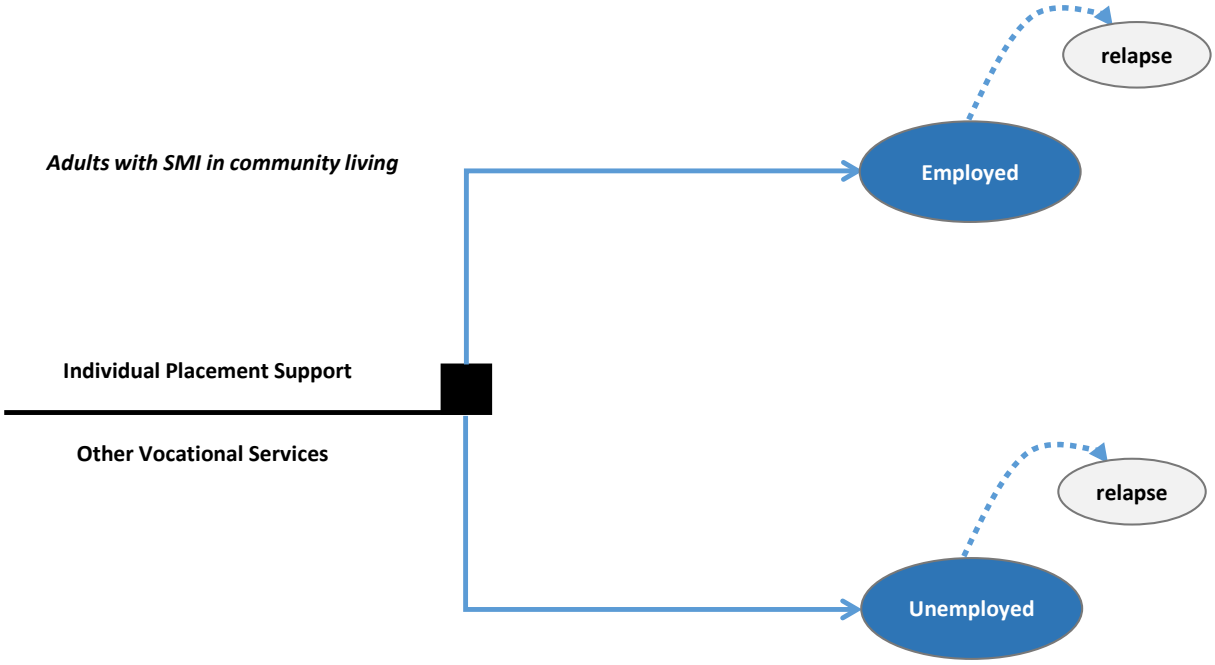
An economic analysis was undertaken to estimate the cost-effectiveness of individual placement support (IPS) versus other vocational rehabilitation services (VRS) for adults with complex psychosis and severe mental illness. (See Appendix J – Economic analysis for 5.3: A cost utility analysis of individual placement support versus other vocational rehabilitation services for the full report of the economic analysis).

Overview of methods

The model setting was for the NHS. The population were adults (aged 18 year and older) with complex psychosis and related severe mental health conditions who are living in the community.

The setting, and the clinical inputs were informed entirely from studies included in the accompanying clinical evidence report. Two intervention strategies were identified as facilitating 'engagement with community activities' and were therefore considered in the economic model: IPS and VRS. The outcome representing engagement in community activities was 1 or more days worked in employment. A schematic of the model is provided in Figure 1.

Figure 1: Schematic of individual placement support versus other vocational rehabilitation services



Source/Note: SMI: Severe mental illness

Clinical inputs for the baseline risk and treatment effectiveness were extracted from a meta-analysis of 7 studies in the clinical review (see Figure 3). The mean number of days spent in employment, having been employed for at least 1 day was 224 days and 113 days for IPS and VRS, respectively. The time horizon was based on the weighted average of all the included studies length that informed the effectiveness estimate. The probability of readmission to hospital was also informed by a separate meta-analysis of two RCTs (see Figure 7).

In accordance with NICE methodology, a NHS and Personal Social Services (PSS) perspective was adopted for this analysis. Costs were based on a 2017/18 price year, reflecting the most recently available NHS Reference Costs at the time of writing. Costs were not discounted as all relevant costs occurred within the relatively short time horizon of the model. Costs for IPS and VRS were based on the Personal Social Services Research Unit's (PSSRU) report from 2015, the most recently available costing for IPS. There was high variability in the description of VRS in the comparator of the pooled studies, thus it was assumed that these would be costed as 'day care services. These services usually include an employment support element and are said to be the most appropriate comparator to IPS in the UK context (PSSRU 2015). Costs were also included for the health states 'employed' and 'unemployed' to account for a lower frequency of contact with healthcare services (Schneider 2009). The cost associated with a relapse was advised by the committee as being relevant to 'cluster 14', with the mean estimate informed from the most up to date NHS reference cost listing.

SF-6D Utilities for the model were attached to the health states 'employed' and 'unemployed'. The health state utility for relapse was informed by a study comparing EQ-5D utilities for schizophrenia related conditions from patients and the general UK public (Briggs

2008). Values elicited from the general public were included for this analysis, in line with the NICE reference case.

Main findings

The main results, displayed in Table 3, are presented in the form of probabilistic sensitivity analysis (PSA). Due to the differing views amongst the committee of the appropriate cost configuration of IPS, 3 PSAs were conducted based on the:

- cost of IPS delivered by a Band 4 staff member with a caseload of 20 patients
- cost of IPS delivered by a Band 5 staff member with a caseload of 20 patients
- cost of IPS delivered by a Band 5 staff member with a caseload of 20 patients and time spent in relapse of 30 days.

The results of the PSAs are based on 10,000 Monte Carlo simulations of each model. The mean incremental net monetary benefit (iNMB) is used to inform the likelihood that IPS is cost effective at £20,000 per quality adjusted life year (QALY) gained.

Table 3: Mean incremental net monetary benefit and probability of individual placement support being cost effective

Unit cost configuration of IPS	Mean iNMB	Probability IPS is cost effective (n=10,00)
Band 4: Caseload 20: £2754 pa	£226	58%
Band 5: Caseload 20: £2966 pa	-£135	47%
Band 5: Caseload 20: £2966 pa and time in relapse mean is 30 days	£614	62%

Strengths/limitations

The results show IPS is likely to be cost effective when delivered by a band 4 member of staff, though this likelihood is lesser when the mean cost of IPS is based on being delivered by a band 5 member of staff. In both PSAs, the mean time spent in relapse was 10 days, as informed by the accompanying clinical review. The committee believed that a mean of 30 days would be a much more likely length of stay. When a PSA was run using this value for readmission length of stay, and the higher cost banding of IPS was assumed, IPS was likely to be cost effective (62% probable compared to VRS). The cost of the interventions were shown to be particularly sensitive in the model results in a tornado analysis based on the mean estimates used to inform the first PSA (IPS costed at band 4). A separate tornado was run for when IPS was delivered by a band 5 staff member and length of readmission was assumed as having a mean of 30 days. In this analysis, length of readmission was the key driver of the model.

The model has a number of limitations, in particular the effect estimate being composed mostly of studies from the United States of America (USA). Owing to the key differences in the provision of healthcare and benefits system in the USA, the results may not necessarily translate to a UK setting. There was also a high degree of variation in the way the comparator was defined in each of the studies included in the accompanying meta-analysis that provided the pooled effect estimate. Therefore, the cost of the comparator in this model, assumed to be ‘day care services’, may not accurately reflect the nature of what is being

compared in the clinical review. Subject to these limitations, this model demonstrates that IPS is likely to be a cost effective intervention as more people are lkely to attain employment which has a corresponding health benefit in the form of a higher quality of life and a lower chance of relapse in comparison with other employment programmes.

Evidence statements

Clinical evidence statements

Comparison 1. Individual Placement and Support versus other vocational rehabilitation services

Critical outcomes

Engagement with community activities

- Moderate quality evidence from 8 RCTs (N=1255) showed a clinically important increase in employment in participants receiving Individual Placement and Support compared to those receiving other vocational rehabilitation services.
- Moderate quality evidence from 7 RCTs (N=1112) showed a clinically important increase in the number of hours worked in employment in participants receiving Individual Placement and Support compared to those receiving other vocational rehabilitation services
- Very low quality evidence from 1 RCT (N=87) showed no clinically important difference in the rates of participation in education in participants receiving Individual Placement and Support compared to those receiving other vocational rehabilitation services

Quality of life

No evidence was identified to inform this outcome.

Social inclusion

No evidence was identified to inform this outcome.

Important outcomes

Social skills, social and occupational functioning

- Low quality evidence from 1 RCT (N=252) showed no clinically important difference in the social skills of participants receiving Individual Placement and Support compared to those receiving other vocational rehabilitation services.

Readmission or relapse

- Very low quality evidence from 2 RCTs (N=336) showed no clinically important difference in the rates of psychiatric readmission in participants receiving Individual Placement and Support compared to those receiving other vocational rehabilitation services.

Sustaining tenancy (of accommodation)

No evidence was identified to inform this outcome.

Comparison 2. Cognitive remediation plus vocational rehabilitation versus vocational rehabilitation alone

Critical outcomes

Engagement with community activities

- Low quality evidence from 5 RCTs (N=421) showed a clinically important increase in employment in participants receiving cognitive remediation plus vocational rehabilitation services compared to those receiving vocational rehabilitation services alone.
- Very low quality evidence from 4 RCTs (N=293) showed a clinically important increase in the number of hours worked in employment in participants receiving cognitive remediation plus vocational rehabilitation services compared to those receiving vocational rehabilitation services alone.

Quality of life

No evidence was identified to inform this outcome.

Social inclusion

No evidence was identified to inform this outcome.

Important outcomes

Social skills, social and occupational functioning

No evidence was identified to inform this outcome

Readmission or relapse

No evidence was identified to inform this outcome.

Sustaining tenancy (of accommodation)

No evidence was identified to inform this outcome.

Comparison 3. Psychosocial skills training versus treatment as usual

Critical outcomes

Engagement with community activities

No evidence was identified to inform this outcome.

Quality of life

No evidence was identified to inform this outcome.

Social inclusion

No evidence was identified to inform this outcome.

Important outcomes

Social skills, social and occupational functioning

- Moderate quality evidence from 1 RCT (N=183) showed an increase in community functioning as measured by the Multinomah Community Ability Scale (MCAS) in participants receiving psychosocial skills training compared to those receiving treatment as usual.
- Low quality evidence from 1 RCT (N=183) showed no difference in social skills as measured using the Social Behaviour Survey in participants receiving psychosocial skills training compared to those receiving treatment as usual.

Readmission or relapse

- Very low quality evidence from 1 RCT (N=183) showed no clinically important difference in the rates of psychiatric readmission in participants receiving psychosocial skills training compared to those receiving treatment as usual.

Sustaining tenancy (of accommodation)

No evidence was identified to inform this outcome.

Economic evidence statements

Evidence from the guideline economic analysis suggested that individual placement support is cost effective when compared to other vocational rehabilitation services. The economic analysis is directly applicable to the NICE decision-making context and is characterised by potentially serious limitations.

The committee's discussion of the evidence

Interpreting the evidence

The outcomes that matter most

The critical outcomes for decision making were: engagement with community activities, quality of life and social inclusion. Many people with severe and enduring mental illness suffer from secondary difficulties due to social stigma so increasing their engagement with the community is likely to reduce social stigma and improve quality of life. Social skills, readmission or relapse and sustaining tenancy (of accommodation) were important outcomes for this question.

The quality of the evidence

Evidence from RCTs was available for individual placement and support, cognitive remediation and social skills training but was lacking for the other interventions of interest. Evidence was available for engagement with employment but not for engagement with other community activities. There was no evidence about quality of life, social inclusion or sustaining tenancy.

The quality of the evidence ranged from very low to moderate quality using GRADE. Evidence was downgraded for risk of bias due to lack of blinding, imprecision and heterogeneity.

The committee noted that while all of the studies were conducted within rehabilitation services, many IPS studies were focused on vocational rehabilitation and not the direct equivalent to the community or inpatient rehabilitation services in the current guideline. This meant that this evidence is likely to come from a less functionally impaired subgroup of the complex psychosis rehabilitation population. However similar effect sizes were seen for IPS in the inpatient (for non-competitive employment) and community settings.

The committee also noted that many of the IPS studies came from the USA, where the benefits system means there is often greater incentive to find paid work. Despite the possible benefits disincentive similar effect sizes were seen in the European IPS studies compared to the US studies.

Benefits and harms

The committee recommended IPS as evidence indicated it would increase engagement in employment for those interested in work. The committee acknowledged, based on their experience that some people not ready for competitive employment might still benefit from alternatives to IPS such as transitional employment schemes which would increase their engagement with employment. Based on their experience, the committee thought the development of sector partnerships (for example with businesses or educational establishments) is another route to engagement with education or work.

The committee thought, based on their experience, that IPS and transitional employment schemes would have a positive impact on rehabilitation services by creating a recovery-focused culture and building cross sector relationships with other services.

The committee recommended cognitive remediation as an adjunct to vocational rehabilitation based on evidence of increased employment. The committee acknowledged, based on their experience that engagement with community activities needs to be judged on an individual basis to avoid harms to the individual. For example, some people may not be ready for the stresses associated with competitive employment or education. For this reason the committee recommended provision of a range of learning and skill development opportunities with appropriate support to align with individuals' needs.

The committee discussed peer support interventions. Although peer-support interventions are widely supported in the broader literature for people with mental illness, and were valued by the committee, there was no directly relevant research to guide the development of peer support in complex psychosis and rehabilitation services. The committee therefore made a research recommendation in this area.

The committee also discussed staff training interventions with regard to improving activities of daily living, interpersonal functioning, and engagement in community activities (covered in three sepearte evidence reports). Staff in inpatient rehabilition units, in community mental health rehabilitation teams, and in supported accommodation could deliver programs to improve these key aspects of personal recovery; however, no trials assessing staff training interventions to deliver such programs were identified. The committee made a research recommendation for staff training interventions.

Cost effectiveness and resource use

The committee acknowledged that individual placement support has been recommended for people with schizophrenia in the NICE Schizophrenia and Psychosis guideline (CG178). However, it was the committee's view that this has not been well implemented for those with complex psychosis in a rehabilitation setting. Many clinicians on the committee cited

occasions when they had not been able refer patients to such a service. The committee expressed a view that, if a more explicit case could be made for the value of such an intervention, it would lend credence to the commissioning of such services. It was also acknowledged by the committee that there would be resource implications for trusts which do not currently enable access to IPS for this population group. However, many services already include an employment services component.

De novo economic modelling for this review question suggests that the effectiveness gains, measured by QALYs are proportionate to the increase in costs associated with individual placement support in comparison with other vocational rehabilitation services. Cost effectiveness is driven by a reduced risk of relapse in the intervention arm and a reduced risk of unemployment. The committee also noted that their recommendations were consistent with the NHS '5 year forward view for mental health' (2018) which aims to increase access to IPS schemes for people with severe mental illness.

The committee were in agreement that patients who would take part in an IPS scheme would be relatively high functioning, and so refrained from making an 'offer' recommendation as individual placement support would not be appropriate for many patients. They agreed, however, that there were no simple criteria to delineate those who would and would not be able to take part in an IPS scheme so instead of making an 'offer' recommendation for a subgroup they made a 'consider' recommendation for anyone who would like to work towards mainstream employment. The committee also expressed a concern that the cost of a support worker accompanying a patient to services had not been included in the analysis, though it was acknowledged that this would be current practice in nearly all instances where a support worker would accompany a patient to appointments. It was also acknowledged that this equally be the case for taking patients to day care services, set as the comparator in this analysis. Therefore, this cost would have little impact on the incremental costs between the 2 treatment strategies.

The committee expressed concern that the effectiveness estimates used in the economic analysis were largely based on studies from the USA and that there are fundamental differences between the US and British healthcare and benefits systems that may bias the results, and therefore the assessment of cost effectiveness. There was a view amongst the committee that the reported effectiveness in terms of patients becoming employed was higher than in current UK practice. Nevertheless, the committee still believed that IPS is an effective work scheme for patients who wish to take part.

The committee noted that cognitive remediation is not commonly offered by the NHS and a significant resource impact could ensue if provision for this intervention was increased. However, the low quality of evidence in the accompanying clinical evidence review was acknowledged by the committee. Cost effectiveness of cognitive remediation was discussed in a qualitative manner. The studies in the accompanying clinical review were based on patients using the 'COGPACK' software which has a licence fee and would require up to 40 sessions over a 6-month period for this patient group. However, some committee members suggested that in the UK it is sometimes provided in paper-pencil format, though increasingly less so. It was also acknowledged that there were studies that used the 'CIRcuiTs' software in the UK context, which would also have a licence fee and be delivered by trained specialist for up to 40 sessions, though these studies were for patients with first episode psychosis. The clinical review assessed cognitive remediation in addition to other vocational rehabilitation services, in comparison to other vocational rehabilitation services only rather than IPS. Owing to the uncertainty in the effect estimates in the clinical review, and the potentially significant resource impact, the committee felt they were unable to justify a strong recommendation for cognitive remediation therapy as an augmentation to vocational

rehabilitation services, though noted that it may be beneficial for some people who struggle to engage with conventional employment schemes. The committee therefore recommended considering cognitive remediation interventions alongside vocational rehabilitation services.

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Appendices

Appendix A – Review protocols

Review protocol for review question: 5.3 What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work?

Table 4: Review protocol for interventions to improve engagement in community activities

Field (based on PRISMA-P	Content
Review question	5.3 What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work?
Type of review question	Intervention
Objective of the review	This review aims to compare the effectiveness of interventions specific to rehabilitation to improve the engagement of people with complex psychosis and severe mental illness in community activities.
Eligibility criteria – population	Adults (aged 18 years and older) with complex psychosis and other severe mental health conditions (as defined in scope) Currently receiving rehabilitation in an inpatient rehabilitation unit or while living in supported accommodation or in the community.

Eligibility criteria – interventions	Employment and education interventions for service users:
	• Occupational therapy
	• Vocational training and resources
	• Recovery college
	• Job searching, interview & IT skills
	• Vocational support
	  ○ Supported employment
	  ○ Work programs

Field (based on PRISMA-P	Content
	○ Sheltered workshops ○ Transitional employment schemes (club house model) ○ Individual Placement and Support Social and leisure interventions for service users: • Social skills training • Peer support interventions (both giving and receiving support) • Exercise/physical therapy (team sports) • Leisure activities and arts • Social participation and participatory arts interventions Promotional interventions to encourage the formation and uptake of community, volunteer, education and employment opportunities for people with psychosis: • Aimed at carers and care staff • Aimed at promoting peer support interventions • Stigma busting interventions with employers and groups • Social participation/community engagement interventions (e.g. community navigators, community bridge builders)
Eligibility criteria – comparator	• Standard care • Other classes of rehabilitation interventions • No intervention
Outcomes and prioritisation	Critical outcomes • Engagement with community activities, for example: ○ employment status ○ participation in volunteer, community, education and leisure activities • Quality of life, for example: ○ Manchester Short Assessment of Quality of Life (MANSA)

Field (based on PRISMA-P	Content

	• Social inclusion, for example:
	  ○ Social Inclusion Questionnaire User Experience (SInQUE)
	  ○ Objective Social Outcomes Index (SIX)
	  ○ ROLE checklist
	  ○ Interest checklist
	Important outcomes
	• Social skills, social and occupational functioning, for example:
	  ○ Model of Human Occupation Screening Tool (MOHOST)
	  ○ Life Skills Profile (LSP-16)Camberwell Assessment of Needs (CAN)
	• Readmission/relapse
	• Sustaining tenancy (of accommodation)

Eligibility criteria – study design	RCTs. If no RCTs are available for any of the interventions, comparative observational studies will be considered.
Other inclusion exclusion criteria	Date limit: 1990 The date limit for studies after 1990 was suggested by the GC considering the change in provision of mental health services from institutionalized care in the 1970s to deinstitutionalise and community based care from 1990s onwards. Country limit: UK, USA, Australasia, Europe, Canada. The GC limited to these countries because they have similar cultures to the UK, given the importance of the cultural setting in which mental health rehabilitation takes place.
Proposed sensitivity/sub-group analysis, or meta-regression	Subgroup analysis • Competitive vs Volunteer Vs Clubhouse style employment • Group vs individual led leisure activities Confounders that will be used to explore heterogeneity: • Duration of long term follow-up • Group therapy vs individual therapy • Inpatient vs supported accommodation • Black and Asian ethnic minorities • Family involvement

Field (based on PRISMA-P	Content
	• Value based culture / social engagement (including therapeutic relationships – family, carers; team sports/activities) Observational studies should adjust for the following: • Age • Measure of clinical severity • Gender
Selection process – duplicate screening/selection/analysis	A random sample of the references identified in the search will be sifted by a second reviewer. This sample size of this pilot round will be 10% of the total (with a minimum of 100 studies). All disagreements in study inclusion will be discussed and resolved between the two reviewers. The senior systematic reviewer or guideline lead will be involved if discrepancies cannot be resolved between the two reviewers.
Data management (software)	NGA STAR software will be used for study sifting, data extraction, recording quality assessment using checklists and generating bibliographies/citations. RevMan will be used to generate plots and for any meta-analysis. 'GRADEpro' will be used to assess the quality of evidence for each outcome.
Information sources – databases and dates	Sources to be searched: Embase, Medline, PsycINFO, Cochrane library (CDSR and CENTRAL), DARE and HTA (via CRD) Limits (e.g. date, study design): Human studies /English language Limit to RCTs and systematic reviews in first instance, but download all results Dates: from 1990
Identify if an update	Not an update
Author contacts	For details please see the guideline in development web site.
Highlight if amendment to previous protocol	For details please see section 4.5 of Developing NICE guidelines: the manual 2014
Search strategy – for one database	For details please see appendix B.
Data collection process – forms/duplicate	A standardised evidence table format will be used, and published as appendix D (clinical evidence tables) or H (economic evidence tables).

Field (based on PRISMA-P	Content
Data items – define all variables to be collected	For details please see evidence tables in appendix D (clinical evidence tables) or H (economic evidence tables).
Methods for assessing bias at outcome/study level	Standard study checklists were used to critically appraise individual studies. For details please see section 6.2 of Developing NICE guidelines: the manual 2014. The risk of bias across all available evidence was evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group http://www.gradeworkinggroup.org/.
Criteria for quantitative synthesis	For details please see section 6.4 of Developing NICE guidelines: the manual 2014
Methods for quantitative analysis – combining studies and exploring (in)consistency	For details please see the methods supplementary document.
Meta-bias assessment – publication bias, selective reporting bias	For details please see section 6.2 of Developing NICE guidelines: the manual 2014.
Confidence in cumulative evidence	For details please see sections 6.4 and 9.1 of Developing NICE guidelines: the manual 2014
Rationale/context – what is known	For details please see the introduction to the evidence review.
Describe contributions of authors and guarantor	A multidisciplinary committee developed the evidence review. The committee was convened by the National Guideline Alliance (NGA) and chaired by Prof Gillian Baird in line with section 3 of Developing NICE guidelines: the manual 2014. Staff from the NGA undertook systematic literature searches, appraised the evidence, conducted meta-analysis and cost effectiveness analysis where appropriate, and drafted the guideline in collaboration with the committee. For details please see the methods see supplementary document C.
Sources of funding/support	The NGA is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists.
Name of sponsor	The NGA is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists.

Field (based on PRISMA-P	Content
Roles of sponsor	NICE funds NGA to develop guidelines for those working in the NHS, public health and social care in England
PROSPERO registration number	Not applicable

CDSR: Cochrane Database of Systematic Reviews; CENTRAL: Cochrane Central Register of Controlled Trials; DARE: Database of Abstracts of Reviews of Effects; GC: guideline committee; GRADE: Grading of Recommendations Assessment, Development and Evaluation; IT: information technology; MID: minimally important difference; NGA: National Guideline Alliance; NHS: National health service; NICE: National Institute for Health and Care Excellence; RCT: randomised controlled trial; RoB: risk of bias; SD: standard deviation

Appendix B – Literature search strategies

Literature search strategies for review question: 5.3 What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work?

Databases: Medline/Embase/PsycINFO

Date searched: 09/01/2019

#	Searches
1	exp psychosis/ use emczd
2	Psychotic disorders/ use ppez
3	exp psychosis/ use psyh
4	(psychos?s or psychotic).tw.
5	exp schizophrenia/ use emczd
6	exp schizophrenia/ or exp "schizophrenia spectrum and other psychotic disorders"/ use ppez
7	(exp schizophrenia/ or "fragmentation (schizophrenia)"/) use psyh
8	schizoaffective psychosis/ use emczd
9	schizoaffective disorder/ use psyh
10	(schizophren* or schizoaffective*).tw.
11	exp bipolar disorder/ use emczd
12	exp "Bipolar and Related Disorders"/ use ppez
13	exp bipolar disorder/ use psyh
14	((bipolar or bipolar type) adj2 (disorder* or disease or spectrum)).tw.
15	Depressive psychosis/ use emczd
16	Delusional disorder/ use emczd
17	delusions/ use psyh
18	(delusion* adj3 (disorder* or disease)).tw.
19	mental disease/ use emczd
20	mental disorders/ use ppez
21	mental disorders/ use psyh
22	(psychiatric adj2 (illness* or disease* or disorder* or disabilit* or problem*)).tw.
23	((severe or serious) adj3 (mental adj2 (illness* or disease* or disorder* or disabilit* or problem*))).tw.
24	(complex adj2 (mental adj2 (illness* or disease* or disorder* or disabilit* or problem*))).tw.
25	or/1-24
26	(Rehabilitation/ or cognitive rehabilitation/ or community based rehabilitation/ or psychosocial rehabilitation/ or rehabilitation care/ or rehabilitation center/) use emczd
27	(exp rehabilitation/ or exp rehabilitation centers/) use ppez
28	(Rehabilitation/ or cognitive rehabilitation/ or neuropsychological rehabilitation/ or psychosocial rehabilitation/ or independent living programs/ or rehabilitation centers/ or rehabilitation counselling/) use psyh
29	residential care/ use emczd
30	(residential facilities/ or assisted living facilities/ or halfway houses/) use ppez
31	(residential care institutions/ or halfway houses/ or assisted living/) use psyh
32	(resident* adj (care or centre or center)).tw.
33	(halfway house* or assist* living).tw.
34	((inpatient or in-patient or long-stay) adj3 (psychiatric or mental health)).tw.
35	(Support* adj (hous* or accommodat* or living)).tw.
36	(rehabilitation or rehabilitative or rehabilitate).tw.

#	Searches
37	rehabilitation.fs.
38	or/26-37
39	cognitive behavioral therapy/ use emczd
40	cognitive behavior therapy/ use psyh
41	*cognitive therapy/ use ppez
42	cognitive behavio?r therap*.tw.
43	*cognitive remediation therapy/ use emczd
44	*cognitive remediation/ use ppez
45	cognitive remediation.tw.
46	*motivational interviewing/
47	motivation* interview*.tw.
48	behavio?r* activation.tw.
49	*psychosocial care/ use emczd
50	psychosocial rehabilitation/ use emczd
51	*psychosocial rehabilitation/ use psyh
52	((psychosocial or psychological) adj2 (care or intervention* or therap* or treat* or rehabilitat*)).tw.
53	or/39-52
54	*occupational therapy/
55	(occupational adj2 therap*).tw.
56	54 or 55
57	*exercise/
58	exp *physical activity/ use emczd
59	physical activity/ use psyh
60	active living/ use psyh
61	(exercise or gym* or fitness*).tw.
62	((team* or group*) adj2 sport*).tw.
63	(physical adj2 (activit* or therap*)).tw.
64	or/57-63
65	Environment/
66	((alter or alterate or alteration* or modification* or modify or adjust* or adapt*) adj3 (equipment* or environment*)).tw.
67	or/65-66
68	Daily life activity/ use emczd
69	Leisure/ use emczd
70	exp *recreation/ use emczd
71	exp *leisure activities/ use ppez
72	Recreation therapy/ use ppez
73	Leisure time/ use psyh
74	Recreation/ use psyh
75	(structure* adj2 activit*).tw.
76	((recreation* or leisure* or domestic) adj2 Activit*).tw.
77	(meaningful adj2 occupation*).tw.
78	or/68-77
79	Social competence/ use emczd
80	Social skills/ use ppez
81	social skills/ use psyh
82	((group or interperson* or inter person*) adj2 skill*).tw.
83	(Social adj3 (skill* or competen* or abilit*)).tw.
84	or/79-83
85	Horticultural therapy/

#	Searches
86	(ecotherapy or eco therapy or nature therapy or ecological therapy).tw.
87	(horticultur* adj3 therap*).tw.
88	morita therap*.tw.
89	Mindfulness/
90	Mindfulness.tw.
91	or/85-90
92	Psychoeducation/ use emczd
93	Psychoeducation/ use psyh
94	Family therapy/ use emczd
95	Family therapy/ use ppez
96	exp Family therapy/ use psyh
97	Family intervention/ use psyh
98	psychoeducat*.tw.
99	(Family adj2 (therap* or intervention* or psychiatry or psychotherap* or treat*)).tw.
100	or/92-99
101	exp *social support/
102	(Peer adj2 support*).tw.
103	(peer-to-peer adj2 support*).tw.
104	or/101-103
105	Art therapy/
106	Team sport/ use emczd
107	Music therapy/ use ppez
108	Music therapy/ use emczd
109	Storytelling/ use psyh
110	Creative writing/ use psyh
111	Narrative therapy/ use psyh
112	Dance therapy/ use emczd
113	exp Animal assisted therapy/ use ppez
114	Pet therapy/ use emczd
115	Animal assisted therapy/ use psyh
116	(Clubhouse* or club house*).tw.
117	((pet* or animal*) adj2 therap*).tw.
118	((group or team) adj2 (activit* or game* or skill*)).tw.
119	(positive behavio?r* adj2 (intervention* or support*)).tw.
120	or/105-119
121	*Vocational education/
122	Vocational rehabilitation/ use psyh
123	*Vocational rehabilitation/ use emczd
124	*Rehabilitation, vocational/ use ppez
125	(vocation* adj2 (school* or train* or educat* or rehab* or resource* or support*)).tw.
126	or/121-125
127	Job finding/ use emczd
128	job interview/ use emczd
129	job application/ use ppez
130	job search/ use psyh
131	Job applicant interviews/ use psyh
132	(job adj3 (hunt* or find* or search* or seek*)).tw.
133	or/127-132
134	Computer literacy/ use ppez

#	Searches
135	Computer literacy/ use psyh
136	Computer training/ use psyh
137	(computer adj2 (skill* or literate or literacy)).tw.
138	(information technolog* adj2 skill*).tw.
139	IT skill*.tw.
140	or/134-139
141	Supported employment/ use emczd
142	Supported employment/ use psyh
143	Employment, supported/ use ppez
144	((supported or program* or placement*) adj2 (work or employment)).tw.
145	or/141-144
146	Sheltered workshop/ use emczd
147	Sheltered workshops/ use ppez
148	Sheltered workshops/ use psyh
149	((protected or sheltered) adj2 workshop*).tw.
150	(recover* adj2 college*).tw.
151	(transition* adj2 employment).tw.
152	or/146-151
153	*Community participation/ use emczd
154	Community participation/ use ppez
155	*Community involvement/ use psyh
156	((communit* or education* or employment or voluntary or volunteer or volunteering) adj2 opportunit*).tw.
157	social participation/ use emczd
158	social participation/ use ppez
159	*social interaction/ use emczd
160	*social interaction/ use psyh
161	(social adj2 (participat* or involve* or engage*)).tw.
162	(participatory adj2 (art or arts)).tw.
163	or/153-162
164	53 or 56 or 64 or 67 or 78 or 84 or 91 or 100 or 104 or 120 or 126 or 133 or 140 or 145 or 152 or 163
165	25 and 38 and 164
166	limit 165 to (yr="1990 - current" and english language)
167	Letter/ use ppez
168	letter.pt. or letter/ use emczd
169	note.pt.
170	editorial.pt.
171	Editorial/ use ppez
172	News/ use ppez
173	news media/ use psyh
174	exp Historical Article/ use ppez
175	Anecdotes as Topic/ use ppez
176	Comment/ use ppez
177	Case Report/ use ppez
178	case report/ or case study/ use emczd
179	Case report/ use psyh
180	(letter or comment*).ti.
181	or/167-180
182	randomized controlled trial/ use ppez
183	randomized controlled trial/ use emczd

#	Searches
184	random*.ti,ab.
185	cohort studies/ use ppez
186	cohort analysis/ use emczd
187	cohort analysis/ use psyh
188	case-control studies/ use ppez
189	case control study/ use emczd
190	or/182-189
191	181 not 190
192	animals/ not humans/ use ppez
193	animal/ not human/ use emczd
194	nonhuman/ use emczd
195	"primates (nonhuman)"/
196	exp Animals, Laboratory/ use ppez
197	exp Animal Experimentation/ use ppez
198	exp Animal Experiment/ use emczd
199	exp Experimental Animal/ use emczd
200	animal research/ use psyh
201	exp Models, Animal/ use ppez
202	animal model/ use emczd
203	animal models/ use psyh
204	exp Rodentia/ use ppez
205	exp Rodent/ use emczd
206	rodents/ use psyh
207	(rat or rats or mouse or mice).ti.
208	or/191-207
209	166 not 208
210	limit 209 to yr="1990 -1998"
211	limit 209 to yr="1999 -2006"
212	limit 209 to yr="2007 -2013"
213	limit 209 to yr="2014 -current"
214	remove duplicates from 210
215	remove duplicates from 211
216	remove duplicates from 212
217	remove duplicates from 213
218	214 or 215 or 216 or 217

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2 **Database: Cochrane Library**

3 Date searched: 09/01/2019

#	Searches
1	MeSH descriptor: [Psychotic Disorders] explode all trees
2	(psychos?s or psychotic):ti,ab,kw
3	MeSH descriptor: [Schizophrenia] explode all trees
4	(schizophren* or schizoaffective*):ti,ab,kw
5	MeSH descriptor: [Bipolar Disorder] explode all trees
6	(((bipolar or bipolar type) near/2 (disorder* or disease or spectrum))):ti,ab,kw
7	MeSH descriptor: [Delusions] this term only

#	Searches
8	((delusion* near/3 (disorder* or disease))):ti,ab,kw
9	MeSH descriptor: [Mental Disorders] this term only
10	((psychiatric near/2 (illness* or disease* or disorder* or disabilit* or problem*))):ti,ab,kw
11	(((severe or serious) near/3 (mental adj2 (illness* or disease* or disorder* or disabilit* or problem*)))):ti,ab,kw
12	((complex near/2 (mental adj2 (illness* or disease* or disorder* or disabilit* or problem*)))):ti,ab,kw
13	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12)
14	MeSH descriptor: [Rehabilitation] this term only
15	MeSH descriptor: [Rehabilitation, Vocational] this term only
16	MeSH descriptor: [Residential Facilities] this term only
17	MeSH descriptor: [Assisted Living Facilities] this term only
18	MeSH descriptor: [Halfway Houses] this term only
19	((resident* near (care or centre or center))):ti,ab,kw
20	(((inpatient or in-patient or long-stay) near/3 (psychiatric or mental health))):ti,ab,kw
21	(((Support*) near (hous* or accommodat* or living))):ti,ab,kw
22	((halfway house* or assist* living)):ti,ab,kw
23	(rehabilitation or rehabilitative or rehabilitate):ti,ab,kw
24	(#14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23)
25	MeSH descriptor: [Cognitive Therapy] this term only
26	(cognitive behavio?r therap*):ti,ab,kw
27	MeSH descriptor: [Cognitive Remediation] this term only
28	(cognitive remediation):ti,ab,kw
29	MeSH descriptor: [Motivational Interviewing] this term only
30	(motivation* interview*):ti,ab,kw
31	(behavio?r* activation):ti,ab,kw
32	((psychosocial or psychological) near/2 (care or intervention* or therap* or treat* or rehabilitat*)):ti,ab,kw
33	MeSH descriptor: [Occupational Therapy] this term only
34	(Occupational near/2 therap*):ti,ab,kw
35	MeSH descriptor: [Exercise] this term only
36	(exercise or gym* or fitness*):ti,ab,kw
37	((team* or group*) near/2 sport):ti,ab,kw
38	(physical near/2 (activit* or therap*)):ti,ab,kw
39	MeSH descriptor: [Environment] this term only
40	((alter or alterate or alteration* or modification* or modify or adjust* or adapt*) near/3 (equipment* or environment*)):ti,ab,kw
41	MeSH descriptor: [Leisure Activities] explode all trees
42	MeSH descriptor: [Recreation Therapy] this term only
43	(structure* near/2 activit*):ti,ab,kw
44	((recreation* or leisure* or domestic) near/2 Activit*):ti,ab,kw
45	(meaningful near/2 occupation):ti,ab,kw
46	MeSH descriptor: [Social Skills] this term only
47	((group or interperson* or inter person*) near/2 skill*):ti,ab,kw
48	(Social near/3 (skill* or competen* or abilit*)):ti,ab,kw
49	MeSH descriptor: [Horticultural Therapy] this term only
50	(ecotherapy or eco therapy or nature therapy or ecological therapy):ti,ab,kw
51	(horticultur* near/3 therap*):ti,ab,kw
52	(morita therap*):ti,ab,kw
53	MeSH descriptor: [Mindfulness] this term only
54	(Mindfulness):ti,ab,kw
55	MeSH descriptor: [Family Therapy] this term only

#	Searches
56	(psychoeducat*):ti,ab,kw
57	(Family near/2 (therap* or intervention* or psychiatry or psychotherap* or treat*)):ti,ab,kw
58	MeSH descriptor: [Social Support] explode all trees
59	(Peer near/2 support*):ti,ab,kw
60	(peer-to-peer near/2 support*):ti,ab,kw
61	MeSH descriptor: [Art Therapy] this term only
62	MeSH descriptor: [Music Therapy] this term only
63	MeSH descriptor: [Animal Assisted Therapy] explode all trees
64	(Clubhouse* or club house*):ti,ab,kw
65	((pet* or animal*) near/2 therap*):ti,ab,kw
66	((group or team) near/2 (activit* or game* or skill*)):ti,ab,kw
67	((positive behavio?r*) near/2 (intervention* or support*)):ti,ab,kw
68	MeSH descriptor: [Vocational Education] this term only
69	MeSH descriptor: [Rehabilitation, Vocational] this term only
70	MeSH descriptor: [Job Application] this term only
71	(job near/3 (hunt* or find* or search* or seek*)):ti,ab,kw
72	MeSH descriptor: [Computer Literacy] this term only
73	(computer near/2 (skill* or literate or literacy)):ti,ab,kw
74	(information technolog* near/2 skill*):ti,ab,kw
75	(IT skill*):ti,ab,kw
76	MeSH descriptor: [Employment, Supported] this term only
77	MeSH descriptor: [Sheltered Workshops] this term only
78	(recover* near/2 college*):ti,ab,kw
79	(vocation* near/2 (school* or train* or educat* or rehab* or resource* or support*)):ti,ab,kw
80	((supported or program* or placement*) near/2 (work or employment)):ti,ab,kw
81	((protected or sheltered) near/2 workshop):ti,ab,kw
82	(transition* near/2 employment):ti,ab,kw
83	MeSH descriptor: [Community Participation] this term only
84	((communit* or education* or employment or voluntary or volunteer or volunteering) near/2 opportunit*):ti,ab,kw
85	MeSH descriptor: [Social Participation] this term only
86	(social near/2 (participat* or involve* or engage*)):ti,ab,kw
87	(participatory near/2 (art or arts)):ti,ab,kw
88	(#24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52 OR #53 OR #54 OR #55 OR #56 OR #57 #58 OR #59 OR #60 OR #61 OR #62 OR #63 OR #64 OR #65 OR #66 OR #67 OR #68 OR #69 OR #70 OR #71 OR #72 OR #73 OR #74 OR #75 OR #76 #77 OR #78 OR #79 OR #80 OR #81 OR #82 #83 OR #84 OR #85 OR #86 OR #87)
89	#13 and #24 and #88 with Cochrane Library publication date Between Jan 1990 and Jan 2019

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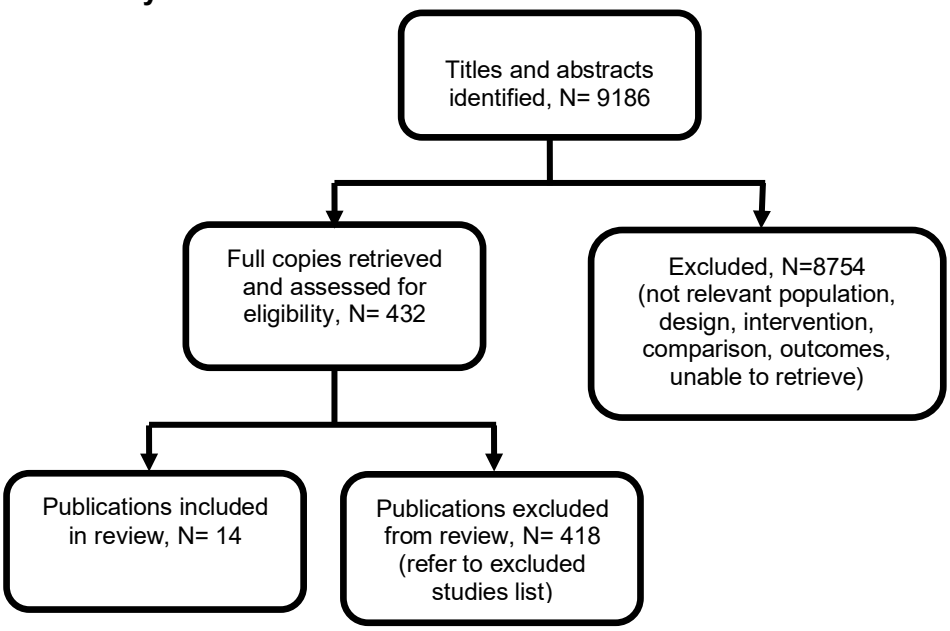
Appendix C – Clinical evidence study selection

Clinical study selection for review question 5.3: What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work?

Figure 2: Study selection flow chart



Appendix D – Clinical evidence tables

Clinical evidence tables for review question: 5.3 What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work?

Table 5: Clinical evidence tables for interventions to improve engagement in community activities

Study details	Participants	Interventions	Outcomes and Results	Comments
Full citation Areberg, C., Bejerholm, U., The effect of IPS on participants' engagement, quality of life, empowerment, and motivation: a randomized controlled trial, Scandinavian journal of occupational therapy, 20, 420-428, 2013 **Ref Id** 905829 **Country/ies where the study was carried out** Sweden **Study type** RCT **Aim of the study**	**Sample size** 120 **Characteristics** Diagnosis: 64% psychotic disorder, 8% bipolar, 28% other Setting: participants were recruited from all 6 mental health teams in a southern Swedish city. Age: 18-63, mean 38 years Gender: 56% male Ethnicity: 64% native, 36% immigrant **Inclusion criteria** Serious Mental Illness: a psychosis diagnosis or a psychiatric diagnosis where the psychiatric disabilities significantly impact on everyday life functioning on a long-term basis (2 years); in receipt of mental health services, aged between 18 and 63, have the ability to understand and read Swedish, and provide written	**Interventions** Intervention: IPS (fidelity to the IPS model ensured by intensive training/ consultation and ongoing monitoring using the IPS Fidelity Scale) Comparison: Traditional vocational rehabilitation. Typically, pre-vocational training in sheltered setting.	**Results** Follow-up 18 months Percentage of participants who obtained competitive employment Percentage of participants who obtained non-competitive employment Weeks in competitive employment Days to first competitive employment Dropouts Quality of life (MANSA) *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Low risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) Low risk Incomplete outcome data (attrition bias) High risk (27% lost to follow-up) Selective reporting (reporting bias) Low risk Other bias Low risk **Other information** Data also reported in Bejerholm 2015

Study details	Participants	Interventions	Outcomes and Results	Comments
To examine the effectiveness of individual placement and support (IPS) in terms of occupational engagement, work-motivation, empowerment, and quality of life among people with severe mental illness. **Study dates** 2008 - 2011 **Source of funding** Not reported	consent, had not worked in the preceding year, and have a desire to work in the near future. **Exclusion criteria** Somatic co-morbidity causing reduced ability to work.			
Full citation Bartels, S. J., Pratt, S. I., Mueser, K. T., Forester, B. P., Wolfe, R., Cather, C., Xie, H., McHugo, G. J., Bird, B., Aschbrenner, K. A., et al.,, Long-term outcomes of a randomized trial of integrated skills training and preventive healthcare for older adults with serious mental illness, American Journal of Geriatric Psychiatry, 22, 1251-1261, 2014	**Sample size** 183 **Characteristics** Diagnosis: 28% schizophrenia, 28% schizoaffective disorder, 20% bipolar disorder, 24% major depression. Setting: community dwelling adults. Mean age: 60.2 years. **Inclusion criteria** Community-dwelling adults with serious mental illness age 50 or older recruited from two community	**Interventions** Intervention: Psychosocial skills training. The HOPES intervention: a psychosocial intervention comprised of 12 months of weekly skills training classes, twice-monthly community practice trips, and monthly nurse preventive healthcare visits, followed by a 1-year maintenance phase of monthly sessions. HOPES social rehabilitation curriculum, based on social skills training, is manualized and organized into seven	**Results** Follow-up 36 months Activities of daily living: Independent Living Skills Scale (ILSS) - Global Engagement in community: Multinomah Community Ability Scale (MCAS) total Social skills: Social Behavior Schedule (SBS) total Quality of life: SF-36 Physical Component total Readmission/relapse: acute psychiatric hospitalization	**Limitations** Random sequence generation: unclear risk; stratified block randomization performed with details of random sequence generation within the blocks not described in detail Allocation concealment: unclear risk, allocation concealment not described Blinding of participants and personnel: unclear risk; participants were suggested not to reveal their intervention status to the assessors but

Study details	Participants	Interventions	Outcomes and Results	Comments
Ref Id 893619 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** To report 1-, 2-, and 3-year outcomes of a combined psychosocial skills training and preventive health care intervention (Helping Older People Experience Success [HOPES]) for older persons with serious mental illness, compared with treatment as usual (TAU) **Study dates** Not reported (grant funding ran from 2001 to 2007) **Source of funding** Grant from the National Institute of	mental health agencies in Boston, Massachusetts, and one in Nashua, New Hampshire. **Exclusion criteria** Exclusion criteria were residence in a nursing home or other institutional setting, primary diagnosis of dementia or significant cognitive impairment as indicated by a Mini Mental Status Exam score less than 20, 21 physical illness expected to cause death within 1 year, or current substance dependence.	modules: Communicating Effectively, Making and Keeping Friends, Making the Most of Leisure Time, Healthy Living, Using Medications Effectively, Living Independently in the Community, and Making the Most of a Health Care Visit. Comparison: TAU. Participants in both groups continued to receive the same services they had been receiving before the study. Routine mental health services at all sites included pharmacotherapy, case management, or outreach by non-nurse clinicians; individual therapy; and access to rehabilitation services, such as groups and psychoeducation.	*See forest plots for outcome data*	blinding of participants not described Blinding of outcome assessment: low risk; blinding for baseline and follow up assessments Attrition bias: low risk for all outcomes; comparable retention rates (87/93, 73/93 and 64/93 for intervention and 82/90, 76/90, 65/90 for treatment as usual at 1,2,3 year follow up) with reasons for drop out described Selective reporting: low risk; all outcomes reported in sufficient detail for analysis Other bias: low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
Mental Health (R01 MH62324).				
Full citation Bell, M. D., Bryson, G. J., Greig, T. C., Fiszdon, J. M., Wexler, B. E., Neurocognitive enhancement therapy with work therapy: productivity outcomes at 6- and 12-month follow-ups, Journal of rehabilitation research and development, 42, 829-838, 2005 **Ref Id** 951086 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** To evaluate whether cognitive remediation enhances work therapy (WT)by measuring productivity during the 6 months following training	**Sample size** N=151 **Characteristics** Diagnosis: schizophrenia or schizoaffective disorder (100%). Setting: outpatients treated at two mental health centres. Mean age 42 years; 58% male; 23% African American, 45% white. **Inclusion criteria** Diagnosis of schizophrenia or schizoaffective disorder as determined by PhD psychologists using the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV), Axis disorders, (SCID-I) procedures. **Exclusion criteria** Patients not sufficiently stable to participate if they had been hospitalized, changed psychiatric medications or housing, had an episode of drug abuse within the past 30 days, or had a Global Assessment of Functioning score of 30 or below. Known neurological disease and developmental disability.	**Interventions** Intervention: Cognitive remediation + work therapy. Computerized training using CogReHab plus weekly social information processing group Comparison: Work therapy.	**Results** Follow-up 12 months Percent in competitive employment Hours of competitive employment *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) low risk Allocation concealment (selection bias) low risk Blinding of participants and personnel (performance bias) high risk Blinding of outcome assessment (detection bias) high risk Incomplete outcome data (attrition bias) low risk (11% lost to follow-up) Selective reporting (reporting bias) low risk Other bias low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
compared to WT alone and particularly for those patients who responded to training with normalization of their working memory performance. **Study dates** 1998 to 2003 **Source of funding** Funded by the Department of Veterans Affairs, Rehabilitation Research and Development Service, grants D2128 and D5236-R.				
Full citation Bond, G. R., Kim, S. J., Becker, D. R., Swanson, S. J., Drake, R. E., Krzos, I. M., Fraser, V. V., O'Neill, S., Frounfelker, R. L., A Controlled Trial of Supported Employment for People With Severe Mental Illness and Justice Involvement, Psychiatric services (washington, D.C.), 66, 1027-1034, 2015	**Sample size** 90 **Characteristics** Diagnosis 53% schizophrenia, 18% depressive disorder, 25% bipolar disorder. Setting: Thresholds, a psychiatric rehabilitation agency. Age: ≥ 18 years, mean 43.8 years Gender: 79% male Ethnicity: 59% African American, 30% white **Inclusion criteria**	**Interventions** Intervention: IPS (fidelity to the IPS model ensured by intensive training/consultation and ongoing monitoring using the IPS Fidelity Scale) Comparison: Work Choice, a job club model for job skills training.	**Results** Follow-up: 12 months Percentage of participants who obtained competitive employment Percentage of participants in non-competitive employment Hospital admissions Dropouts *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Low risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) Low risk Selective reporting (reporting

Study details	Participants	Interventions	Outcomes and Results	Comments
Ref Id 950983 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** To establish whether IPS is effective for people with severe mental illness who have a history of arrest or incarceration. **Study dates** 2012 - 2013 **Source of funding** Supported by grant H133G100110 from the NationalInstitute of Disability and Rehabilitation Research.	Diagnosis: severe mental illness according to state criteria that is, diagnosis of schizophrenia spectrum disorder, bipolar disorder, or other psychotic disorder and either significant treatment history or significant functional impairments. Involvement in the criminal justice system. **Exclusion criteria** Any legal, physical or other restriction that would prevent participating, including pending criminal charges.			bias) Low risk Other bias Low risk
Full citation Bond, G. R., Salyers, M. P., Dincin, J., Drake, R., Becker, D. R., Fraser, V.	**Sample size** 200 **Characteristics**	**Interventions** Intervention: IPS (fidelity to the IPS model ensured by intensive	**Results** Follow-up 24 months	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment

Study details	Participants	Interventions	Outcomes and Results	Comments
V., Haines, M., A randomized controlled trial comparing two vocational models for persons with severe mental illness, Journal of consulting and clinical psychology, 75, 968-982, 2007 **Ref Id** 952462 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** To compared 2 approaches to vocational rehabilitation for individuals with severe mental illness: the IPS model of supported employment and the diversified placement approach (DPA). **Study dates** 1999-2002 **Source of funding**	Diagnosis 39% schizophrenia, 17% schizoaffective disorder, 24% bipolar disorder, 17% depression. Setting: Thresholds, psychiatric rehabilitation service. Age: ≥ 18 years, mean 38.8 years Gender: 64% male Ethnicity: 51% African American, 38% white, 8% Hispanic Substance use: 32% used alcohol and 21% used drugs during study. **Inclusion criteria** Diagnosis of severe mental illness according to State of Illinois criteria, i.e. DSM IV criteria of schizophrenia spectrum disorder, bipolar disorder, obsessive-compulsive disorder or other psychotic disorder and either significant treatment history or significant functional impairments **Exclusion criteria** Comorbidity likely prevent participation in work.	training/consultation and ongoing monitoring using the IPS Fidelity Scale) Comparison: Clubhouse (diversified placement approach - DPA)	Percentage of participants who obtained competitive employment Days in competitive employment Hospital admissions *See forest plots for outcome data*	(selection bias) Low risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) Low risk (86% complete follow-up) Selective reporting (reporting bias) Low risk Other bias Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
Study was supported by Grant R01MH59987 from the National Institute of Mental Health.				
Full citation Burns, T., Catty, J., Becker, T., Drake, R. E., Fioritti, A., Knapp, M., Lauber, C., Rössler, W., Tomov, T., van Busschbach, J., et al.,, The effectiveness of supported employment for people with severe mental illness: a randomised controlled trial, Lancet (london, england), 370, 1146-1152, 2007 **Ref Id** 949954 **Country/ies where the study was carried out** UK, Germany, Italy, Switzerland, Netherlands and Bulgaria **Study type** RCT	**Sample size** 312 **Characteristics** Diagnosis: 80% schizophrenia or schizoaffective disorder, 17% bipolar disorder. Setting: 6 European mental health centres. Age: between 18 years and local retirement age, mean 37.8 years, Gender: 60% male, Ethnicity: 90% born in country of residence. **Inclusion criteria** Diagnosis: severe mental illness & had been ill and had major role dysfunction for at least 2 years **Exclusion criteria** None reported	**Interventions** Intervention: IPS (fidelity to the IPS model ensured by intensive training/consultation and ongoing monitoring using the IPS Fidelity Scale) Comparison: Vocational services (best alternative available locally).	**Results** Follow-up 18 months Percentage of participants who obtained competitive employment Days in competitive employment Hospital admissions Mental health (PANNS, HADS) Quality of life (QOLP) Dropouts *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Low risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) High risk (19% lost to follow-up) Selective reporting (reporting bias) Low risk Other bias Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
Aim of the study To assess the effectiveness of IPS, and whether its effect is modified by local labour markets and welfare systems. **Study dates** 2003-2005 **Source of funding** Study was funded by a grant from the European Union Quality of Life and Management of Living Resources Programme QLRT 2001-00683.				
Full citation Drake, R. E., McHugo, G. J., Bebout, R. R., Becker, D. R., Harris, M., Bond, G. R., Quimby, E., A randomized clinical trial of supported employment for inner-city patients with severe mental disorders, Archives of general psychiatry, 56, 627-633, 1999 **Ref Id**	**Sample size** N=152 **Characteristics** Diagnosis: 67% schizophrenia spectrum, 14% bipolar disorder, 16% depressive disorder) Setting: Community agency for people with SMD who need intensive case management usually due to homelessness, substance use disorder or HIV infection. Age: mean 39.4 years, Gender: 39% male, Ethnicity: 82% African American,	**Interventions** Intervention: IPS (fidelity to the IPS model ensured by intensive training/consultation and ongoing monitoring using the IPS Fidelity Scale) Comparison: Enhanced vocational rehabilitation	**Results** Follow-up 18 months (94.7% complete follow-up) Percentage of participants who obtained competitive employment Percentage of participants who obtained non-competitive employment Days to first competitive employment Quality of life (QOLI)	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Unclear risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) Low risk Selective reporting (reporting

Study details	Participants	Interventions	Outcomes and Results	Comments
951025 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** To replicate the New Hampshire study (Drake 1996) in Washington, DC, with a more diverse and disadvantaged group of patients with severe mental disorders and a typical variety of vocational agencies. **Study dates** 1994-1997 **Source of funding** Supported by grant MH51346 from the Substance Abuse and Mental Health Services Administration and the National Institute of Mental Health, Washington, DC, and grant MH00839 from the	Substance abuse: 9% current alcohol use disorder, 15% current drug use disorder. **Inclusion criteria** Diagnosis: Severe Mental Disorder criteria of District of Columbia Commission on Mental Health Services: major mental illness, defined as schizophrenia, schizoaffective disorder, bipolar disorder, recurrent major depression or borderline personality disorder, and at least 2 years of major role dysfunction. **Exclusion criteria** Memory impairment or medical comorbidity that would prevent working or participating in the study.		Mental health (BPRS) Dropouts *See forest plots for outcome data*	bias) Low risk Other bias Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
National Institute of Mental Health				
Full citation Drake, R. E., McHugo, G. J., Becker, D. R., Anthony, W. A., Clark, R. E., The New Hampshire study of supported employment for people with severe mental illness, Journal of consulting and clinical psychology, 64, 391-399, 1996 **Ref Id** 953203 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** The purpose of the present study was to compare two models of supported employment for people with severe mental illness.	**Sample size** N=140 **Characteristics** Diagnosis: 47% schizophrenia and related psychotic disorders, 43% bipolar and other severe mood disorders. Setting: community mental health centres Age: 20-65 years, mean 37.0 years, Gender: 48% male, Ethnicity: 95% white **Inclusion criteria** Diagnosis: a major mental illness with major role dysfunction of at least 2 years and clinical stability (i.e. out of the hospital) for at least 1 month. **Exclusion criteria** Significant memory impairment, medical illness or substance dependence.	**Interventions** Intervention: IPS (fidelity to the IPS model ensured by intensive training/consultation and ongoing monitoring using the IPS Fidelity Scale) Comparison: Group job skills training	**Results** Follow-up 18 months (97.9% complete follow-up) Percentage of participants who obtained competitive employment Dropouts *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Unclear risk Allocation concealment (selection bias) Unclear risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) Low risk Selective reporting (reporting bias) Low risk Other bias Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
Study dates 1991-1994 **Source of funding** None reported				
Full citation Gold, P. B., Meisler, N., Santos, A. B., Carnemolla, M. A., Williams, O. H., Keleher, J., Randomized trial of supported employment integrated with assertive community treatment for rural adults with severe mental illness, Schizophrenia Bulletin, 32, 378-395, 2006 **Ref Id** 907146 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study**	**Sample size** 143 **Characteristics** Diagnosis: 69% schizophrenia spectrum, 31% mood spectrum Setting: a rural Community Mental Health Centre. Age: ≥ 18 years, 71% between 26-45 years, Gender: 38% male, Ethnicity: 77% African American, 19% white Substance abuse: 9% current alcohol abuse/dependence, 8% current drug abuse/dependence **Inclusion criteria** Diagnosis: Federal Center for Mental Health Services' criteria for severe and persistent mental illness, based upon diagnosis, illness duration, and level of disability **Exclusion criteria** Not reported	**Interventions** Intervention: ACT (assertive community treatment) with IPS Comparison: traditional vocational rehabilitation.	**Results** Follow-up 24 months Percentage of participants who obtained competitive employment Percentage of participants who obtained non-competitive employment Weeks in competitive employment Days to first competitive employment Dropouts Hospital admissions *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Low risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) High risk (39% lost to follow-up) Selective reporting (reporting bias) Low risk Other bias: high risk (see below) **Other information** Study was initially a 3-arm trial comparing ACT-intensive vocational rehab, IPS and traditional vocational rehabilitation The ACT-IVR and IPS arms were combined due to lack of staff to deliver the interventions properly.

Study details	Participants	Interventions	Outcomes and Results	Comments
To explore whether supported employment is effective in coordinating rural-based services that are limited, loosely linked, and geographically dispersed. **Study dates** **Source of funding** Various grants from Center for Mental Health Services (CMHS), Substance Abuse and Mental Health Services Administration (SAMHSA) and National Institute of Mental Health (NIMH).				
Full citation Latimer, E. A., Lecomte, T., Becker, D. R., Drake, R. E., Duclos, I., Piat, M., Lahaie, N., St-Pierre, M. S., Therrien, C., Xie, H., Generalisability of the individual placement and support model of supported employment: results of a Canadian randomised controlled trial, British Journal of	**Sample size** 150 **Characteristics** Diagnosis: 59% schizophrenia spectrum and 20% bipolar disorder. Setting: a teaching psychiatric hospital with a vocational rehabilitation centre. Age: 18-64 years, mean 40.3 years; Gender: 62% male; Ethnicity: 82% white; Substance abuse: 4% alcohol	**Interventions** Intervention: IPS (fidelity to the IPS model ensured by intensive training/consultation and ongoing monitoring using the IPS Fidelity Scale) Comparison: Usual vocational rehabilitation services: these included sheltered workshops, creative workshops, a client-run boutique and horticultural	**Results** Follow-up 12 months. Outcomes: Engagement in community: 1 or more days worked in employment Engagement in community: hours worked in employment Dropouts *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Low risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
Psychiatry, 189, 65-73, 2006 **Ref Id** 935317 **Country/ies where the study was carried out** Canada **Study type** RCT **Aim of the study** To compare supported employment with standard vocational rehabilitation services in terms of employment outcomes. **Study dates** 2001-2003 **Source of funding** Study was funded by the Canadian Institutes of Health Research Health Research, the Quebec Fund and AETMIS.	misuse or dependence, 10% drug misuse or dependence. **Inclusion criteria** Between 18 and 64 years of age; diagnosis of schizophrenia-spectrum disorder, bipolar disorder, or major depression, classified as disabled due to mental illness by the provincial welfare system, unemployed but with interest in competitive employment. **Exclusion criteria** Learning disability (IQ <70), a physical or organic handicap that had a physical or organic handicap that seriously impeded work; no case manager willing to see them at least once per month.	programmes. Job-finding-skills training, as well as outpatient psychosocial interventions were available.		Selective reporting (reporting bias) Low risk Other bias Low risk
Full citation	**Sample size**	**Interventions**	**Results**	**Limitations**
	85		Follow-up 12 months	

Study details	Participants	Interventions	Outcomes and Results	Comments
Lindenmayer, J. P., McGurk, S. R., Mueser, K. T., Khan, A., Wance, D., Hoffman, L., Wolfe, R., Xie, H., A randomized controlled trial of cognitive remediation among inpatients with persistent mental illness, Psychiatric services (washington, D.C.), 59, 241-247, 2008 **Ref Id** 951007 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** To evaluate the feasibility and efficacy of a cognitive remediation program in improving cognitive and work functioning for intermediate- to long-stay psychiatric inpatients.	**Characteristics** Diagnosis: schizophrenia or schizoaffective disorder (84%); Setting: intermediate- to long-stay psychiatric inpatients. 89% male; 13% white, 58% African American; 80% substance abuse. **Inclusion criteria** DSM-IV diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder; stable use of medication for at least 3 months without plans for changing medication; and proficiency in English. **Exclusion criteria** Psychiatric history of mental retardation, brain injury, or neurological disorder;	Intervention: cognitive remediation + work therapy Comparison: attention control + work therapy	Weeks worked in the Patient Work Program at the psychiatric centre *See forest plots for outcome data*	Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Unclear risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk Incomplete outcome data (attrition bias) High risk (20% lost to follow-up) Selective reporting (reporting bias) Low risk Other bias Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
Study dates 2003-2005 **Source of funding** Not reported				
Full citation McGurk, S. R., Mueser, K. T., DeRosa, T. J., Wolfe, R., Work, recovery, and comorbidity in schizophrenia: a randomized controlled trial of cognitive remediation, Schizophrenia Bulletin, 35, 319-335, 2009 **Ref Id** 935535 **Country/ies where the study was carried out** USA **Study type** RCT **Aim of the study** To measure the impact of adding cognitive	**Sample size** N=34 **Characteristics** Diagnosis: 62% schizophrenia, 24% depression/anxiety, 6% bipolar disorder. Setting: a vocational rehabilitation programme in an urban medical centre. Age: ≥ 18 years; mean age 44.0 years; Gender: 59% male; Ethnicity: 62% African American, 15% Hispanic; Substance abuse: 26% current alcohol use disorder, 26% current drug use disorder **Inclusion criteria** Diagnosis: severe mental illness as defined by the New York Office of Mental Health, interest in obtaining work, history of unsatisfactory job ending. **Exclusion criteria** Not reported	**Interventions** Intervention: cognitive remediation plus vocational rehabilitation. Computer-based cognitive exercises (Cogpack). VR was internships and supported employment, Comparison: vocational rehabilitation: internships and supported employment.	**Results** Follow-up 24 months Number of participants in competitive employment Weeks in competitive employment Mental health (PANNS) *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Low risk Allocation concealment (selection bias) Unclear risk Blinding of participants and personnel (performance bias) Unclear risk Blinding of outcome assessment (detection bias) Unclear risk Incomplete outcome data (attrition bias) High risk (26% lost to follow-up) Selective reporting (reporting bias) Low risk Other bias Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
remediation to an internship-based vocational rehabilitation program. **Study dates** 2002 -2004 **Source of funding** New York State Office of Mental Health.				
Full citation McGurk, S. R., Mueser, K. T., Xie, H., Welsh, J., Kaiser, S., Drake, R. E., Becker, D. R., Bailey, E., Fraser, G., Wolfe, R., McHugo, G. J., Cognitive Enhancement Treatment for People With Mental Illness Who Do Not Respond to Supported Employment: A Randomized Controlled Trial, American journal of psychiatry, 172, 852-61, 2015 **Ref Id** 951161 **Country/ies where the study was carried out**	**Sample size** N=54 **Characteristics** Diagnosis: 83% schizophrenia. Setting: outpatient, community mental health agency. 75% male; 25% white, 61% African America; 15% substance abuse. **Inclusion criteria** a) Severe mental illness as defined by the State of New York (18 years of age or older; DSM-IV Axis I diagnosis other than drug or alcohol use disorders, organic brain syndromes, developmental disability or social condition; receiving Social Security Supple- mental Income/Social Security Disability Income due to a specific mental illness; extended impairment in	**Interventions** Intervention: Cognitive remediation plus supported employment. Cognitive remediation was the Thinking Skills for Work program. Comparison: Supported employment.	**Results** Follow-up 36 months Hours worked in competitive employment Percent in competitive employment *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Unclear risk Allocation concealment (selection bias) Unclear risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) Low risk Incomplete outcome data (attrition bias) Low risk Selective reporting (reporting bias) Low risk Other bias

Study details	Participants	Interventions	Outcomes and Results	Comments
USA **Study type** RCT **Aim of the study** To evaluate the effectiveness of cognitive remediation in those who had not responded to vocational rehabilitation. **Study dates** Not reported **Source of funding** Supported by grant #H133G050230 from the National Institute on Disability Rehabilitation and Research (NIDRR).	functioning due to mental illness; and reliance on psychiatric treatment, rehabilitation, and supports; b) currently enrolled in a vocational rehabilitation program for at least 3 months; c) has not benefited from recent vocational rehabilitation, defined as either has not worked for the past 3 months, including transitional employment jobs, or having a recent unsuccessful ending of a job (being fired or ending the job without another job in place) that lasted less than 3 months; and d) willing to sign informed consent to participate in the study. **Exclusion criteria** Any medical condition likely to result in significant decline in ability to work over the 18 months. of the study.			
Full citation Vauth, R., Corrigan, P. W., Clauss, M., Dietl, M., Dreher-Rudolph, M., Stieglitz, R. D., Vater, R., Cognitive strategies versus self-management skills as adjunct to vocational rehabilitation, Schizophrenia Bulletin, 31, 55-66, 2005	**Sample size** 138 **Characteristics** Diagnosis: 100% schizophrenia. Setting: inpatient rehabilitation ward. Mean age 29 years; 65% male. **Inclusion criteria**	**Interventions** Intervention: Cognitive remediation + work therapy Comparison 1: (Active control) Self-management skills training for negative symptoms + work therapy Comparison 2: (Passive control) Work therapy alone	**Results** Follow-up 12 months Successful job placement (more than 3 months of half- or full-time employment or at least sheltered workshop jobs) *See forest plots for outcome data*	**Limitations** Random sequence generation (selection bias) Unclear risk Allocation concealment (selection bias) Unclear risk Blinding of participants and personnel (performance bias) High risk Blinding of outcome assessment (detection bias) High risk

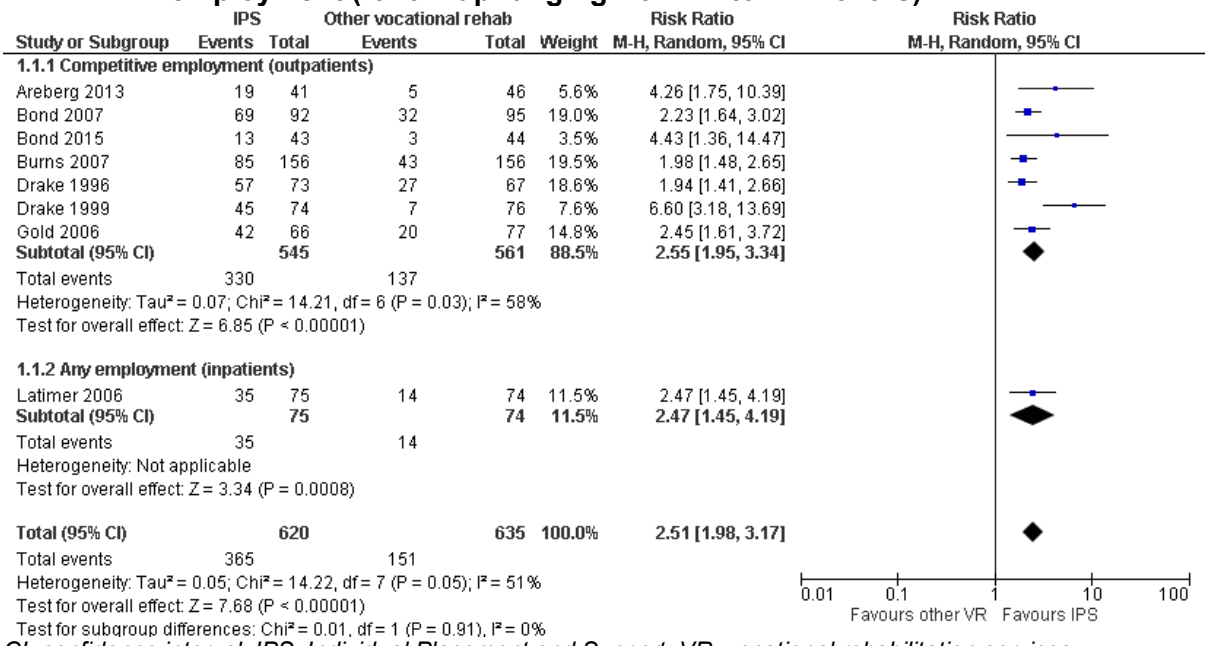
Study details	Participants	Interventions	Outcomes and Results	Comments
Ref Id 896456 **Country/ies where the study was carried out** Germany **Study type** RCT **Aim of the study** To establish whether cognitive training enhances recovery of cognitive deficits in the therapeutically targeted functional domains of attention, verbal memory, and planning. **Study dates** Not reported **Source of funding** Supported by grants of the Federal Ministry of Education and Research of the Federal Republic of Germany and the German Pension Insurance (Federation of German Pension	Patients with a DSM–IV diagnosis of schizophrenia admitted consecutively to a rehabilitation ward of the Department of Psychiatry and Center for Rehabilitation/Klinikum Karlsbad-Langensteinbach, Germany. **Exclusion criteria** Change in psychiatric medication, an episode of alcohol or drug abuse in the last 30 days			Incomplete outcome data (attrition bias) High risk (28% lost to follow-up) Selective reporting (reporting bias) Low risk Other bias Low risk

Study details	Participants	Interventions	Outcomes and Results	Comments
Insurance Institutes-VDR and its members)				

Appendix E – Forest plots

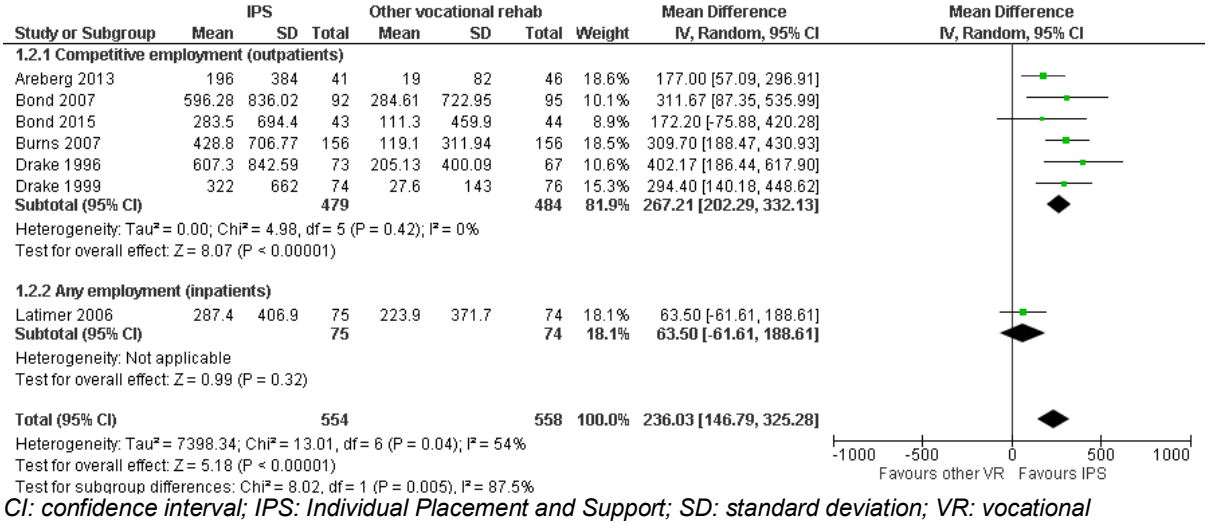
Forest plots for review question 5.3: What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?

Figure 3: Comparison 1. Individual Placement and Support versus other vocational rehabilitation services: Engagement in community: 1 or more days worked in employment (follow-up ranging from 12 to 24 months)



CI: confidence interval; IPS: Individual Placement and Support; VR: vocational rehabilitation services

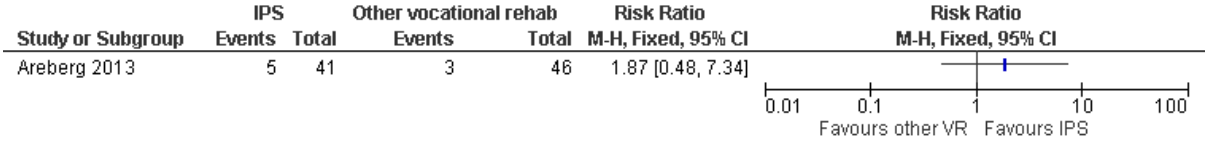
Figure 4: Comparison 1. Individual Placement and Support versus other vocational rehabilitation services: Engagement in community: hours worked in employment (follow-up ranging from 12 to 24 months)



CI: confidence interval; IPS: Individual Placement and Support; SD: standard deviation; VR: vocational rehabilitation services

1

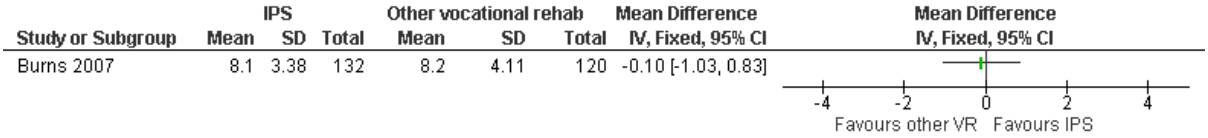
Figure 5: Comparison 1. Individual Placement and Support versus other vocational rehabilitation services: Engagement in community: participation in education (follow-up 18 months)



CI: confidence interval; IPS: Individual Placement and Support; VR: vocational rehabilitation services

2

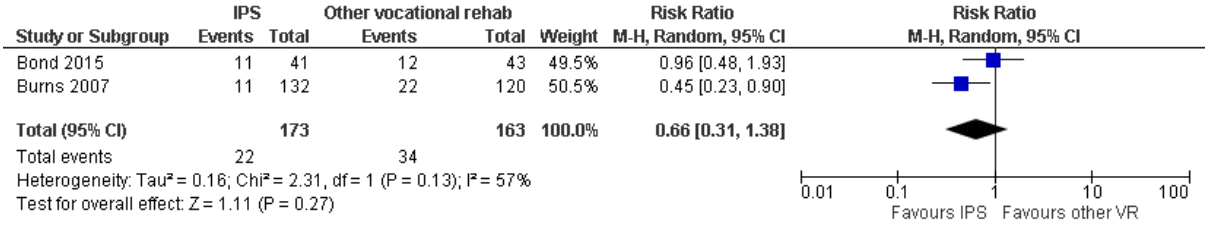
Figure 6: Comparison 1. Individual Placement and Support versus other vocational rehabilitation services: Social skills: Groningen Social Disability Schedule (GSDS) (range 0 to 21; higher better; follow-up 18 months)



CI: confidence interval; IPS: Individual Placement and Support; SD: standard deviation; VR: vocational rehabilitation services

3

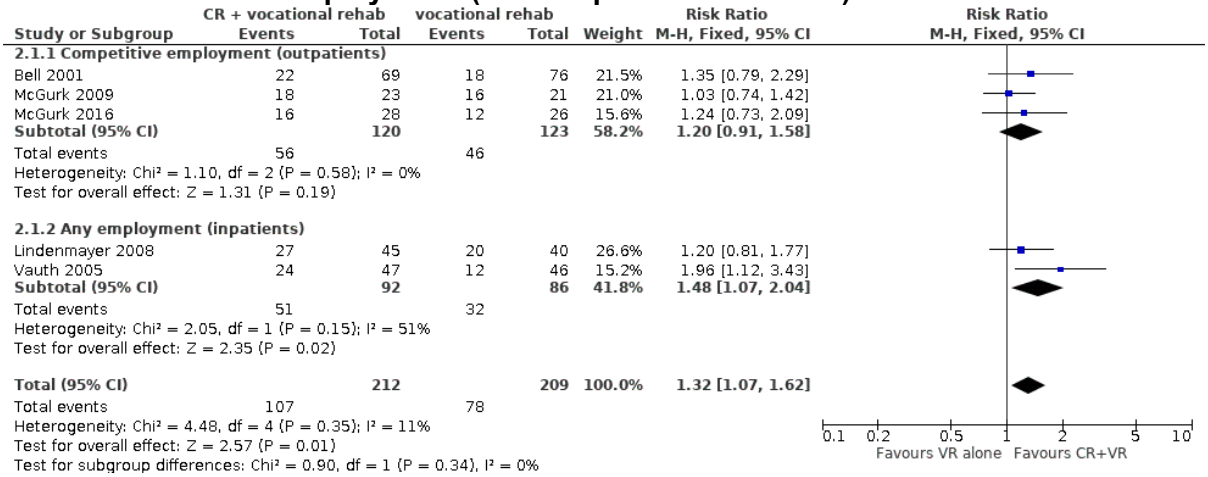
Figure 7: Comparison 1. Individual Placement and Support versus other vocational rehabilitation services: readmission (follow-up 6 to 12 months)



CI: confidence interval; IPS: Individual Placement and Support; VR: vocational rehabilitation services

1

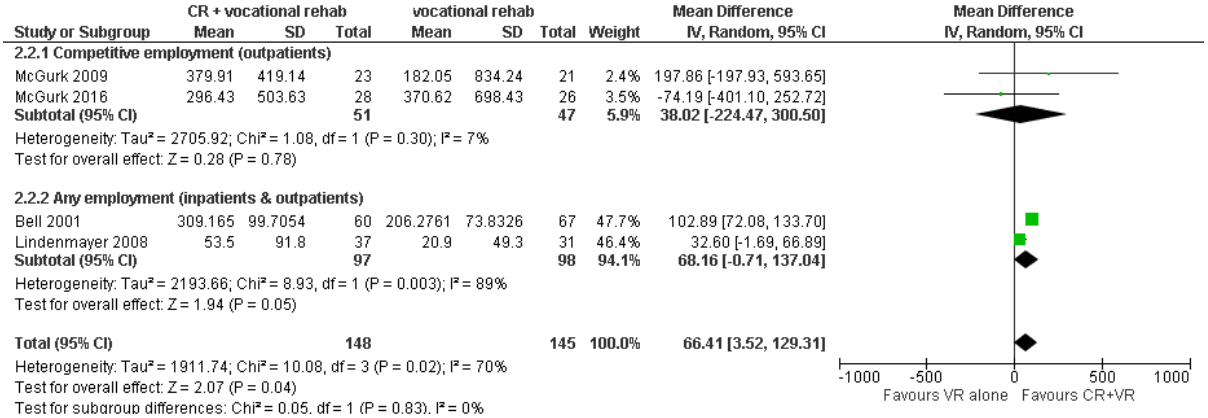
Figure 8: Comparison 2. Cognitive remediation plus vocational rehabilitation versus vocational rehabilitation alone: Engagement in community: 1 or more days worked in employment (follow-up 12 to 36 months)



CI: confidence interval; CR: cognitive remediation; VR: vocational rehabilitation services

2

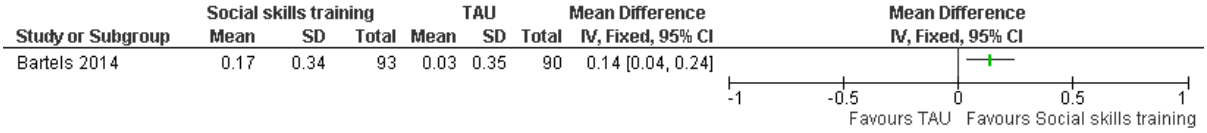
Figure 9: Comparison 2. Cognitive remediation plus vocational rehabilitation versus vocational rehabilitation alone: Engagement in community: hours worked in employment (follow-up 12 to 36 months)



CI: confidence interval; CR: cognitive remediation; SD: standard deviation; VR: vocational rehabilitation services

3

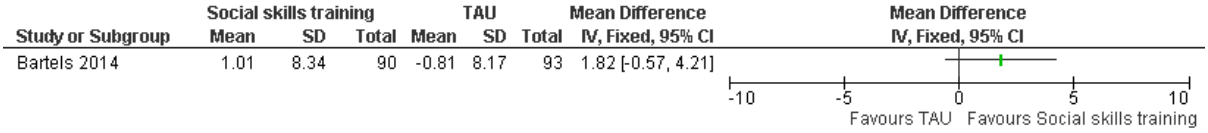
Figure 10: Comparison 3. Social skills training versus treatment as usual: Social skills: Multnomah Community Ability Scale total (range 0 to 85; higher better) – change from baseline to 36 months follow-up



CI: confidence interval; SD: standard deviation; TAU: treatment as usual

1

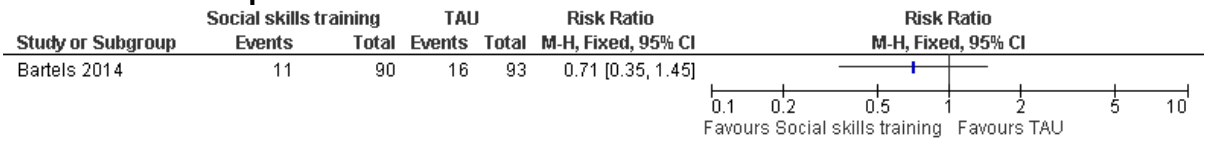
Figure 11: Comparison 3. Social skills training versus treatment as usual: Social skills: Social behaviour Schedule (range 0 to 84; lower better) – change from baseline to 36 months follow-up.



CI: confidence interval; TAU: treatment as usual

2

Figure 12: Comparison 3. Social skills training versus treatment as usual: Engagement in community: acute psychiatric readmission 36 months follow-up



CI: confidence interval; TAU: treatment as usual

3

Appendix F – GRADE tables

GRADE tables for review question: 5.3 What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?

Table 6: Clinical evidence profile for comparison 1. Individual Placement and Support versus other vocational rehabilitation services

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	IPS	Other vocational rehab services	Relative (95% CI)	Absolute	Quality	Importance
Engagement in community (follow-up 12 to 24 months; assessed with: 1 or more days of employment at any time during follow-up)												
8	randomised trials	serious[1]	no serious inconsistency[2]	no serious indirectness	no serious imprecision	none	365/620 (58.9%)	151/635 (23.8%)	RR 2.51 (1.98 to 3.17)	359 more per 1000 (from 233 more to 516 more)	MODERATE	CRITICAL
Engagement in community (follow-up 12 to 24 months; measured with: duration of employment in hours; Better indicated by higher values)												
7	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	554	558	-	MD 236.03 higher (146.79 higher to 325.28 higher)	MODERATE	CRITICAL
Engagement in community (follow-up 18 months; assessed with: participation in education)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	very serious[3]	none	5/41 (12.2%)	3/46 (6.5%)	RR 1.87 (0.48 to 7.34)	57 more per 1000 (from 34 fewer to 413 more)	VERY LOW	CRITICAL
Social skills (follow-up 18 months; measured with: Groningen Social Disability Schedule (GSDS); range of scores: 0-21; Better indicated by higher values)												

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	IPS	Other vocational rehab services	Relative (95% CI)	Absolute		
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[4]	none	132	120	-	MD 0.1 lower (1.03 lower to 0.83 higher)	LOW	IMPORTANT
Readmission/relapse (follow-up 6 to 12 months)												
2	randomised trials	serious[1]	serious[5]	no serious indirectness	very serious[3]	none	22/173 (12.7%)	34/163 (20.9%)	RR 0.66 (0.31 to 1.38)	71 fewer per 1000 (from 144 fewer to 79 more)	VERY LOW	IMPORTANT

CI: confidence interval; IPS: individual placement and support; MD: mean difference; RR: relative risk
1 High risk of bias due to lack of blinding. 3 studies had high attrition rates.
2 I-squared > 50% but not downgraded as all studies show a clear benefit to IPS. Random effects model used.
3 95% CI includes 2 default MIDs
4 95% CI includes one default MID.
5 I-squared > 50% random effects model used.

Table 7: Clinical evidence profile for comparison 2. Cognitive remediation plus vocational rehabilitation versus vocational rehabilitation alone

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Cognitive remediation plus vocational rehabilitation	Vocational rehabilitation alone	Relative (95% CI)	Absolute		
Engagement in community (follow-up 12 to 36 months; assessed with: 1 or more days of employment at any time during follow-up)												
5	randomised trials	serious[2]	no serious inconsistency	no serious indirectness	serious[1]	none	107/212 (50.5%)	78/209 (37.3%)	RR 1.32 (1.07 to 2.04)	119 more per 1000 (from 26	LOW	CRITICAL

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Cognitive remediation plus vocational rehabilitation	Vocational rehabilitation alone	Relative (95% CI)	Absolute		
										more to 388 more)		
Engagement in community (follow-up 12 to 36 months; measured with: duration of employment in hours; Better indicated by higher values)												
4	randomised trials	serious[2]	serious[3]	no serious indirectness	serious[1]	none	148	145	-	MD 66.41 higher (3.52 to 129.31 higher)	VERY LOW	CRITICAL

1 *CI: confidence interval; MD: mean difference; RR: relative risk*
2 *1 95% CI includes 1 default MID*
3 *2 High risk of bias due to lack of blinding. 2 studies had high attrition rates.*
4 *3 I-squared>70%, subgroup analysis by competitive vs any employment does not reduce heterogeneity. Random effects model used.*

5 **Table 8: Clinical evidence profile for comparison 3. Social skills training versus treatment as usual**

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Social skills training	TAU	Relative (95% CI)	Absolute		
Social skills (follow-up 12 months; measured with: Multnomah Community Ability Scale (MCAS) total (change from baseline); range of scores: 0-85; Better indicated by higher values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	90	93	-	MD 0.14 higher (0.04 to 0.24 higher)	MODERATE	CRITICAL
Social skills (follow-up 12 months; measured with: Social behaviour survey (SBS) change from baseline; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	90	93	-	MD 1.82 higher (0.57 lower to 4.21 higher)	LOW	IMPORTANT
Readmission/relapse												

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Social skills training	TAU	Relative (95% CI)	Absolute		
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	very serious[3]	none	11/90 (12.2%)	16/93 (17.2%)	RR 0.71 (0.35 to 1.45)	50 fewer per 1000 (from 112 fewer to 77 more)	VERY LOW	IMPORTANT
										50 fewer per 1000 (from 112 fewer to 77 more)		

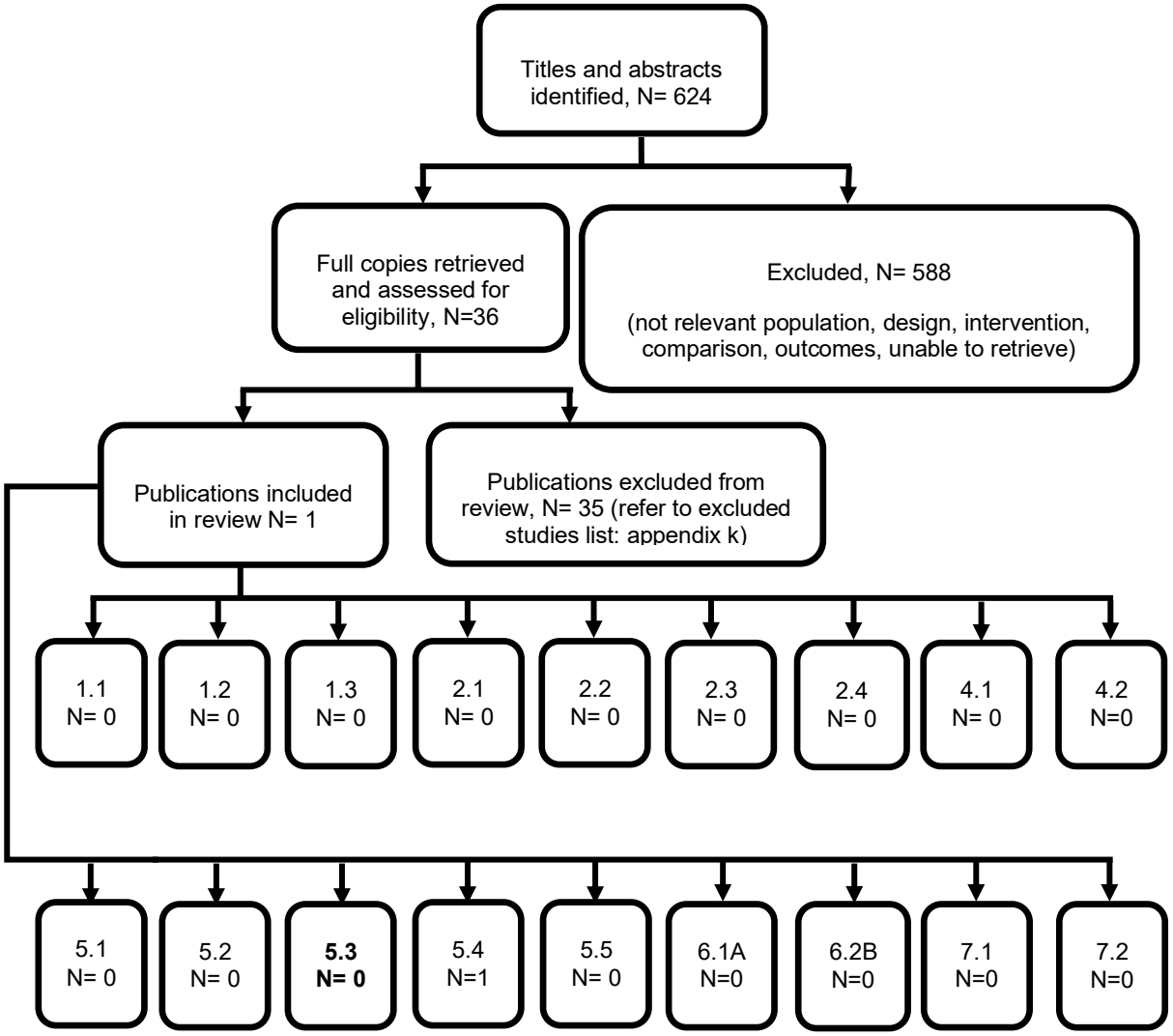
CI: confidence interval; MD: mean difference; RR: relative risk; TAU: treatment as usual
1 Unclear risk of bias due to allocation concealment, randomisation and blinding of participants/personnel.
2 95% CI includes 1 MID threshold.
3 95% CI includes 2 default MID thresholds

Appendix G – Economic evidence study selection

Economic evidence study selection for review question 5.3: What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?

A global health economic literature search was undertaken, covering all review questions in this guideline. However, as shown in Figure 13, no evidence was identified which was applicable to review question 5.3

Figure 13: Health economic study selection flow chart



Appendix H – Economic evidence tables

Economic evidence tables for review question 5.3: What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?

No evidence was identified which was applicable to this review question.

Appendix I – Economic evidence profiles

Economic evidence profiles for review question 5.3: What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?

No evidence was identified which was applicable to this review question.

Appendix J – Economic analysis for 5.3: A cost utility analysis of individual placement support versus other vocational rehabilitation services

Economic analysis for review question 5.3: What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?

1.1 Introduction

The committee highlighted engagement in community activities as being an important topic area for people with complex psychosis. Interventions relevant in this area were seen to have a potentially high resource impact and so were identified by the committee as a high priority topic for economic analysis.

A high proportion of people with severe mental illness are unemployed but would like to work. Individual placement support (IPS) is one work scheme intervention that has been developed for a range of mental illnesses and learning disability diagnoses. Evidence from the meta-analysis of this guideline systematic review points to IPS being an effective intervention in terms of the likelihood of being in competitive employment when compared to other vocational rehabilitation services (VRS) and with some evidence, albeit of low quality that IPS reduced readmissions.

The committee advised that, whilst IPS may be offered in many instances and has been recommended in NICE guidance for a number of conditions, (Autism spectrum disorder in adults CG142; Psychosis and schizophrenia in adults CG178), this has not been well implemented for those with complex psychosis in a rehabilitation setting. Many clinicians on the committee cited occasions when they had not been able refer patients to such a service. The committee expressed the view that, if a more explicit case could be made for the value of such an intervention, it would lend credence to the commissioning of such services.

No economic evaluations on this topic were identified in the global health economic search. A cost utility analysis of supported employment versus treatment as usual for adults with schizophrenia was identified in CG178. However, the committee felt that it was more appropriate to base any recommendations on the evidence elicited in the current guideline as the population would be more relevant. Owing to the lack of relevant economic evidence, a de novo economic evaluation was undertaken.

1.1.1 Aim

To estimate the cost-effectiveness of individual placement support (IPS) versus other vocational rehabilitation services for adults with complex psychosis and severe mental illness.

1.2 Methods

1.2.1 Cost utility analysis

This economic evaluation is conducted in the form of a cost utility analysis (CUA), with outcomes expressed in terms of this cost per QALY gained. The cost -effectiveness of an intervention is determined by examining the incremental cost (Ci – CC) divided by the incremental effect (EI – EC), where Ci and CC represent the cost of the intervention and control groups respectively, and EI and EC represent the outcomes of the intervention and control groups respectively. The result is expressed as the incremental cost effectiveness ratio (ICER). The results are also expressed as the incremental net monetary benefit (iNMB).

The analysis was conducted from the perspective of the NHS and PSS as outlined in the NICE Reference Case.

1.2.2 Setting and population

The model setting was for the NHS and the population were adults (aged 18 years and older) with complex psychosis and related severe mental health conditions who are living in the community. The setting was informed from studies included in the guideline meta-analysis.

1.2.3 Treatment strategies assessed

The interventions assessed in the economic analysis were informed from the respective clinical review which all cited Becker (2003) as the model for how IPS should be designed. This framework emphasizes rapid job searching, with a focus on competitive employment on the basis of patient preferences. Continued support to patient and employer is provided from an employment specialist working as a member of the mental health service contributing to treatment and delivery. The studies in the accompanying clinical review suggested that an IPS worker would not have caseload exceeding 25 patients.

The comparator for this analysis, ‘other vocational rehabilitation services’ was less clearly defined in the list of included studies. Areberg (2013) referred to the comparator as ‘traditional vocational rehabilitation’ in the local health care municipality. Burns (2007) was a multicentre RCT across 6 different European centres. The comparator was the best available local alternative and consisted of an assessment of a patient’s rehabilitation needs, and the provision of a structured training programme which aimed to combat deficits related to training for appropriate work skills. This programme was generally referred to as ‘day care’ across the 6 centres.

The studies of US origin were particularly heterogeneous in defining a comparator, described as variations of traditional vocational rehabilitation, job skills training or the clubhouse approach. This heterogeneity presented challenges in determining the most appropriate resource use estimates for the comparator. The committee agreed that it would be inappropriate to extract information for resource use from US studies as welfare provision is vastly different in comparison with Europe. Consequently, the comparator in this analysis is informed by the PSSRU 2015, a commonly used reference for UK economic evaluations and which describes ‘day care services’ as an appropriate comparator to IPS. Such services would include strategies to participation in work related activities amongst others. The committee advised that these services would also include some employment training so would be an appropriate comparator for the purposes of this analysis.

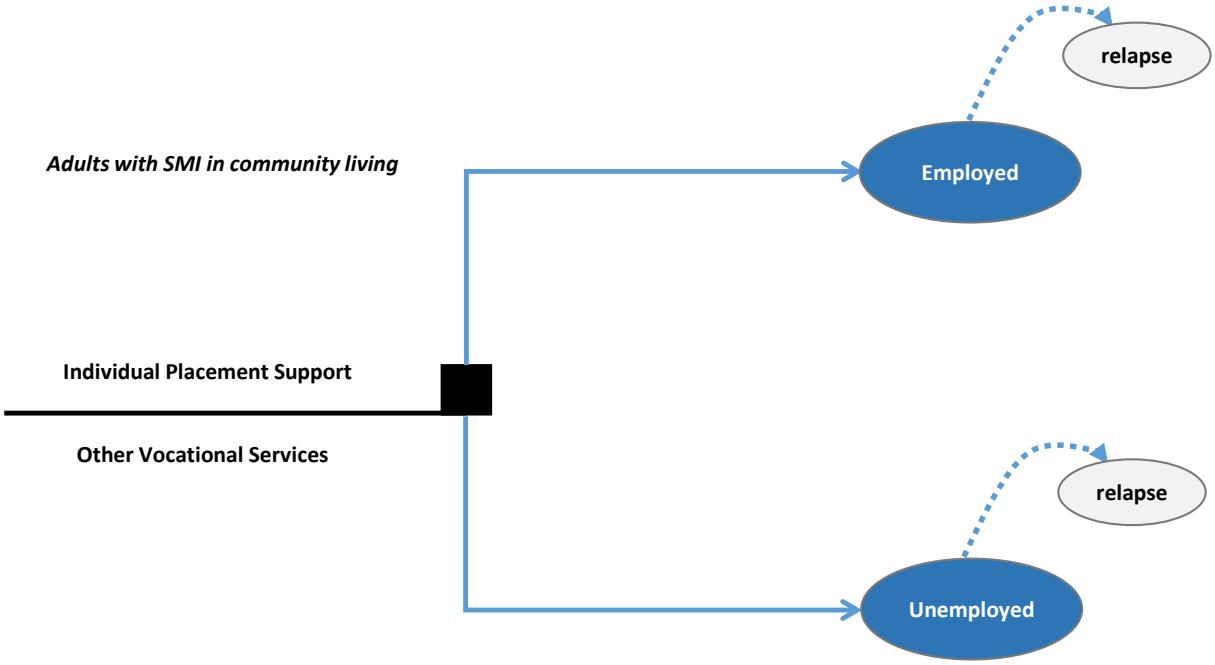
1.2.4 Model Structure

A simple decision analytic framework was developed in Microsoft Excel®, as displayed in Figure 14. The structure of the model was informed by the availability of the data elicited in the accompanying clinical review. A hypothetical cohort of patients is assigned to either IPS or VRS at the beginning of the tree, as represented by the black box. From here, each cohort enters one of 2 health states: employed or unemployed. In addition, the model incorporates data elicited from the clinical review for the risk of relapse after having been assigned to each intervention. Each cohort is followed to the end of the relevant treatment pathway, with costs and QALYs accrued to the time spent in each health state. The time horizon was determined by the weighted average of the length of registration from the studies in the meta-analysis, with each cohort followed for a total length of 19 months.

PSA was undertaken using Monte Carlo simulation in order to quantify uncertainty in the true values of the input parameters. Probability distributions were estimated for all input variables with the exception of the time of registration and time spent employed or unemployed. PSA involves sampling model inputs from a probability distribution that reflects the uncertainty around the point estimates in the deterministic model values. In addition to the base case results, the mean costs and QALYs associated with each intervention were calculated across all simulations and are displayed on a scatterplot. The results were also expressed as a mean iNMB at a cost effectiveness threshold of £20,000 per QALY gained and are displayed on a cost effectiveness acceptability curve (CEAC).

A series of one-way sensitivity analyses was also undertaken, where a single parameter was varied according to a specified high/low value, whilst holding all other inputs constant at their deterministic value. All relevant parameters were varied in order to ascertain the key drivers of the model. The degree to which varying one input impacts on the mean iNMB are stacked in rank order and have an appearance of a ‘Tornado’.

Figure 14: Decision tree for both individual placement support and other vocational rehabilitation services



Source/Note: SMI: Severe mental illness

1.2.5 Clinical data

Outcomes were limited to those reported in the studies pooled in the accompanying guideline meta-analyses. These outcomes were:

- Engagement in community: 1 or more days worked in employment
- Readmission

Engagement in community activities, expressed as working 1 day or more, informs the probability that a patient enters the health state employed or unemployed. Data included in the model was restricted to competitive employment as this included patients from community settings only rather than hospital and fitted with the nature of IPS which is specifically focused on competitive employment. The risk of readmission associated with IPS and VRS was also extracted from a meta-analysis of two included studies in the clinical review (See Figure 7).

It is necessary to estimate the length of time spent in each health state in order to attach a relevant health state utility for the days spent employed and unemployed. There was some evidence in the accompanying systematic review of the mean difference in hours worked between IPS and VRS. However, most studies did not report the variance in days, or whether this was related to competitive employment. Therefore, this analysis used data from one included study (Burns 2007) which reported days worked having spent 1 day in employment. The length of stay in hospital, having been readmitted, was a weighted average from the 2 included studies in the accompanying review (Bond 2015; Burns 2007). It was assumed that that once a patient is readmitted, the length of stay would not differ between a patient who had been on IPS compared with a patient with similar characteristics who had been on VRS.

The baseline risk represents the risk of the comparator treatment of being unemployed and was estimated from the control arm of the included studies. It should be noted that the

accompanying clinical review reported this as the risk of *employment* (See Figure 3). Using the Review Manager software, this was converted to the risk of *unemployment* to account for the reasonably large relative risk when sampling in the probabilistic analysis. The baseline values, as reported from the included studies of this review are displayed in Table 9.

Table 9: Reported baseline values

Variable	Value	Source
Employment	0.24	Guideline meta-analysis
Days in employment	108	Burns 2007
Readmission	0.21	Guideline meta-analysis
Days in readmission	10	Bond 2015; Burns 2007

The weighted average study length was 19 months. Therefore, the days spent in unemployment and the readmission rate were adjusted to correspond to the weighted average registration length of the included studies.These adjusted values, and the corresponding parameters used for probabilistic sampling for all baseline values are displayed in Table 10. The probability of readmission was converted from a probability over 17 months and into a probability over 19 months by the following formula:

$$r = -[\ln(1 - p)/t]$$

$$p = 1 - \exp\{-rt\}$$

Table 10: Baseline values used in the model with probabilistic parameters

Variable	Value	Alpha/low	Beta/high	Probability distribution
Unemployment [a]	0.76	425	136	Beta
Days in employment [b]	113	-	-	-
Days unemployed	461	-	-	-
Readmission [c]	0.23	34	129	Beta
Days in readmission [d]	11	8	12	Uniform

(a) Data from meta-analysis rearranged in review manager to give unemployment risk of the control arm
(b) Adjusted from 18.5 months to 19 months
(c) Converted into rate and then back into 19 month probability
(d) Weighted average of studies

The reported relative treatment effects, along with their 95% confidence intervals (CIs) are displayed in Table 11. These are expressed as relative risks (RRs), and were derived from the systematic review undertaken for this guideline. These relative treatment effects were applied to the baseline risk in order to estimate the risk of unemployment and the risk of readmission for IPS versus VRS. The average time spent in relapse from the included studies was the same value in the comparator and the intervention.

Table 11: Reported treatment effectiveness Values

Variable	Value	Lower value/limit of 95% CI	Upper value/limit of 95% CI	Source
Employment (relative risk)	2.55	1.95	3.34	Guideline meta-analysis
Days in employment	214	-	-	Burns 2007
Readmission	0.66	0.31	1.38	Guideline meta-analysis
Days in readmission	10	8	12	Bond 2015; Burns 2007

The values used in the deterministic analysis are displayed in Table 12 and Table 13 includes the assigned probabilistic parameters. RRs were assigned a Log-normal distribution. A uniform distribution was attributed to days in readmission for the PSA as it was believed that the number of days spent in relapse was equally likely to be any number of days between the low and high values (Bond 2015; Burns 2007).

Table 12: Relative treatment effect and days employed in individual placement support intervention

Variable	Value	Lower value/limit of 95% CI	Upper value/limit of 95% CI
Unemployment (relative risk) [a]	0.52	0.42	0.65
Days in employment [b]	224	-	-
Days unemployed	350	-	-
Readmission (relative risk)	0.66	0.31	1.38
Days in readmission [c]	11	8	12

(a) Data from meta-analysis rearranged in review manager to give unemployment risk of the control arm
(b) Adjusted from 18.5 months to 19 months
(c) Weighted average of studies

Table 13: Treatment effectiveness variables used in deterministic and probabilistic analyses

Variable	Mean	Standard error ((Ln(RR))	Probability distribution
Unemployment (relative risk)	0.52	0.11	Log-normal
Readmission (relative risk)	0.66 [a]	0.24	Log-normal
Days in readmission	11	-	Uniform

(a) Value used in model is 0.70 to reflect the probability over 19 months. In the probabilistic analysis, the model is set up to recalculate each iteration according the original confidence intervals, before calculating a 19-month probability and including for analysis in the model for each new iteration.

1.2.6 Resource use and costs

In accordance with NICE methodology, a NHS and PSS perspective was adopted for this analysis. Costs were based on a 2017/18 price year, reflecting the most recently available NHS Reference Costs at the time of writing. Costs were not discounted as all relevant costs occurred within the relatively short time horizon of the model.

The committee noted that there were many possible cost configurations for IPS and VRS. One approach considered was to estimate resource use from the trials identified in the systematic review. However, the studies had a range of differing resource use estimates which reflected the nature of the country of origin and the variety in comparator treatment strategies.

The approach undertaken in this analysis was to use costs reported from the PSSRU 2015 which included a range of possible costs for IPS based on staff banding and case load. The PSSRU includes 16 different cost options for IPS, each of which are included for possible selection in the model. The committee were in agreement that the caseload size should be costed for 20 people. There was some uncertainty within the committee about which band of staff would deliver the intervention, the committee confirmed IPS would likely be delivered by an unqualified member staff member at Band 4 or a qualified member of staff at Band 5. Both these cost values were assumed as defaults in separate PSAs.

Each listed unit cost per person for IPS, per annum is listed as including:

- salary
- salary on-costs
- overheads – staff
- overheads – other
- capital
- team leader
- marketing budget.

As noted in 1.2.3 Treatment strategies assessed, the committee were uncertain what the appropriate cost comparator would be to IPS. Owing to this ambiguity, as well as the variability of comparator interventions included in the accompanying clinical review, the costs of day care services were used as these were cited as the correct comparator to IPS in the PSSRU (2015) report. Whilst IPS is provided for a short period, day care services are said to be provided on an ongoing basis. The unit costs are reported per day, with sessions ranging from 34 to 131 annually. No further information was provided on the dispersion. The economic analysis conservatively assumed that day care was provided by a band 3 staff member, also with a caseload of 20 people for 34 sessions per year (the lowest possible number of sessions). Costs for both IPS and the comparator were calculated over 19 months.

In addition to the intervention costs, each health state was assumed to have a corresponding cost. The costs of relapse were extracted from NHS Reference Costs 2017/18. For the health states ‘employed’ or ‘unemployed’, costs were informed from a study citied within the PSSRU (2015) report (Schneider 2009) which estimated the changes in costs to public services as a result of being employed or unemployed. These services included:

- mental health services – contacts with psychiatrist, psychologist and community psychiatric nurse

- primary care – contacts with GP and district nurse
- other secondary NHS care – outpatient appointments and inpatient care for non-mental health needs

Table 14: Model unit costs

Cost variable	Value	Standard error [a]	alpha	beta	Probability distribution[b]	Source
Individual Placement Support (IPS)	£2,981	596	25	119.24	Gamma	PSSRU 2015
Day Care services (VRS) – 34 sessions per year [c]	£2,171	434	25	86.85	Gamma	PSSRU 2015
Cost of services whilst in employment (weekly)	£55	10	32	1.73	Gamma	PSSRU 2015 (cited from Schneider 2009)
Cost of services whilst unemployed (weekly)	£42	7	32	1.31	Gamma	PSSRU 2015 (cited from Schneider 2009)
Cost of readmission to acute care (daily – Cluster 14)	£455	46	100	4.55	Gamma	NHS reference costs – 2017/18 – MHCC13

(a) Standard error supposed owing to lack of provided data. Alpha and beta parameters fitted by method of moments approach (Briggs 2006)
(b) Costs constrained to be non-negative to reflect skew.
(c) 34 sessions per year represents the lowest possible number of sessions according to the PSSRU 2015

1.2.7 Quality adjusted life years

As recommended in the NICE reference case, the model estimates effectiveness in terms of QALYs. These are estimated by combining the life year estimates with utility values (or quality of life weights) associated with being in a particular health state, in this instance being employed, unemployed or having experienced a relapse. Utility values are on a scale of 0 (death) to 1 (perfect health).

The systematic search of the literature did not identify studies reporting utility scores for this patient population. In order to estimate QALYs for adults with psychosis in either the employed or unemployed health states, utility values were extracted from Squires (2012). In this study, quality of life scores from the Short Form Health Survey – 36 Items (SF-36) were mapped into SF-6D utilities to characterise the utility of 'being at work' and 'being on long term sick leave'. SF-6D utilities are reported for four age categories: under 35 years; 35 to 45 years; 45 to 55 years; and over 55 years. This model includes the utility scores for adults aged below 35 years since this was the age range that best fits the patient population from the studies included in the accompanying clinical review. The incremental difference in utility is also smaller for this age group, thus providing a more conservative estimate and potentially underestimating the benefits of being in work. It may also be the case that the utility of being on sick leave, superimposed to the health state of being 'unemployed' in this

model overestimates the utility associated with being unemployed for the patient population included in this economic analysis. Owing to the uncertainty in the utility estimates to inform QALYs, further sensitivity analysis was conducted to assess the impact on cost effectiveness from a range of plausible values.

The utility associated with a patient experiencing a relapse was obtained from Briggs (2008). This study estimated EQ-5D utility scores of stable schizophrenia and relapse, derived from patients and laypersons from the UK. Values elicited from laypersons were included in the model, in accordance with the NICE reference case.

Table 15: Utilities used in the model to compute quality adjusted life years

Utilities	Value	alpha	beta	Probability distribution	Source
Employed	0.83	83	17	Beta	Squires 2012 *
Unemployed	0.66	66	34	Beta	Squires 2012 *
Relapse	0.48	48	52	Beta	Briggs 2008

** Values also cited in CG178 (Schizophrenia) and CG142 (Autism)*

1.2.8 Sensitivity analysis

The results of the economic analysis are presented in the form of 3 PSA and multiple deterministic sensitivity analyses. The values used in the one-way sensitivity analysis, presented in the form a Tornado diagram are displayed in Table 16. Two tornado analyses were operated, one for IPS being delivered by a Band 4 staff member, the other a Band 5 staff member and length in readmission being 30 days (rather than 10 days) as default – as according to the committee's professional experience.

Table 16: Variables included in one-way sensitivity analysis

Variable	Low value	High value
Cost of IPS [c]	£3,747 (£4,036)	£5,621 (£6,054)
Cost of VRS	£2,730	£4,094
Days employed – IPS	179	269
Days employed – VRS	90	136
Relative risk unemployment [a]	0.42	0.65
Baseline risk unemployment	0.61	0.91
Relative risk readmission [a]	0.31	1.38
Baseline risk readmission	0.17	0.25
Utility of being employed	0.66	1.00
Utility of being unemployed	0.53	0.79
Cost of services – employed	£44	£66
Cost of services – unemployed	£34	£50
Days in relapse – IPS [b]	8 (20)	12 (50)
Days in relapse – VRS [b]	8 (20)	12 (50)

(a) High/low confidence intervals used
(b) Lowest and highest number from studies included in guideline systematic review. Brackets refer to high low values on GC estimate of time spent in relapse
(c) Brackets refers to higher cost configuration at Band 5 of IPS

1.3 Results

1.3.1 Probabilistic sensitivity analysis

Owing to the differing cost configuration of IPS in the clinical review and amongst the committee, 3 PSAs were conducted based on:

- cost of IPS delivered by a band 4 staff member with a caseload of 20 patients
- cost of IPS delivered by a band 5 staff member with a caseload of 20 patients
- cost of IPS delivered by a band 5 staff member with a caseload of 20 patients and time spent in relapse is 30 days.

The default comparator in this analysis is 'day care services', delivered by a band 3 staff member at a conservative estimate of 34 sessions per year.

The results are based on 10,000 Monte Carlo simulations of the model. A positive iNMB can be interpreted as the intervention, in this analysis IPS, being cost effective at £20,000 per QALY gained. The probability of IPS being cost effective is set at the £20,000 per QALY threshold. The results of the PSA output are displayed in Table 17.

The mean costs and QALYs of each cost assumption on IPS provision, along with the incremental differences are also displayed in Table 18, Table 19 and Table 20.

Table 17: Mean incremental net monetary benefit and probability of individual placement support being cost effective

Unit cost configuration of IPS	Mean iNMB	Probability IPS is cost effective (n=10,00)
Band 4: Caseload 20: £2754 pa	£226	58%
Band 5: Caseload 20: £2966 pa	-£135	47%
Band 5: Caseload 20: £2966 pa and time in relapse mean is 30 days	£614	62%

Table 18: Mean costs and quality adjusted life years: individual placement support provided at band 4 with a caseload of 20 patients

	Cost		QALYs		
Treatment Strategy	Total	Incremental	Total	Incremental	ICER (n=10,000)
Other vocational rehabilitation services	£8,672	-	1.035	-	-
Individual placement support	£9,457	£784	1.084	0.05	£15,890

Table 19: Mean costs and quality adjusted life years: individual placement support provided at band 5 with a caseload of 20 patients

	Cost		QALYs		
Treatment Strategy	**Total**	**Incremental**	**Total**	**Incremental**	**ICER (n=10,000)**
Other vocational rehabilitation services	£8,770	-	1.036		-
Individual placement support	£9,892	£1,121	1.085	0.05	£22,745

Table 20: Mean costs and quality adjusted life years: individual placement support provided at band 5 with a caseload of 20 patients and mean days in readmission = 30 days

	Cost		QALYs		
Treatment Strategy	**Total**	**Incremental**	**Total**	**Incremental**	**ICER (n=10,000)**
Other vocational rehabilitation services	£10,986	-	0.996		-
Individual placement support	£11,324	£338	1.044	0.05	£7,105

Figure 15 displays the CEAC when the deterministic cost of IPS is provided by a staff member at band 4 with a caseload of 20 patients. The scatter plot of the individual simulations that generated this probabilistic result is displayed in Figure 16. The yellow plot represents the average of all simulations and the red line represents the cost effectiveness threshold at £20,000 per QALY.

Figure 15: Cost effectiveness acceptability curve for individual placement support versus other vocational rehabilitation services: individual placement support provided by a staff member on band 4

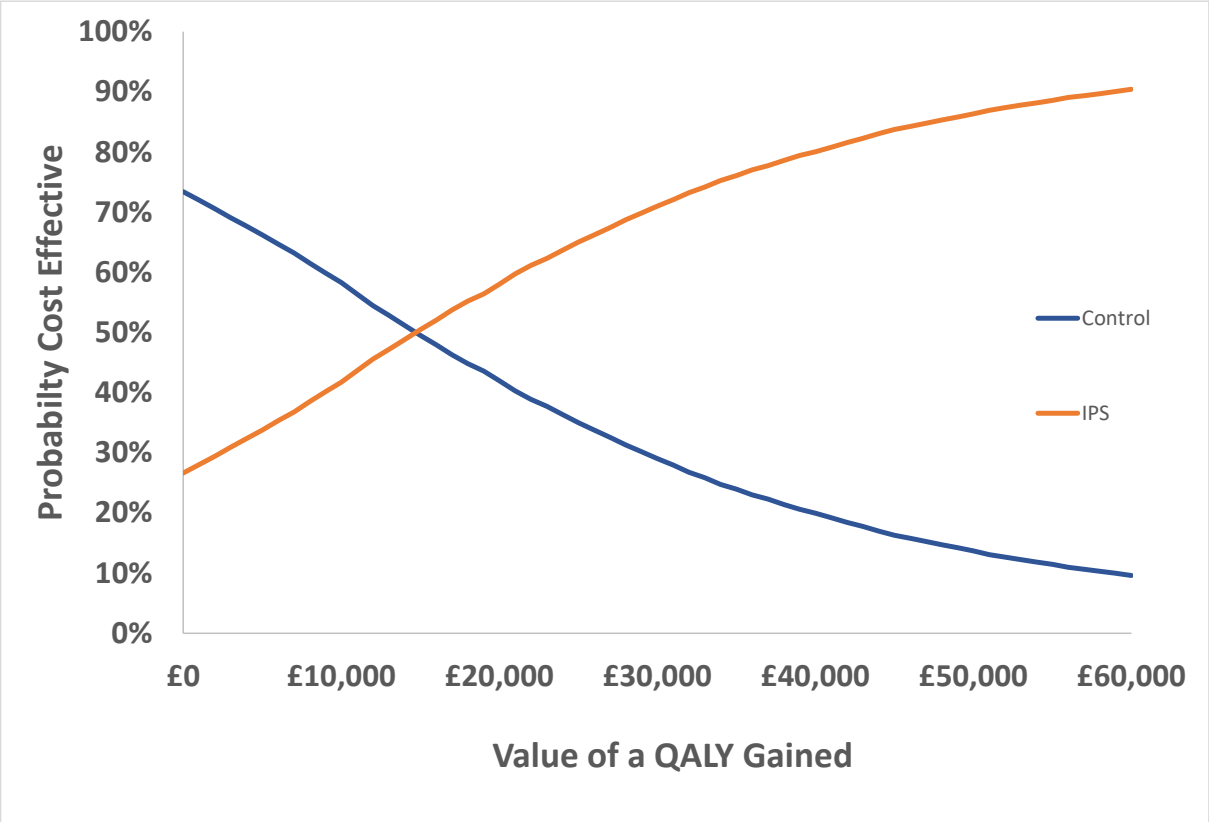
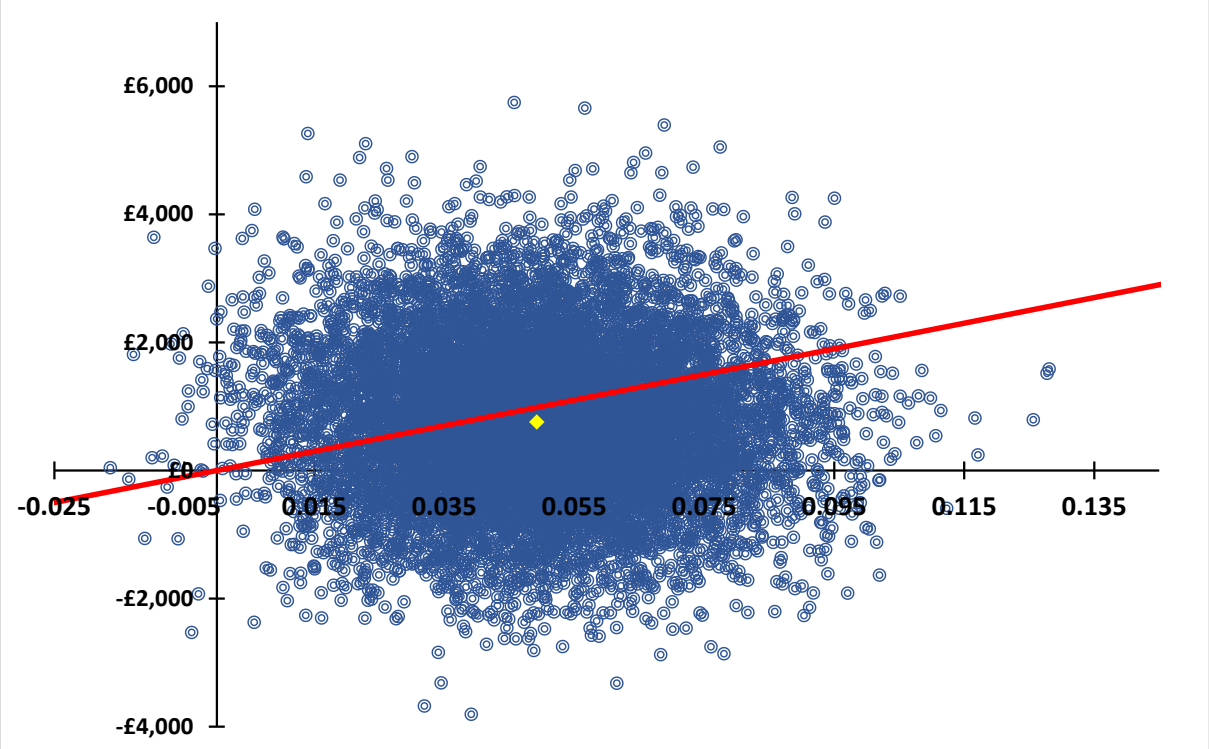


Figure 16: Cost-effectiveness plane for individual placement support versus other vocational rehabilitation services: individual placement support provided by a staff member on band 4



The PSA was also run for when the deterministic cost of IPS is provided by a staff member at band 5, with a caseload of 20 patients. The CEAC for this simulation is displayed in Figure 17. The scatter plot of the individual simulations that generated this probabilistic result is displayed in Figure 18.

Figure 17: Cost effectiveness acceptability curve for individual placement support versus other vocational rehabilitation services: individual placement support provided by a staff member on band 5

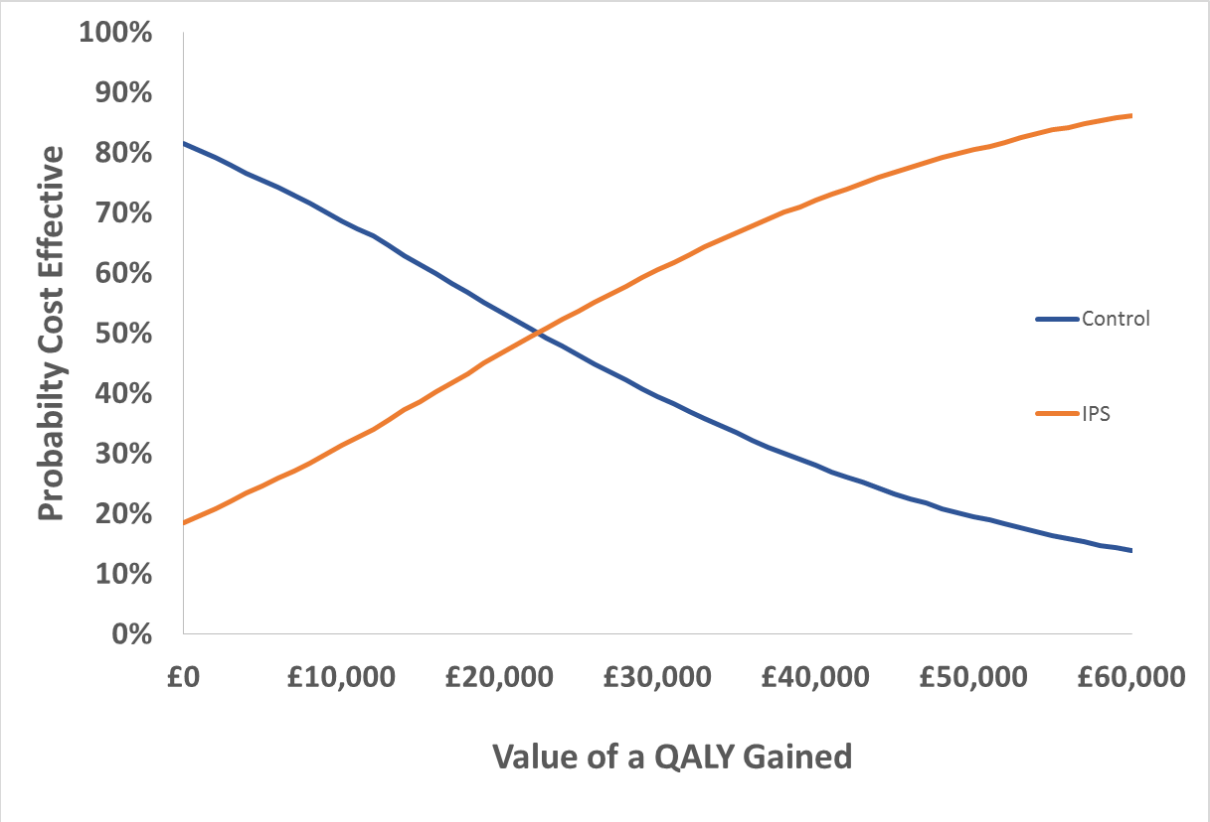
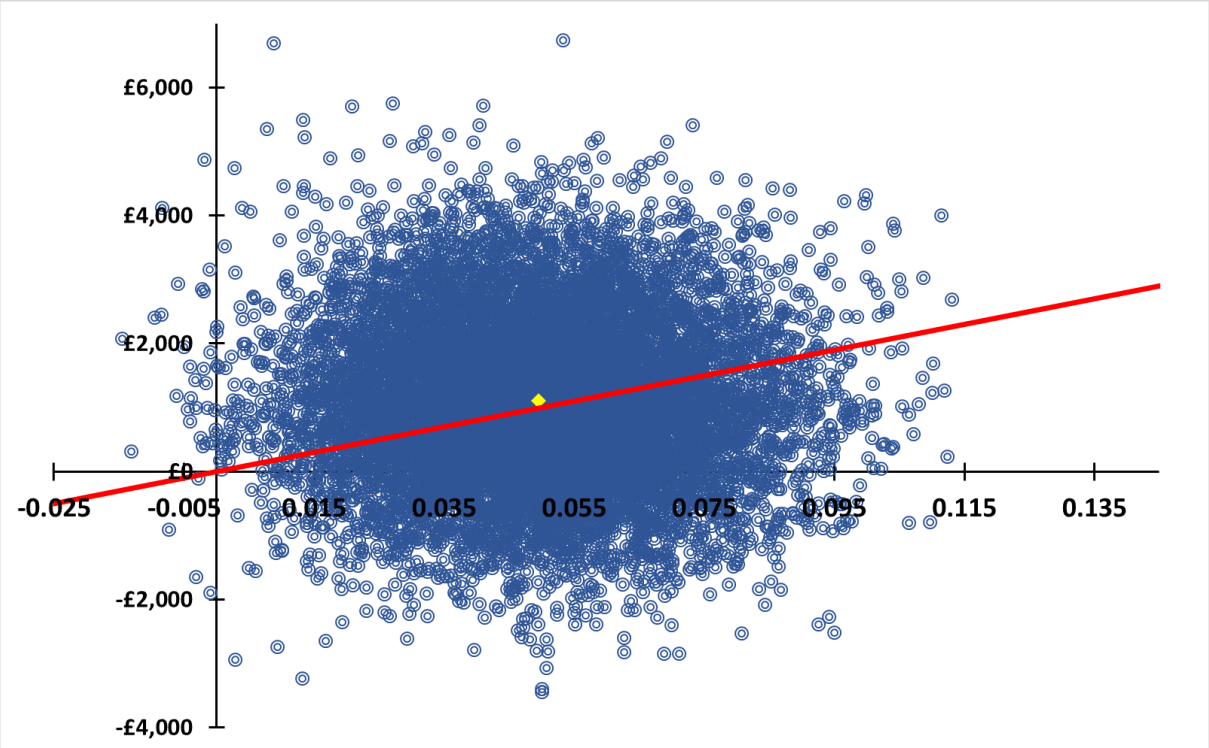


Figure 18: Cost-effectiveness plane for individual placement support versus other vocational rehabilitation services: individual placement support provided by a staff member on band 5



A third PSA was for the deterministic cost of IPS being provided by a staff member at band 5, with a caseload of 20 patients and a mean time in readmission of 30 days. Values for time in readmission were drawn from a uniform distribution. The increase in time spent in readmission reflected the views of the committee. The CEAC for this simulation is displayed in Figure 19. The scatter plot of the individual simulations that generated this probabilistic result is displayed in Figure 20.

Figure 19: Cost effectiveness acceptability curve for individual placement support versus other vocational rehabilitation services: individual placement support provided by a staff member on band 5 and time spent in readmission is 30 days.

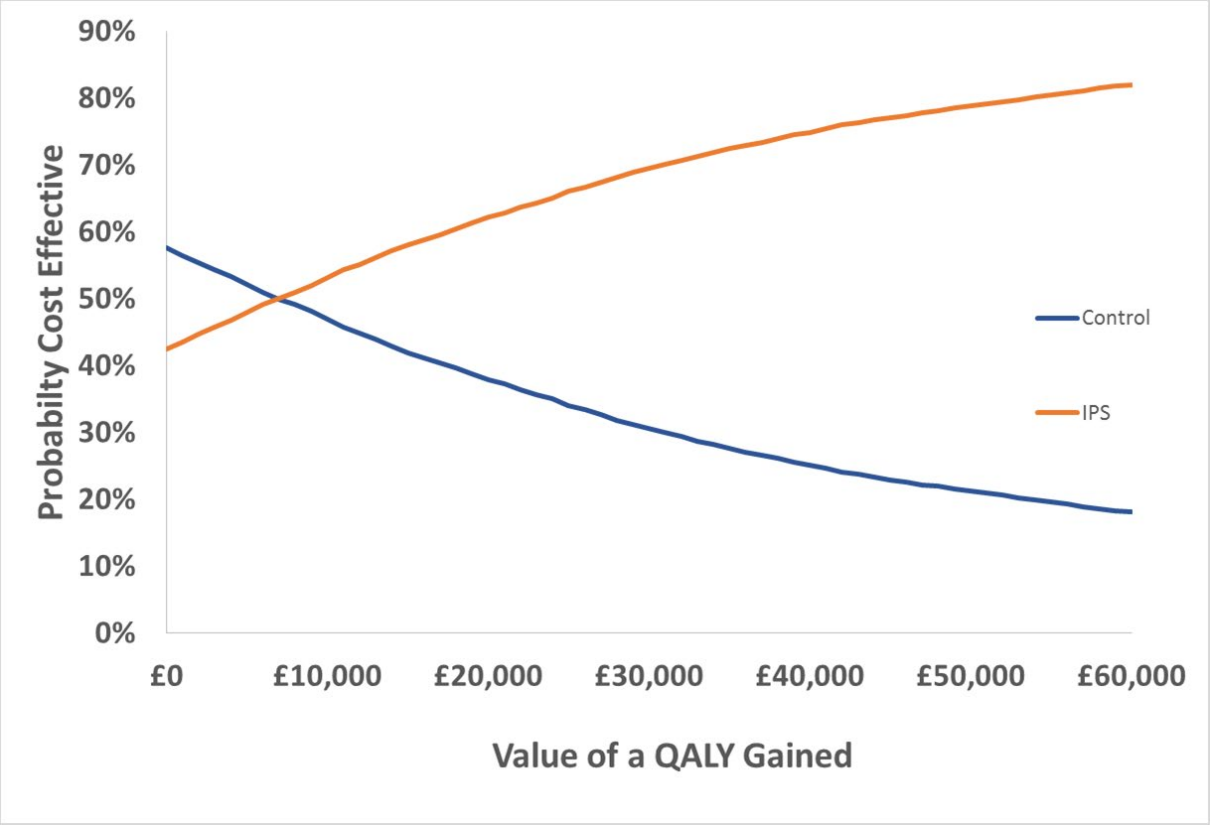
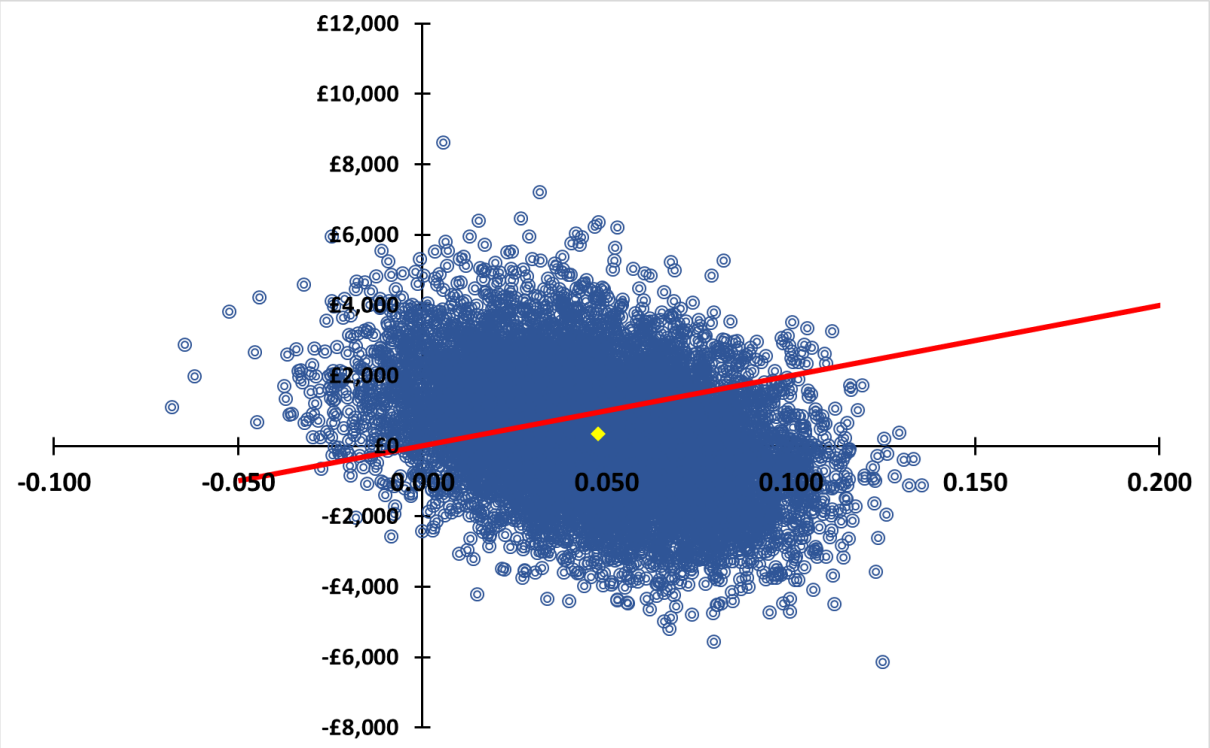


Figure 20: Cost-effectiveness plane for individual placement support versus other vocational rehabilitation services: individual placement support provided by a staff member on band 5 and time spent in readmission is 30 days.



1.3.2 Deterministic analysis

The results of the deterministic analysis are presented in the tables below.

Table 21: Deterministic (base-case) results: Comparison of incremental costs, quality adjusted life years and the resultant incremental cost effectiveness ratio of individual placement support (band 4) versus other vocational rehabilitation services

	Cost		QALYs		
Treatment Strategy	**Total**	**Incremental**	**Total**	**Incremental**	**ICER (n=10,000)**
Other vocational rehabilitation services	£8,857	-	1.033	-	-
Individual placement support	£9,567	£710	1.082	0.05	£14,354

Table 22: Deterministic (base-case) results: Comparison of incremental costs, quality adjusted life years and the resultant incremental cost effectiveness ratio of individual placement support (band 5) versus other vocational rehabilitation services

	Cost		QALYs		
Treatment Strategy	**Total**	**Incremental**	**Total**	**Incremental**	**ICER (n=10,000)**
Other vocational rehabilitation services	£8,857	-	1.033	-	-
Individual placement support	£9,928	£1070	1.082	0.05	£21,647

Table 23: Deterministic (base-case) results: Comparison of incremental costs, quality adjusted life years and the resultant incremental cost effectiveness ratio of individual placement support (band 5) versus other vocational rehabilitation services. Both treatment strategies have a readmission length of 30 days.

	Cost		QALYs		
Treatment Strategy	**Total**	**Incremental**	**Total**	**Incremental**	**ICER (n=10,000)**
Other vocational rehabilitation services	£10,510	-	1.003	-	-
Individual placement support	£10,968	£457	1.052	0.05	£9,591

1.3.3 Deterministic sensitivity analysis

The results of a series of one-way sensitivity analysis, with IPS delivered by a band 4 staff member are displayed in Figure 21. This analysis displays the impact on cost effectiveness to a low/high change of the variables listed in Table 16, holding all other inputs as constant at their default values. The white translucent line in the middle represents the iNMB of the base-case analysis. The wider yellow bars indicate the variables that have the greater effect on the model output. The analysis was repeated (see Figure 22) for where the default cost of IPS is delivered by a band 5 staff member and the time spent in readmission is 30 days.

Figure 21: Tornado diagram displaying the effect of a high/low value of each parameter on the incremental net monetary benefit at £20,000 per QALY

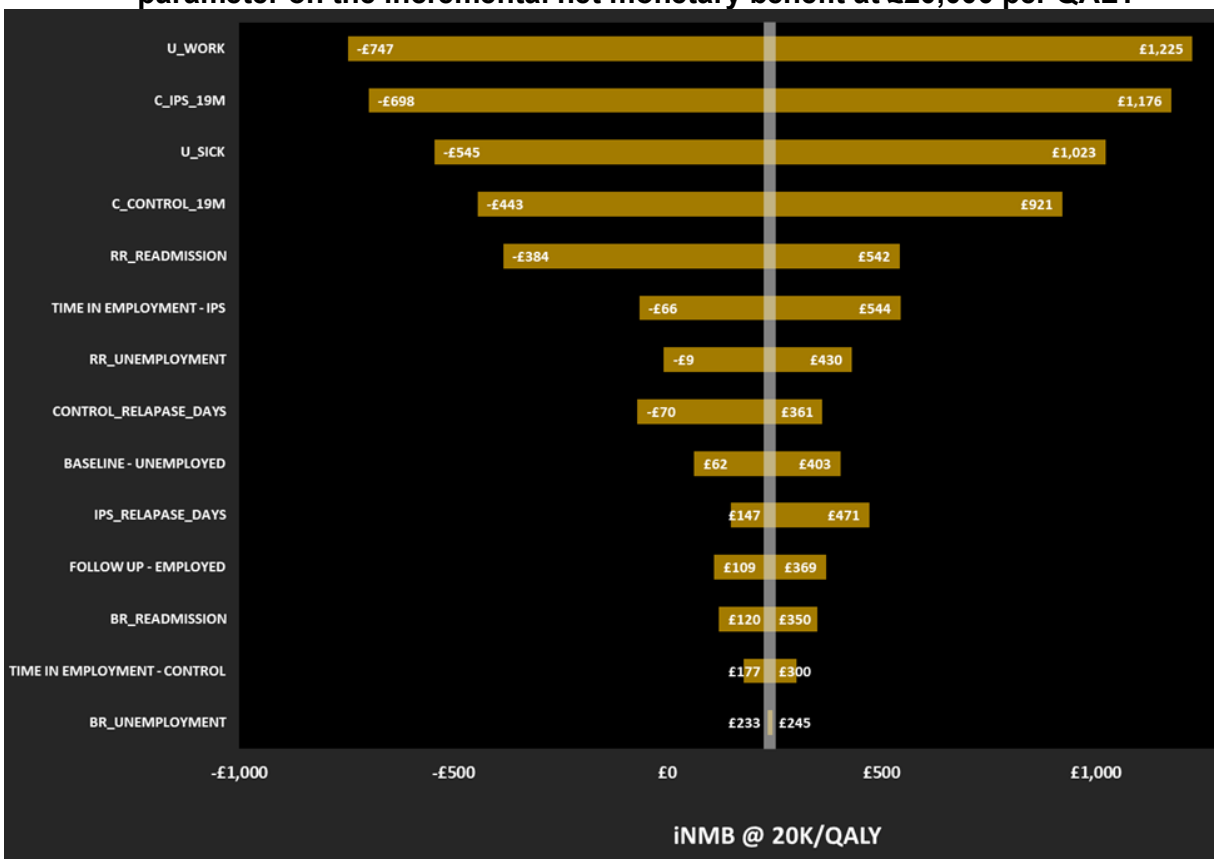
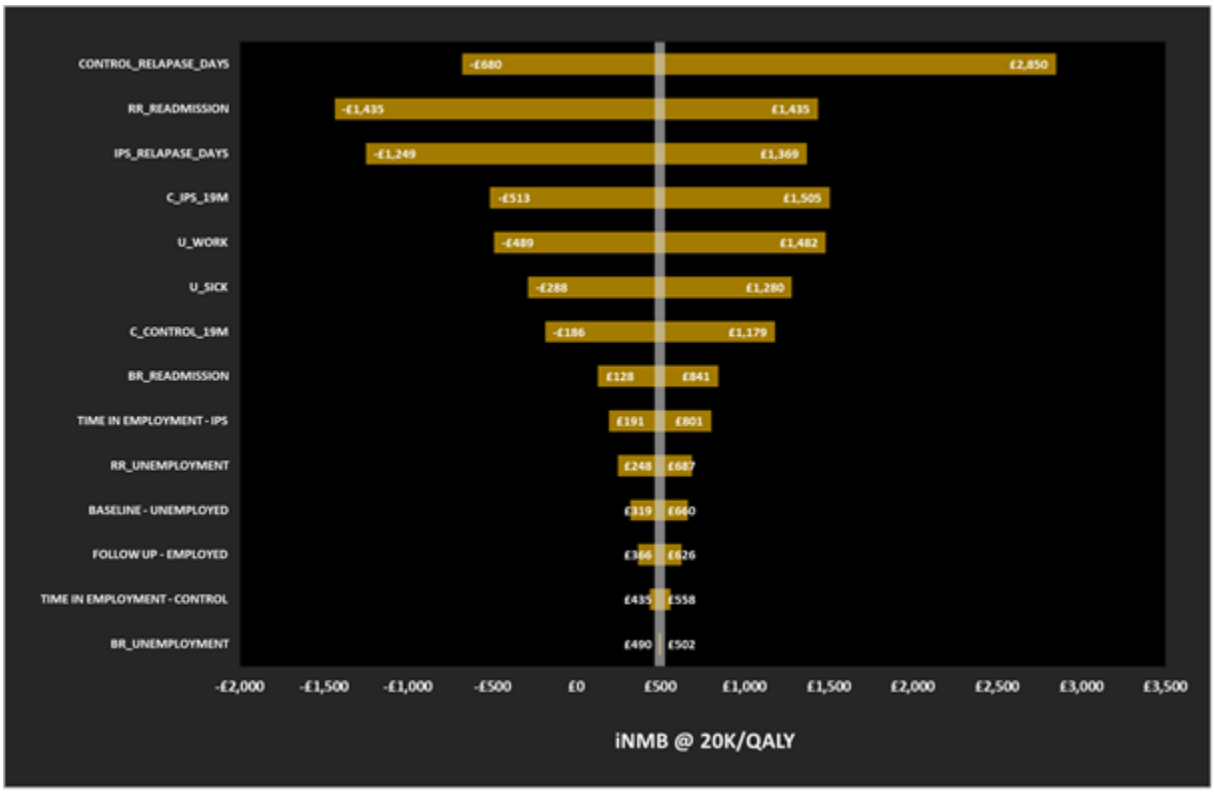


Figure 22: Tornado diagram displaying the effect of a high/low value of each parameter on the incremental net monetary benefit at £20,000 per QALY. Individual support delivered by a band 5 staff member and readmission is 30 days.



1.4 Discussion

It is important to recognise the limitations inherent in the accompanying clinical review when interpreting these results. The committee highlighted that the majority of studies that inform the effectiveness estimate for the risk of unemployment are from the USA. It was acknowledged that the British health systems, benefits system and labour markets differ from US counterparts in important ways. These differences might reduce the effectiveness of IPS in a British context and therefore, the results of the economic analysis may be subject to bias and, consequently, overestimate the benefits of IPS in comparison to VRS.

There may also be limitations with the validity of the comparator in this analysis. The pooled studies in the guideline meta-analysis, in addition to being mostly from the USA, defined the comparator in many ways in terms of resource use and job programme. Therefore, the cost of the comparator was informed from the PSSRU 2015, which cites 'Day-Care' services as the appropriate comparator from a cost perspective.

The results strongly suggest (from the input parameters used in the model) that IPS is likely to be cost effective when compared to VRS. The results of the probabilistic analysis show that IPS is cost effective when delivered by a band 4 staff member, and borderline cost effective when delivered by a band 5 staff member. These two default cost values were chosen as reflecting the committee's experience of delivered practice. These results included data on the time spent in readmission (10 days) which were extracted from 2 studies (Bond

2015; Burns 2007) used to inform the effect estimate of relapse in the accompanying meta-analysis. The time horizon of 19 months was informed by the weighted average of the studies in the meta-analysis. It may be the case that a longer time horizon would increase the probability of IPS being cost effective if treatment effects hold. No data was available that assessed the long-term outcomes of this patient group, having participated on an IPS scheme.

It was the committee's view that a 10-day readmission stay was much shorter than would be seen in practice. As a result, the model was re-run, based on an assumed mean length of stay of 30 days. The committee were unsure what a plausible distribution of this value would be. Therefore, a separate probabilistic analysis sampled values from a uniform distribution from an assumed low value of 20 days and a high value of 50 days. The results of this PSA strongly suggested that IPS is cost effective, even when costed as being delivered by a band 5 staff member, the highest plausible band the committee believed would be involved in IPS. The sensitivity of the cost of both treatment strategies (listed in tornado diagram as C_IPS_19m & C_CONTROL_19M), and the time spent in readmission (CONTROL_RELAPSE_DAYS) in a separate Tornado were identified as key drivers of the model.

It is worthy to note that the effectiveness estimate for readmission is statistically insignificant, though is important to include in the PSA, which takes into account this uncertainty (Claxton 1999). The spread of the iterations of the third PSA is substantially wider than the other two. This spread can be attributed to the sampled values from the uniform distribution, which, when accompanied by the high cost of readmission, could significantly alter the cost effectiveness result for a given iteration. This provides a useful robustness check for the model as the mean ICER is someway lower than £20,000 per QALY. It is likely though that this spread would be lesser if the time spent in readmission were to be the same length regardless of whether a patient had been assigned to a particular treatment strategy. This spread also reflects the statistical uncertainty in the readmission effect estimate (see Figure 7).

There are a couple of instances where this analysis may have underestimated the cost effectiveness of IPS. Firstly, day care, categorised as the comparator for VRS, was costed at 34 sessions per annum. This was the lowest possible number according to PSSRU (2015) and was assigned the most conservative value owing to uncertainty amongst the committee about what the correct number of sessions would be. Another parameter that may lead to the results being a conservative estimate of cost effectiveness are the utility estimates included in this analysis to inform the computation of QALYs. These utilities (Squires 2012) are of employment and sick leave; both are assigned to be the health state utilities of employment and unemployment in this analysis respectively. The committee acknowledged that it may be the case that the utility of being unemployed in this patient group is lower than the utility of sick leave. Utilities used in this analysis are also a key driver of the model, in which case, if the incremental differences in utility between the two treatment strategies are under estimated, then this will be reflected in a more conservative cost effectiveness result.

It is important to note that while this analysis has tested 2 different default cost assumptions, it does not provide evidence about the optimal configuration of IPS. Nevertheless, the studies included in the guideline systematic review all pointed towards an IPS worker having a caseload of 20-25 patients.

All interventions modelled were associated with small QALY gains of 0.05 QALYs. The first 2 PSAs, where readmission was set at a mean of 10 days showed that it was extremely

unlikely that IPS would result in a net QALY loss. However, in the third PSA, where the mean time spent in readmission is 30 days, there would be a QALY loss on around 20% of the total simulations. This can be attributed to the inherent statistical uncertainty in the RR of readmission. It is also due to the higher number of days spent in a readmission health state, as informed from the high/low estimates of the uniform distribution which is assigned a lower heath state utility value.

1.5 Conclusion

The clinical data underpinning this model is mostly informed from studies in the USA which differ from the UK context in important ways. Owing to the heterogeneity inherent in the included studies as forminga comparator to IPS, this analysis has made some broad assumptions as to what an appropriate comparator in the UK might be. Subject to the limitations of the data underpinning the model being informed from such studies, this analysis demonstrates that individual placement support is likely to be a cost effective intervention when compared to other vocational rehabilitation services.

References

Briggs 2008

Briggs, A., Impact of schizophrenia and schizophrenia treatment-related adverse events on quality of life: direct utility elicitation. Health and quality of life outcomes 6.1: 105, 2008

Claxton 1999

Claxton, K., The irrelevance of inference: a decision-making approach to the stochastic evaluation of health care technologies. J Health Econ, 18, 341-64, 1999

Appendix K – Excluded studies

Excluded clinical and economic studies for review question: 5.3 What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work?

Clinical studies

Table 24: Excluded studies and reasons for their exclusion

Study	Reason for Exclusion
Aasdahl, Lene, Pape, Kristine, Vasseljen, Ottar, Johnsen, Roar, Gismervik, Sigmund, Halsteinli, Vidar, Fleten, Nils, Nielsen, Claus Vinther, Fimland, Marius Steiro, Effect of inpatient multicomponent occupational rehabilitation versus less comprehensive outpatient rehabilitation on sickness absence in persons with musculoskeletal- or mental health disorders: A randomized clinical trial, Journal of occupational rehabilitation, 28, 170-179, 2018	Population is unclear.
Aberg-Wistedt, A., Cressell, T., Lidberg, Y., Liljenberg, B., Osby, U., Two-year outcome of team-based intensive case management for patients with schizophrenia, Psychiatric ServicesPsychiatr Serv, 46, 1263-6, 1995	Intervention not of interest for the review questions
Acil, A. A., Dogan, S., Dogan, O., The effects of physical exercises to mental state and quality of life in patients with schizophrenia, Journal of Psychiatric & Mental Health NursingJ Psychiatr Ment Health Nurs, 15, 808-15, 2008	It is unclear if the participants were receiving rehabilitation
Adair, C. E., Streiner, D. L., Barnhart, R., Kopp, B., Veldhuizen, S., Patterson, M., Aubry, T., Lavoie, J., Sareen, J., LeBlanc, S. R., et al.,, Outcome Trajectories among Homeless Individuals with Mental Disorders in a Multisite Randomised Controlled Trial of Housing First, Canadian journal of psychiatry. Revue canadienne de psychiatrie, 62, 30â□□39, 2017	Only 34% subjects had complex psychosis or related severe mental illness
Ahmed, A. O., A randomized effectiveness study of cognitive remediation for mental health and forensic patients, Schizophrenia bulletin., 39, S320, 2013	Majority of the subjects are from forensic background (>50%).
Ahmed, A. O., Hunter, K. M., Goodrum, N. M., Batten, N. J., Birgenheir, D., Hardison, E., Dixon, T., Buckley, P. F., A randomized study of cognitive remediation for forensic and mental health patients with schizophrenia, Journal of psychiatric research, 68, 8â□□18, 2015	Majority subjects with forensic history.
Almerie, M. Q., Okba Al Marhi, M., Jawoosh, M., Alsabbagh, M., Matar, H. E., Maayan, N., Bergman, H., Social skills programmes for schizophrenia, Cochrane Database of Systematic Reviews, 2015	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Aloi, M., de Filippis, R., Grosso Lavalle, F., Chiappetta, E., Vigano, C., Segura-Garcia, C., De Fazio, P., Effectiveness of integrated psychological therapy on clinical, neuropsychological, emotional and functional outcome in	Outcomes not relevant. Unclear if in rehabilitation setting

Study	Reason for Exclusion
schizophrenia: a RCT study, Journal of mental health (abingdon, england), (no pagination), 2018	
Armijo, J., Mendez, E., Morales, R., Schilling, S., Castro, A., Alvarado, R., Rojas, G., Efficacy of community treatments for schizophrenia and other psychotic disorders: A literature review, Frontiers in Psychiatry, 4 (OCT) (no pagination), 2013	Not a systematic review
Atkinson, J. M., Coia, D. A., Gilmour, W. H., Harper, J. P., The impact of education groups for people with schizophrenia on social functioning and quality of life, British journal of psychiatry, 168, 199â□□204, 1996	Unclear whether in rehabilitation setting
Audini, B., Marks, I. M., Lawrence, R. E., Connolly, J., Watts, V., Home-based versus out-patient/in-patient care for people with serious mental illness. Phase II of a controlled study, British Journal of Psychiatry, 165, 204-10, 1994	Intervention of interest not reported
Barbic, S., Krupa, T., Armstrong, I., A randomized controlled trial of the effectiveness of a modified recovery workbook program: preliminary findings, Psychiatric Services, 60, 491-7, 2009	Outcomes not relevant
Battin, C., Bouvet, C., Hatala, C., A systematic review of the effectiveness of the clubhouse model, Psychiatric rehabilitation journal, 39, 305-312, 2016	No relevant studies in this systematic review
Bauer, M. S., McBride, L., Williford, W. O., Glick, H., Kinosian, B., Altshuler, L., Beresford, T., Kilbourne, A. M., Sajatovic, M., Cooperative Studies Program 430 Study, Team, Collaborative care for bipolar disorder: Part II. Impact on clinical outcome, function, and costs, Psychiatric Services, 57, 937-45, 2006	Chronic care model (including psychoeducation) versus standard care
Baumgartner, J. N., Herman, D. B., Community integration of formerly homeless men and women with severe mental illness after hospital discharge, Psychiatric Services, 63, 435-7, 2012	It is unclear if the subjects were receiving rehabilitation services
Bayer, W., Köster, M., Salize, H. J., Höhl, W., Machleidt, W., Wiedl, K. H., Buchkremer, G., Längle, G., Longer-term effects of inpatient vocational and ergotherapeutic measures on the vocational integration of patients with schizophrenia, Psychiatrische praxis, 35, 170â□□3; discussion 173â□□4, 2008	Article in German
Bechdolf, A., Knost, B., Nelson, B., Schneider, N., Veith, V., Yung, A. R., Pukrop, R., Randomized comparison of group cognitive behaviour therapy and group psychoeducation in acute patients with schizophrenia: effects on subjective quality of life, Australian & New Zealand Journal of Psychiatry, 44, 144-50, 2010	Only subjects from acute setting are included
Bechi, M., Bosia, M., Spangaro, M., Buonocore, M., Cocchi, F., Pigoni, A., Piantanida, M., Guglielmino, C., Bianchi, L., Smeraldi, E., et al.,, Combined social cognitive and neurocognitive rehabilitation strategies in schizophrenia: neuropsychological and psychopathological influences on Theory of Mind improvement, Psychological Medicine, 45, 3147â□□3157, 2015	Does not report outcomes of interest
Bechi, M., Riccaboni, R., Ali, S., Fresi, F., Buonocore, M., Bosia, M., Cocchi, F., Smeraldi, E., Cavallaro, R., Theory of mind and emotion processing training for patients with	Does not report outcomes of interest

Study	Reason for Exclusion
schizophrenia: Preliminary findings, Psychiatry Research, 198, 371-377, 2012	
Bechi, M., Spangaro, M., Bosia, M., Zanoletti, A., Fresi, F., Buonocore, M., Cocchi, F., Guglielmino, C., Smeraldi, E., Cavallaro, R., Theory of Mind intervention for outpatients with schizophrenia, Neuropsychological Rehabilitation, 23, 383-400, 2013	Does not report outcomes of interest
Bejerholm, U., Areberg, C., Hofgren, C., Sandlund, M., Rinaldi, M., Individual placement and support in Sweden - a randomized controlled trial, Nordic journal of psychiatry, 69, 57â□□66, 2015	Follow-up of Areberg 2013 checked for relevant data
Bell, M. D., Choi, K. H., Dyer, C., Wexler, B. E., Benefits of cognitive remediation and supported employment for schizophrenia patients with poor community functioning, Psychiatric services (Washington, D.C.), 65, 469â□□475, 2014	Secondary analysis of Bell 2008. Population not complex psychosis
Bell, M. D., Laws, H., Pittman, B., Johannesen, J. K., Comparison of focused cognitive training and portable "brain-games" on functional outcomes for vocational rehabilitation participants, Scientific reports, 8, 1779, 2018	Population included 61% with schizophrenia. 39% (other psychoses not specified)
Bell, M. D., Zito, W., Greig, T., Wexler, B. E., Neurocognitive enhancement therapy with vocational services: work outcomes at two-year follow-up, Schizophrenia research, 105, 18â□□29, 2008	Unclear whether in rehabilitation setting. Unclear whether complex psychosis / severe mental health condition
Bell, M., Lysaker, P., Bryson, G., A behavioral intervention to improve work performance in schizophrenia: work behavior inventory feedback, Journal of vocational rehabilitation, 18, 43â□□50, 2003	Unclear whether in rehabilitation settings
Beynon, Suzanne, Soares-Weiser, Karla, Woolacott, Nerys, Duffy, Steven, Geddes, John R., Psychosocial interventions for the prevention of relapse in bipolar disorder: Systematic review of controlled trials, The British journal of psychiatry, 192, 5-11, 2008	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Bio, D. S., Gattaz, W. F., Vocational rehabilitation improves cognition and negative symptoms in schizophrenia, Schizophrenia Research, 126, 265-269, 2011	Study conducted in Brazil
Blankertz, L., Robinson, S., Adding a vocational focus to mental health rehabilitation, Psychiatric services (Washington, D.C.), 47, 1216â□□1222, 1996	Population not relevant (not complex psychosis or related severe mental illness)
Bond, G. R., Drake, R. E., Becker, D. R., An update on randomized controlled trials of evidence-based supported employment, Psychiatric rehabilitation journal, 31, 280-290, 2008	Systematic review, outdated but checked for relevant studies.
Bowie, C. R., McGurk, S. R., Mausbach, B., Patterson, T. L., Harvey, P. D., Combined cognitive remediation and functional skills training for schizophrenia: effects on cognition, functional competence, and real-world behavior, American Journal of Psychiatry, 169, 710â□□718, 2012	Participants were outpatients, not in a rehabilitation setting
Bradley, G. M., Couchman, G. M., Perlesz, A., Nguyen, A. T., Singh, B., Riess, C., Multiple-family group treatment for English- and Vietnamese-speaking families living with	Unclear whether in rehabilitation setting

Study	Reason for Exclusion
schizophrenia, Psychiatric services (Washington, D.C.), 57, 521â□□530, 2006	
Broderick, J., Crumlish, N., Waugh, A., Vancampfort, D., Yoga versus non-standard care for schizophrenia, Cochrane Database of Systematic Reviews, 9, CD012052, 2017	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Broderick, J., Knowles, A., Chadwick, J., Vancampfort, D., Yoga versus standard care for schizophrenia, Cochrane Database of Systematic Reviews, CD010554, 2015	Yoga versus standard care for schizophrenia
Bryce, S. D., Rossell, S. L., Lee, S. J., Lawrence, R. J., Tan, E. J., Carruthers, S. P., Ponsford, J. L., Neurocognitive and Self-efficacy Benefits of Cognitive Remediation in Schizophrenia: a Randomized Controlled Trial, Journal of the international neuropsychological society : JINS, 1â□□14, 2018	It is unclear how many of the subjects are from rehabilitation settings
Bucci, P., Piegari, G., Mucci, A., Merlotti, E., Chieffi, M., De Riso, F., De Angelis, M., Di Munzio, W., Galderisi, S., Neurocognitive individualized training versus social skills individualized training: a randomized trial in patients with schizophrenia, Schizophrenia research, 150, 69â□□75, 2013	Unclear whether in rehabilitation setting
Buchain, P. C., Vizzotto, A. D., Henna Neto, J., Elkis, H., Randomized controlled trial of occupational therapy in patients with treatment-resistant schizophrenia, Revista brasileira de psiquiatria (sao paulo, brazil : 1999), 25, 26â□□30, 2003	Study conducted in Brazil
Buchkremer, G., Klingberg, S., Holle, R., Schulze Mönking, H., Hornung, W. P., Psychoeducational psychotherapy for schizophrenic patients and their key relatives or care-givers: results of a 2-year follow-up, Acta psychiatrica scandinavica, 96, 483â□□491, 1997	Unclear whether in rehabilitation settings
Buckley, L. A., Maayan, N., Soaresâ□□Weiser, K., Adams, C. E., Supportive therapy for schizophrenia, Cochrane Database of Systematic Reviews, 2015	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Burnam, M. A., Morton, S. C., McGlynn, E. A., Petersen, L. P., Stecher, B. M., Hayes, C., Vaccaro, J. V., An experimental evaluation of residential and nonresidential treatment for dually diagnosed homeless adults, Journal of Addictive Diseases, 14, 111-34, 1995	The diagnosis of population is unclear (major affective disorder)
Burns, T., Catty, J., IPS in Europe: the EQOLISE trial, Psychiatric rehabilitation journal, 31, 313â□□317, 2008	Follow-up of Burns 2007 trial - checked for relevant data.
Burns, T., Catty, J., White, S., Becker, T., Koletsi, M., Fioritti, A., Rössler, W., Tomov, T., van Busschbach, J., Wiersma, D., et al.,, The impact of supported employment and working on clinical and social functioning: results of an international study of individual placement and support, Schizophrenia bulletin, 35, 949â□□958, 2009	Follow-up of Burns 2007 trial - checked for relevant data.
Burns, T., White, S. J., Catty, J., Individual placement and support in Europe: the EQOLISE trial, International review of psychiatry, 20, 498â□□502, 2008	Follow-up of Burns 2007 trial - checked for relevant data.
Burns, T., Yeeles, K., Langford, O., Montes, M. V., Burgess, J., Anderson, C., A randomised controlled trial of time-limited individual placement and support: iPS-LITE trial, British journal of psychiatry, 207, 351â□□356, 2015	Not complex psychosis / severe mental health conditions.

Study	Reason for Exclusion
Bustillo, J. R., Lauriello, J., Horan, W. P., Keith, S. J., The psychosocial treatment of schizophrenia: An update, American journal of psychiatry, 158, 163-175, 2001	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Campbell, K., Bond, G. R., Drake, R. E., Who benefits from supported employment: a meta-analytic study, Schizophrenia BulletinSchizophr Bull, 37, 370-80, 2011	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Carmona, V. R., Gomez-Benito, J., Huedo-Medina, T. B., Rojo, J. E., Employment outcomes for people with schizophrenia spectrum disorder: A meta-analysis of randomized controlled trials, International Journal of Occupational Medicine & Environmental HealthInt J Occup Med Environ Health, 30, 345-366, 2017	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Carta Mauro, G., Maggiani, Federica, Pilutzu, Laura, Moro Maria, F., Mura, Gioia, Cadoni, Federica, Sailing for rehabilitation of patients with severe mental disorders: results of a cross over randomized controlled trial, Clinical practice and epidemiology in mental health, 10, 73â□□79, 2014	Unclear whether in rehabilitation setting
Carta, M. G., Maggiani, F., Pilutzu, L., Moro, M. F., Mura, G., Cadoni, F., Sancassiani, F., Vellante, M., Machado, S., Preti, A., Sailing for rehabilitation of patients with severe mental disorders: results of a cross over randomized controlled trial, Clinical Practice and Epidemiology in Mental Health, 10, 73â□□79, 2015	Unclear whether in rehabilitation setting
Carta, M. G., Maggiani, F., Pilutzu, L., Moro, M. F., Mura, G., Sancassiani, F., Vellante, M., Migliaccio, G. M., Machado, S., Nardi, A. E., et al.,, Sailing can improve quality of life of people with severe mental disorders: results of a cross over randomized controlled trial, Clinical practice and epidemiology in mental health, 10, 80â□□86, 2015	Unclear whether in rehabilitation setting
Chandler, D., Meisel, J., Hu, T. W., McGowen, M., Madison, K., Client outcomes in a three-year controlled study of an integrated service agency model, Psychiatric ServicesPsychiatr Serv, 47, 1337-43, 1996	Population not clear
Chandler, D., Meisel, J., McGowen, M., Mintz, J., Madison, K., Client outcomes in two model capitated integrated service agencies, Psychiatric ServicesPsychiatr Serv, 47, 175-80, 1996	Diagnosis of the study subjects, apart from those with schizophrenia (<67%) is unclear
Charry-Sanchez, J. D., Pradilla, I., Talero-Gutierrez, C., Animal-assisted therapy in adults: A systematic review, Complementary Therapies in Clinical Practice, 32, 169-180, 2018	This review includes only one study for schizophrenia diagnosis which was conducted in Israel .
Charzynska, K., Kucharska, K., Mortimer, A., Does employment promote the process of recovery from schizophrenia? A review of the existing evidence, International Journal of Occupational Medicine & Environmental HealthInt J Occup Med Environ Health, 28, 407-18, 2015	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Chinman, M., Oberman, R. S., Hanusa, B. H., Cohen, A. N., Salyers, M. P., Twamley, E. W., Young, A. S., A cluster randomized trial of adding peer specialists to intensive case management teams in the Veterans Health Administration,	Not relevant population

Study	Reason for Exclusion
Journal of Behavioral Health Services & Research, 42, 109â□□121, 2015	
Choi, K. H., Kwon, J. H., Social cognition enhancement training for schizophrenia: a preliminary randomized controlled trial, Community mental health journal, 42, 177â□□187, 2006	Study conducted in South Korea
Chung, T. E., Gozdzik, A., Palma Lazgare, L. I., To, M. J., Aubry, T., Frankish, J., Hwang, S. W., Stergiopoulos, V., Housing First for older homeless adults with mental illness: a subgroup analysis of the At Home/Chez Soi randomized controlled trial, International Journal of Geriatric Psychiatry, 33, 85-95, 2018	Diagnosis of study subjects is unclear
Clark, R. E., Teague, G. B., Ricketts, S. K., Bush, P. W., Xie, H., McGuire, T. G., Drake, R. E., McHugo, G. J., Keller, A. M., Zubkoff, M., Cost-effectiveness of assertive community treatment versus standard case management for persons with co-occurring severe mental illness and substance use disorders, Health Services ResearchHealth Serv Res, 33, 1285-308, 1998	Intervention not relevant
Cleary, M., Hunt, G., Matheson, S., Siegfried, N., Walter, G., Psychosocial treatment programs for people with both severe mental illness and substance misuse, Schizophrenia bulletin, 34, 226-228, 2008	Systematic review, inclusion criteria do not match our protocol.
Contreras, N. A., Tan, E. J., Lee, S. J., Castle, D. J., Rossell, S. L., Using visual processing training to enhance standard cognitive remediation outcomes in schizophrenia: A pilot study, Psychiatry research, 262, 494-499, 2018	Comparison is not relevant
Cook, J. A., Blyler, C. R., Burke-Miller, J. K., McFarlane, W. R., Leff, H. S., Mueser, K. T., Gold, P. B., Goldberg, R. W., Shafer, M. S., Onken, S. J., et al.,, Effectiveness of supported employment for individuals with schizophrenia: results of a multi-site, randomized trial, Clinical schizophrenia & related psychoses, 2, 37â□□46, 2008	<67% population had complex psychosis or related severe mental illness
Cook, J. A., Copeland, M. E., Jonikas, J. A., Hamilton, M. M., Razzano, L. A., Grey, D. D., Floyd, C. B., Hudson, W. B., Macfarlane, R. T., Carter, T. M., et al.,, Results of a randomized controlled trial of mental illness self-management using Wellness Recovery Action Planning, Schizophrenia bulletin, 38, 881â□□891, 2012	40% population not with complex psychosis
Cook, J. A., Jonikas, J. A., Hamilton, M. M., Goldrick, V., Steigman, P. J., Grey, D. D., Burke, L., Carter, T. M., Razzano, L. A., Copeland, M. E., Impact of Wellness Recovery Action Planning on service utilization and need in a randomized controlled trial, Psychiatric Rehabilitation Journal, 36, 250-257, 2013	<60% population had a diagnosis of complex psychosis or related severe mental illness
Cook, J. A., Leff, H. S., Blyler, C. R., Gold, P. B., Goldberg, R. W., Mueser, K. T., Toprac, M. G., McFarlane, W. R., Shafer, M. S., Blankertz, L. E., et al.,, Results of a multisite randomized trial of supported employment interventions for individuals with severe mental illness, Archives of General Psychiatry, 62, 505â□□512, 2005	Not relevant population

Study	Reason for Exclusion
Cook, J. A., Lehman, A. F., Drake, R., McFarlane, W. R., Gold, P. B., Leff, H. S., Blyler, C., Toprac, M. G., Razzano, L. A., Burke-Miller, J. K., et al.,, Integration of psychiatric and vocational services: a multisite randomized, controlled trial of supported employment, American Journal of Psychiatry, 162, 1948â□□1956, 2005	Not relevant population
Cook, J. A., Razzano, L. A., Burke-Miller, J. K., Blyler, C. R., Leff, H. S., Mueser, K. T., Gold, P. B., Goldberg, R. W., Shafer, M. S., Onken, S. J., et al.,, Effects of co-occurring disorders on employment outcomes in a multisite randomized study of supported employment for people with severe mental illness, Journal of Rehabilitation Research and Development, 44, 837â□□849, 2007	<67% population had complex psychosis or related severe mental illness
Cook, S., Chambers, E., Coleman, J. H., Occupational therapy for people with psychotic conditions in community settings: A pilot randomized controlled trial, Clinical rehabilitation, 23, 40-52, 2009	Unclear whether in rehabilitation settings
Corrigan, P. W., Social skills training in adult psychiatric populations: a meta-analysis, Journal of Behavior Therapy & Experimental Psychiatry, 22, 203-10, 1991	The outcomes are not relevant. Population is unclear for the group with a diagnosis of psychosis.
Coulter, A., Entwistle, V. A., Eccles, A., Ryan, S., Shepperd, S., Perera, R., Personalised care planning for adults with chronic or long-term health conditions, Cochrane Database of Systematic Reviews, CD010523, 2015	3 studies reporting mental health outcomes, out of which one included people with serious mental illnesses with 66% population with schizophrenia or bipolar disorder
Craig, T., Shepherd, G., Rinaldi, M., Smith, J., Carr, S., Preston, F., Singh, S., Vocational rehabilitation in early psychosis: cluster randomised trial, British Journal of Psychiatry, 205, 145â□□150, 2014	Only cases of early/first episode psychosis included
Cramer, H., Lauche, R., Klose, P., Langhorst, J., Dobos, G., Yoga for schizophrenia: a systematic review and meta-analysis, BMC Psychiatry, 13, 32, 2013	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Crawford, M. J., Killaspy, H., Kalaitzaki, E., Barrett, B., Byford, S., Patterson, S., Soteriou, T., O'Neill, F. A., Clayton, K., Maratos, A., Barnes, T. R., Osborn, D., Johnson, T., King, M., Tyrer, P., Waller, D., The MATISSE study: a randomised trial of group art therapy for people with schizophrenia, BMC Psychiatry, 10, 65, 2010	Protocol for Crawford 2012 (MATISSE) - checked for relevant data.
Crowther, R. E., Marshall, M., Bond, G. R., Huxley, P., Helping people with severe mental illness to obtain work: systematic review, BMJ, 322, 204-8, 2001	No relevant studies identified in this systematic review
Crowther, R., Marshall, M., Bond, G. R., Huxley, P., Vocational rehabilitation for people with severe mental illness, Cochrane Database of Systematic Reviews, 2001	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
d'Amato, Thierry, Bation, Remy, Cochet, Alain, Jalenques, Isabelle, Galland, Fabienne, Giraud-Baro, Elisabeth, Pacaud-Troncin, Michele, Augier-Astolfi, Francoise, Llorca, Pierre-Michel, Saoud, Mohamed, Brunelin, Jerome, A randomized,	Unclear if in rehabilitation setting or complex psychosis

Study	Reason for Exclusion
controlled trial of computer-assisted cognitive remediation for schizophrenia, Schizophrenia Research, 125, 284-290, 2011	
Dauwan, M., Begemann, M. J., Heringa, S. M., Sommer, I. E., Exercise Improves Clinical Symptoms, Quality of Life, Global Functioning, and Depression in Schizophrenia: A Systematic Review and Meta-analysis, Schizophrenia BulletinSchizophr Bull, 42, 588-99, 2016	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Davis, L. W., Lysaker, P. H., Kristeller, J. L., Salyers, M. P., Kovach, A. C., Woller, S., Effect of mindfulness on vocational rehabilitation outcomes in stable phase schizophrenia, Psychological services, 12, 303â□□312, 2015	Unclear whether in rehabilitation setting. Unclear whether complex psychosis
Dean, M., Weston, A. R., Osborn, D. P., Willis, S., Patterson, S., Killaspy, H., Leurent, B., Crawford, M. J., Activity groups for people with schizophrenia: a randomized controlled trial, Journal of Mental Health, 23, 171-5, 2014	Follow up publication of Crawford 2010 (MATISSE) - checked for relevant data.
Demant, Kirsa M., Vinberg, Maj, Kessing, Lars V., Miskowiak, Kamilla W., Effects of short-term cognitive remediation on cognitive dysfunction in partially or fully remitted individuals with bipolar disorder: Results of a randomised controlled trial, PLoS ONE Vol 10(6), 2015, ArtID e0127955, 10, 2015	Unclear whether in rehabilitation settings
Dias Barbosa Vizzotto, A., Celestino, D. L., Buchain, P. C., De Oliveira, A. M., De Oliveira, G. M. R., Di Sarno, E. S., Napolitano, I. C., Elkis, H., The efficacy of occupational therapy in the rehabilitation of executive functions in patients with treatment-resistant schizophrenia: a pilot randomized controlled trial, Schizophrenia research., 153, S259, 2014	Conference abstract
Díaz Zuluaga, A. M., Duica, K., Ruiz Galeano, C., Vargas, C., Agudelo Berruecos, Y., Ospina, S., López-Jaramillo, C., Evaluation and Socio-occupational Intervention in Bipolar and Schizophrenic Patients within a Multimodal Intervention Program- PRISMA, Revista colombiana de psiquiatria, 47, 4â□□12, 2018	Study conducted in Colombia
Dickinson, D., Tenhula, W., Morris, S., Brown, C., Peer, J., Spencer, K., Li, L., Gold, J. M., Bellack, A. S., A randomized, controlled trial of computer-assisted cognitive remediation for schizophrenia, American journal of psychiatry, 167, 170â□□180, 2010	Unclear whether in rehabilitation settings
Dixon, L., Hoch, J. S., Clark, R., Bebout, R., Drake, R., McHugo, G., Becker, D., Cost-effectiveness of two vocational rehabilitation programs for persons with severe mental illness, Psychiatric services (washington, D.C.), 53, 1118â□□1124, 2002	Cost effectiveness analysis of the Drake IPS trials
Dobson, D. J., McDougall, G., Busheikin, J., Aldous, J., Effects of social skills training and social milieu treatment on symptoms of schizophrenia, Psychiatric services (washington, D.C.), 46, 376â□□380, 1995	Unclear whether in rehabilitation settings
Drake, R. E., Frey, W., Bond, G. R., Goldman, H. H., Salkever, D., Miller, A., Moore, T. A., Riley, J., Karakus, M., Milfort, R., Assisting Social Security Disability Insurance beneficiaries with schizophrenia, bipolar disorder, or major depression in	The population is unclear

Study	Reason for Exclusion
returning to work, American Journal of PsychiatryAm J Psychiatry, 170, 1433-41, 2013	
Drebing, C. E., Van Ormer, E. A., Krebs, C., Rosenheck, R., Rounsaville, B., Herz, L., Penk, W., The impact of enhanced incentives on vocational rehabilitation outcomes for dually diagnosed veterans, Journal of Applied Behavior Analysis, 38, 359-72, 2005	Comparison not relevant
Drebing, C. E., Van Ormer, E. A., Mueller, L., Hebert, M., Penk, W. E., Petry, N. M., Rosenheck, R., Rounsaville, B., Adding contingency management intervention to vocational rehabilitation: Outcomes for dually diagnosed veterans, Journal of Rehabilitation Research and Development, 44, 851-866, 2007	Comparison not relevant
Druss, B. G., Zhao, L., von Esenwein, S. A., Bona, J. R., Fricks, L., Jenkins-Tucker, S., Sterling, E., Diclemente, R., Lorig, K., The Health and Recovery Peer (HARP) Program: a peer-led intervention to improve medical self-management for persons with serious mental illness, Schizophrenia Research, 118, 264-70, 2010	The population with complex psychosis or related severe mental illness was <67%
Dyck, D. G., Hendryx, M. S., Short, R. A., Voss, W. D., McFarlane, W. R., Service use among patients with schizophrenia in psychoeducational multiple-family group treatment, Psychiatric services (Washington, D.C.), 53, 749â□□754, 2002	Unclear if rehabilitation settings
Eack, S. M., Greenwald, D. P., Hogarty, S. S., Cooley, S. J., DiBarry, A. L., Montrose, D. M., Keshavan, M. S., Cognitive enhancement therapy for early-course schizophrenia: effects of a two-year randomized controlled trial, Psychiatric services (washington, D.C.), 60, 1468â□□1476, 2009	Not relevant outcomes
Eack, S. M., Mesholam-Gately, R. I., Greenwald, D. P., Hogarty, S. S., Keshavan, M. S., Negative symptom improvement during cognitive rehabilitation: results from a 2-year trial of Cognitive Enhancement Therapy, Psychiatry research, 209, 21â□□26, 2013	No relevant outcomes reported.
Eack, Shaun M., Hogarty, Gerard E., Greenwald, Deborah P., Hogarty, Susan S., Keshavan, Matcheri S., Effects of cognitive enhancement therapy on employment outcomes in early schizophrenia: Results from a 2-year randomized trial, Research on Social Work Practice, 21, 32-42, 2011	Population not relevant
Eack, Shaun M., Hogarty, Susan S., Greenwald, Deborah P., Litschge, Maralee Y., McKnight, Summer A., Bangalore, Srihari S., Pogue-Geile, Michael F., Keshavan, Matcheri S., Cornelius, Jack R., Cognitive Enhancement Therapy in substance misusing schizophrenia: Results of an 18-month feasibility trial, Schizophrenia research, 161, 478-483, 2015	Unclear whether in rehabilitation settings
Ebert, D. D., Hannig, W., Tarnowski, T., Sieland, B., Götzky, B., Berking, M., Web-based rehabilitation aftercare following inpatient psychosomatic treatment, Die rehabilitation, 52, 164â□□172, 2013	Full text not in English

Study	Reason for Exclusion
Elbogen, E. B., Hamer, R. M., Swanson, J. W., Swartz, M. S., A Randomized Clinical Trial of a Money Management Intervention for Veterans With Psychiatric Disabilities, Psychiatric services (Washington, D.C.), 67, 1142â□□1145, 2016	<50% population with complex psychosis or related severe mental illness
Emmerson, L. C., Granholm, E., Link, P. C., McQuaid, J. R., Jeste, D. V., Insight and treatment outcome with cognitive-behavioral social skills training for older people with schizophrenia, Journal of Rehabilitation Research and Development, 46, 1053-1058, 2009	Unclear whether in rehabilitation settings.
Falkum, E., Klungsoyr, O., Lystad, J. U., Bull, H. C., Evensen, S., Martinsen, E. W., Friis, S., Ueland, T., Vocational rehabilitation for adults with psychotic disorders in a Scandinavian welfare society, BMC Psychiatry, 17, 2017	Not in rehabilitation setting. Not complex psychosis or related severe mental illness
Farrand, P., Woodford, J., Impact of support on the effectiveness of written cognitive behavioural self-help: a systematic review and meta-analysis of randomised controlled trials, Clinical Psychology Review, 33, 182-95, 2013	Not relevant population
Farreny, A., Aguado, J., Ochoa, S., Huerta-Ramos, E., Marsà, F., López-Carrilero, R., Carral, V., Haro, J. M., Usall, J., REPYFLEC cognitive remediation group training in schizophrenia: looking for an integrative approach, Schizophrenia research, 142, 137â□□144, 2012	Unclear whether in rehabilitation settings
Fernandez-Jorge, MaT, Roldan-Gacimartin, Mal, De Gomez-Alfageme, M. G., Vargas, M. L., Lahera-Corteza, G., Feasibility and effectiveness of an animal-assisted therapy for patients with severe and enduring mental disorder: a pilot randomized trial, Rehabilitacion psicosocial, 10, 18â□□24, 2013	Full text in Spanish
Firth, J., Cotter, J., Elliott, R., French, P., Yung, A. R., A systematic review and meta-analysis of exercise interventions in schizophrenia patients, Psychological Medicine, 45, 1343-61, 2015	Systematic review, outcomes not relevant.
Firth, J., Stubbs, B., Rosenbaum, S., Vancampfort, D., Malchow, B., Schuch, F., Elliott, R., Nuechterlein, K. H., Yung, A. R., Aerobic Exercise Improves Cognitive Functioning in People With Schizophrenia: A Systematic Review and Meta-Analysis, Schizophrenia BulletinSchizophr Bull, 43, 546-556, 2017	Systematic review, outcomes not relevant.
Fisher, M., Holland, C., Subramaniam, K., Vinogradov, S., Neuroplasticity-based cognitive training in schizophrenia: an interim report on the effects 6 months later, Schizophrenia bulletin, 36, 869â□□879, 2010	Not based in rehabilitation settings.
Fisher, M., Nahum, M., Howard, E., Rowlands, A., Brandrett, B., Kermott, A., Woolley, J., Vinogradov, S., Supplementing intensive targeted computerized cognitive training with social cognitive exercises for people with schizophrenia: An interim report, Psychiatric Rehabilitation Journal, 40, 21-32, 2017	Unclear whether in rehabilitation settings
Fiszdon, J. M., Choi, K. H., Bell, M. D., Choi, J., Silverstein, S. M., Cognitive remediation for individuals with psychosis:	Unclear whether in rehabilitation setting

Study	Reason for Exclusion
efficacy and mechanisms of treatment effects, Psychological medicine, 46, 3275â□□3289, 2016	
Fiszdon, J. M., Kurtz, M. M., Choi, J., Bell, M. D., Martino, S., Motivational Interviewing to Increase Cognitive Rehabilitation Adherence in Schizophrenia, Schizophrenia Bulletin, 42, 327â□□334, 2016	Unclear whether in rehabilitation settings
Forsberg, K. A., Björkman, T., Sandman, P. O., Sandlund, M., Influence of a lifestyle intervention among persons with a psychiatric disability: a cluster randomised controlled trail on symptoms, quality of life and sense of coherence, Journal of Clinical Nursing, 19, 1519â□□1528, 2010	Only 26/41 (<67%) subjects had a diagnosis of complex psychosis or related severe mental illness
Fowler, D., Hodgekins, J., Painter, M., Reilly, T., Crane, C., Macmillan, I., Mugford, M., Croudace, T., Jones, P. B., Cognitive behaviour therapy for improving social recovery in psychosis: a report from the ISREP MRC Trial Platform Study (Improving Social Recovery in Early Psychosis), Psychological medicine, 39, 1627â□□1636, 2009	Unclear if rehabilitation settings
Franck, N., Duboc, C., Sundby, C., Amado, I., Wykes, T., Demily, C., Launay, C., Le Roy, V., Bloch, P., Willard, D., et al.,, Specific vs general cognitive remediation for executive functioning in schizophrenia: a multicenter randomized trial, Schizophrenia research, 147, 68â□□74, 2013	Not relevant outcomes
Frank, Ellen, Kupfer, David J., Thase, Michael E., Mallinger, Alan G., Swartz, Holly A., Eagiolini, Andrea M., Grochocinski, Victoria, Houck, Patricia, Scott, John, Thompson, Wesley, Monk, Timothy, Two-Year Outcomes for Interpersonal and Social Rhythm Therapy in Individuals With Bipolar I Disorder, Archives of general psychiatry, 62, 996-1004, 2005	Study population from acute settings
Fredrick, Megan M., Mintz, Jim, Roberts, David L., Maples, Natalie J., Sarkar, Sonali, Li, Xueying, Velligan, Dawn I., Is cognitive adaptation training (CAT) compensatory, restorative, or both?, Schizophrenia research, 166, 290-296, 2015	Unclear whether in rehabilitation settings
Galderisi, S., Piegari, G., Mucci, A., Acerra, A., Luciano, L., Rabasca, A. F., Santucci, F., Valente, A., Volpe, M., Mastantuono, P., et al.,, Social skills and neurocognitive individualized training in schizophrenia: comparison with structured leisure activities, European archives of psychiatry and clinical neuroscience, 260, 305â□□315, 2010	Outcomes not relevant. Unclear whether in rehabilitation setting
Garrido, G., Barrios, M., Penadés, R., Enríquez, M., Garolera, M., Aragay, N., Pajares, M., Vallès, V., Delgado, L., Alberni, J., et al.,, Computer-assisted cognitive remediation therapy: cognition, self-esteem and quality of life in schizophrenia, Schizophrenia Research, 150, 563â□□569, 2013	Unclear if in rehabilitation setting. Not complex psychosis or related severe mental illness
Gaudelus, Baptiste, Virgile, Jefferson, Geliot, Sabrina, Franck, Nicolas, Improving facial emotion recognition in schizophrenia: A controlled study comparing specific and attentional focused cognitive remediation, Frontiers in Psychiatry Vol 7 2016, ArtID 105, 7, 2016	Population not relevant (not complex psychosis or related severe mental illness)
Geretsegger, M., Mossler, K. A., Bieleninik, L., Chen, X. J., Heldal, T. O., Gold, C., Music therapy for people with	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.

Study	Reason for Exclusion
schizophrenia and schizophrenia-like disorders, Cochrane Database of Systematic Reviews, 5, CD004025, 2017	
Gigantesco, A., Vittorielli, M., Pioli, R., Falloon, I. R., Rossi, G., Morosini, P., The VADO approach in psychiatric rehabilitation: a randomized controlled trial, Psychiatric services (washington, D.C.), 57, 1778â□□1783, 2006	Rehab planning intervention - check for RQ 7.1 and 7.2.
Glick, I. D., Clarkin, J. F., Haas, G. L., Spencer, J. H., Clinical significance of inpatient family intervention: conclusions from a clinical trial, Hospital & Community Psychiatry, 44, 869â□□873, 1993	No relevant outcomes reported
Glick, I. D., Spencer, J. H., Clarkin, J. F., Haas, G. L., Lewis, A. B., Peyser, J., DeMane, N., Good-Ellis, M., Harris, E., Lestelle, V., A randomized clinical trial of inpatient family intervention. IV. Followup results for subjects with schizophrenia, Schizophrenia research, 3, 187â□□200, 1990	No relevant outcomes reported
Glynn, S. M., Marder, S. R., Liberman, R. P., Blair, K., Wirshing, W. C., Wirshing, D. A., Ross, D., Mintz, J., Supplementing clinic-based skills training with manual-based community support sessions: effects on social adjustment of patients with schizophrenia, American Journal of Psychiatry, 159, 829-37, 2002	Not a relevant comparison
Gold, C., Heldal, T. O., Dahle, T., Wigram, T., Music therapy for schizophrenia or schizophrenia-like illnesses, Cochrane Database of Systematic Reviews, CD004025, 2005	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Gold, P. B., Macias, C., Rodican, C. F., Does Competitive Work Improve Quality of Life for Adults with Severe Mental Illness? Evidence from a Randomized Trial of Supported Employment, Journal of behavioral health services & research, 43, 155-71, 2016	Unclear whether the population is relevant, <50% had complex psychosis or related severe mental illness
Gomar, J. J., Valls, E., Radua, J., Mareca, C., Tristany, J., del Olmo, F., Rebolleda-Gil, C., Jañez-Álvarez, M., de Álvaro, F. J., Ovejero, M. R., et al.,, A Multisite, Randomized Controlled Clinical Trial of Computerized Cognitive Remediation Therapy for Schizophrenia, Schizophrenia bulletin, 41, 1387â□□1396, 2015	No relevant outcomes reported
Granholm, E., McQuaid, J. R., McClure, F. S., Auslander, L. A., Perivoliotis, D., Pedrelli, P., Patterson, T., Jeste, D. V., A randomized, controlled trial of cognitive behavioral social skills training for middle-aged and older outpatients with chronic schizophrenia, American journal of psychiatry, 162, 520â□□529, 2005	Unclear whether in rehabilitation settings
Grocke, D., Bloch, S., Castle, D., Thompson, G., Newton, R., Stewart, S., Gold, C., Group music therapy for severe mental illness: a randomized embedded-experimental mixed methods study, Acta Psychiatrica Scandinavica, 130, 144-53, 2014	<67% population had a diagnosis of complex psychosis or related severe mental illness
Gutman, S. A., Kerner, R., Zombek, I., Dulek, J., Ramsey, C. A., Supported education for adults with psychiatric disabilities: effectiveness of an occupational therapy program, The american journal of occupational therapy : official publication of the american occupational therapy association, 63, 245â□□254, 2009	Unclear whether in rehabilitation setting. Unclear whether complex psychosis / severe mental health condition

Study	Reason for Exclusion
Hadas-Lidor, N., Katz, N., Tyano, S., Weizman, A., Effectiveness of dynamic cognitive intervention in rehabilitation of clients with schizophrenia, Clinical rehabilitation, 15, 349â□□359, 2001	Study conducted in Israel
Hamann, J., Parchmann, A., Sassenberg, N., Bronner, K., Albus, M., Richter, A., Hoppstock, S., Kissling, W., Training patients with schizophrenia to share decisions with their psychiatrists: a randomized-controlled trial, Social psychiatry and psychiatric epidemiology, 52, 175â□□182, 2017	Not a relevant intervention
Hansen, J. P., Ostergaard, B., Nordentoft, M., Hounsgaard, L., The feasibility of cognitive adaptation training for outpatients with schizophrenia in integrated treatment, Community mental health journal, 49, 630-5, 2013	First episode psychsosis
Hansen, J. P., Østergaard, B., Nordentoft, M., Hounsgaard, L., Cognitive adaptation training combined with assertive community treatment: a randomised longitudinal trial, Schizophrenia research, 135, 105â□□111, 2012	Population includes only people with first episode of schizophrenia
Hansson, L., Lexén, A., Holmén, J., The effectiveness of narrative enhancement and cognitive therapy: a randomized controlled study of a self-stigma intervention, Social psychiatry and psychiatric epidemiology, 52, 1415â□□1423, 2017	Diagnosis of the population is unclear
Hansson, L., Svensson, B., Björkman, T., Bullenkamp, J., Lauber, C., Martinez-Leal, R., McCabe, R., Rössler, W., Salize, H., Torres-Gonzales, F., et al.,, What works for whom in a computer-mediated communication intervention in community psychiatry? Moderators of outcome in a cluster randomized trial, Acta Psychiatrica Scandinavica, 118, 404â□□409, 2008	Unclear whether in rehabilitation setting
Harter, M., Dirmaier, J., Dwinger, S., Kriston, L., Herbarth, L., Siegmund-Schultze, E., Bermejo, I., Matschinger, H., Heider, D., Konig, H. H., Effectiveness of Telephone-Based Health Coaching for Patients with Chronic Conditions: A Randomised Controlled Trial, PLoS ONE [Electronic Resource], 11, e0161269, 2016	This study includes participants with physical and mental illnesses. Segregated data is not available for participants with complex psychosis.
Haslett, W. R., McHugo, G. J., Bond, G. R., Drake, R. E., Use of Software for Tablet Computers to Promote Engagement With Supported Employment: results From an RCT, Psychiatric services (washington, D.C.), 65, 954â□□956, 2014	The population diagnosis is unclear (thought/mood disorder)
He, Y., Li, C., Morita therapy for schizophrenia, Cochrane Database of Systematic Reviews, 2007	All included studies in this review were conducted in China
Hengartner, M. P., Passalacqua, S., Andreae, A., Rössler, W., von Wyl, A., The role of perceived social support after psychiatric hospitalisation: post hoc analysis of a randomised controlled trial testing the effectiveness of a transitional intervention, International Journal of Social Psychiatry, 63, 297â□□306, 2017	Population is mixed, with a subgroup of participants with psychosis; however their diagnoses are unclear.
Hengartner, M. P., Passalacqua, S., Heim, G., Andreae, A., Rössler, W., von Wyl, A., Factors influencing patients' recovery and the efficacy of a psychosocial post-discharge intervention: post hoc analysis of a randomized controlled trial,	Population is mixed, with a subgroup of participants with psychosis; however their diagnoses is unclear.

Study	Reason for Exclusion
Social psychiatry and psychiatric epidemiology, 51, 1667â□□1677, 2016	
Heslin, M., Howard, L., Leese, M., McCrone, P., Rice, C., Jarrett, M., Spokes, T., Huxley, P., Thornicroft, G., Randomized controlled trial of supported employment in England: 2 Year follow-up of the Supported Work and Needs (SWAN) study, World psychiatry, 10, 132â□□137, 2011	Unclear whether in rehabilitation setting. SWAN trial
Hjorthøj, C. R., Orlovska, S., Fohlmann, A., Nordentoft, M., Psychiatric treatment following participation in the CapOpus randomized trial for patients with comorbid cannabis use disorder and psychosis, Schizophrenia Research, 151, 191â□□196, 2013	Unclear whether in rehabilitation settings
Ho, R. T., Fong, T. C., Wan, A. H., Au-Yeung, F. S., Wong, C. P., Ng, W. Y., Cheung, I. K., Lo, P. H., Ng, S. M., Chan, C. L., et al.,, A randomized controlled trial on the psychophysiological effects of physical exercise and Tai-chi in patients with chronic schizophrenia, Schizophrenia Research, 171, 42â□□49, 2016	Study conducted in Hong Kong
Hodgekins, J., Fowler, D., CBT and recovery from psychosis in the ISREP trial: mediating effects of hope and positive beliefs on activity, Psychiatric services (Washington, D.C.), 61, 321â□□324, 2010	Unclear whether from rehabilitation settings
Hoffmann, H., Jäckel, D., Glauser, S., Kupper, Z., A randomised controlled trial of the efficacy of supported employment, Acta Psychiatrica Scandinavica, 125, 157â□□167, 2012	Population is unclear
Hoffmann, H., Jäckel, D., Glauser, S., Mueser, K. T., Kupper, Z., Long-term effectiveness of supported employment: 5-year follow-up of a randomized controlled trial, American Journal of Psychiatry, 171, 1183â□□1190, 2014	Population is unclear
Hogarty, G. E., Flesher, S., Ulrich, R., Carter, M., Greenwald, D., Pogue-Geile, M., Kechavan, M., Cooley, S., DiBarry, A. L., Garrett, A., et al.,, Cognitive enhancement therapy for schizophrenia: effects of a 2-year randomized trial on cognition and behavior, Archives of General Psychiatry, 61, 866â□□876, 2004	Cannot extract useful data
Hogarty, G. E., Greenwald, D., Ulrich, R. F., Kornblith, S. J., DiBarry, A. L., Cooley, S., Carter, M., Flesher, S., Three-year trials of personal therapy among schizophrenic patients living with or independent of family, II: effects on adjustment of patients, American Journal of Psychiatry, 154, 1514â□□1524, 1997	Intervention not based in rehabilitation settings
Hohl, W., Moll, S., Pfeiffer, A., Occupational therapy interventions in the treatment of people with severe mental illness, Current Opinion in Psychiatry, 30, 300-305, 2017	Expert review
Horan, W. P., Kern, R. S., Tripp, C., Hellemann, G., Wynn, J. K., Bell, M., Marder, S. R., Green, M. F., Efficacy and specificity of social cognitive skills training for outpatients with psychotic disorders, Journal of psychiatric research, 45, 1113â□□1122, 2011	Unclear whether in rehabilitation settings

Study	Reason for Exclusion
Hornung, W. P., Feldmann, R., Klingberg, S., Buchkremer, G., Reker, T., Long-term effects of a psychoeducational psychotherapeutic intervention for schizophrenic outpatients and their key-persons - Results of a five-year follow-up, European Archives of Psychiatry and Clinical Neuroscience, 249, 162-167, 1999	Not rehabilitation settings
Hornung, W. P., Holle, R., Schulze Mönking, H., Klingberg, S., Buchkremer, G., Psychoeducational-psychotherapeutic treatment of schizophrenic patients and their caregivers. Results of a 1-year catamnestic study, Der nervenarzt, 66, 828â□□834, 1995	Intervention not based in rehabilitation settings
Horsfall, Jan, Cleary, Michelle, Hunt, Glenn E., Walter, Garry, Psychosocial treatments for people with co-occurring severe mental illnesses and substance use disorders (dual diagnosis): A review of empirical evidence, Harvard Review of Psychiatry, 17, 24-34, 2009	Not a systematic review
Howard, L. M., Heslin, M., Leese, M., McCrone, P., Rice, C., Jarrett, M., Spokes, T., Huxley, P., Thornicroft, G., Supported employment: randomised controlled trial, British journal of psychiatry, 196, 404â□□411, 2010	Unclear whether in rehabilitation setting. SWAN trial
Humm, L. B., Olsen, D., Be, M., Fleming, M., Smith, M., Simulated job interview improves skills for adults with serious mental illnesses, Annual Review of CyberTherapy and Telemedicine, 12, 50-54, 2014	Population not in scope
Ikebuchi, E., Sato, S., Yamaguchi, S., Shimodaira, M., Taneda, A., Hatsuse, N., Watanabe, Y., Sakata, M., Satake, N., Nishio, M., Ito, J. I., Does improvement of cognitive functioning by cognitive remediation therapy effect work outcomes in severe mental illness? A secondary analysis of a randomized controlled trial, Psychiatry & Clinical Neurosciences, 71, 301-308, 2017	Country not in protocol - Japan
Isasi, A. G., Echeburua, E., Liminana, J. M., Gonzalez-Pinto, A., How effective is a psychological intervention program for patients with refractory bipolar disorder? A randomized controlled trial, Journal of affective disorders, 126, 80-7, 2010	Unclear whether in rehabilitation setting
Jäckel, D., Kupper, Z., Glauser, S., Mueser, K. T., Hoffmann, H., Effects of Sustained Employment on Psychiatric Hospitalizations and Quality of Life, Psychiatric services (washington, D.C.), 68, 603â□□609, 2017	Population not relevant
Jacobsen, P., Hodkinson, K., Peters, E., Chadwick, P., A systematic scoping review of psychological therapies for psychosis within acute psychiatric in-patient settings, British journal of psychiatry, 213, 490-497, 2018	Acute setting
Jäger, M., Paras, S., Nordt, C., Warnke, I., Bärtsch, B., Rössler, W., Kawohl, W., How sustainable is supported employment? A follow-up investigation, Neuropsychiatrie : Klinik, Diagnostik, Therapie und Rehabilitation, 27, 196â□□201, 2013	German language
Javadpour, A., Hedayati, A., Dehbozorgi, G. R., Azizi, A., The impact of a simple individual psycho-education program on quality of life, rate of relapse and medication adherence in	Study conducted in Iran

Study	Reason for Exclusion
bipolar disorder patients, Asian journal of psychiatry, 6, 208â□□213, 2013	
Johnson, S., Lamb, D., Marston, L., Osborn, D., Mason, O., Henderson, C., Ambler, G., Milton, A., Davidson, M., Christoforou, M., Sullivan, S., Hunter, R., Hindle, D., Paterson, B., Leverton, M., Piotrowski, J., Forsyth, R., Mosse, L., Goater, N., Kelly, K., Lean, M., Pilling, S., Morant, N., Lloyd-Evans, B., Peer-supported self-management for people discharged from a mental health crisis team: a randomised controlled trial, Lancet, 392, 409-418, 2018	Population not relevant.
Jones, R. B., Atkinson, J. M., Coia, D. A., Paterson, L., Morton, A. R., McKenna, K., Craig, N., Morrison, J., Gilmour, W. H., Randomised trial of personalised computer based information for patients with schizophrenia, BMJ (clinical research ed.), 322, 835â□□840, 2001	Outcomes not relevant to review question
Jonikas, J. A., Grey, D. D., Copeland, M. E., Razzano, L. A., Hamilton, M. M., Floyd, C. B., Hudson, W. B., Cook, J. A., Improving propensity for patient self-advocacy through wellness recovery action planning: results of a randomized controlled trial, Community mental health journal, 49, 260â□□269, 2013	Population not relevant (<66% had relevant diagnosis)
Jorgensen, R., Licht, R. W., Lysaker, P. H., Munk-Jorgensen, P., Buck, K. D., Jensen, S. O., Hansson, L., Zoffmann, V., Effects on cognitive and clinical insight with the use of Guided Self-Determination in outpatients with schizophrenia: A randomized open trial, European Psychiatry: the Journal of the Association of European Psychiatrists, 30, 655-63, 2015	Unclear whether in rehabilitation setting
Kaltsatou, A., Kouidi, E., Fountoulakis, K., Sipka, C., Theochari, V., Kandylis, D., Deligiannis, A., Effects of exercise training with traditional dancing on functional capacity and quality of life in patients with schizophrenia: a randomized controlled study, Clinical Rehabilitation, 29, 882-891, 2015	Outcomes not relevant
Kang, R., Wu, Y., Li, Z., Jiang, J., Gao, Q., Yu, Y., Gao, K., Yan, Y., He, Y., Effect of Community-Based Social Skills Training and Tai-Chi Exercise on Outcomes in Patients with Chronic Schizophrenia: A Randomized, One-Year Study, Psychopathology, 49, 345-355, 2016	Study conducted in China
Kaplan, K., Salzer, M. S., Solomon, P., Brusilovskiy, E., Cousounis, P., Internet peer support for individuals with psychiatric disabilities: a randomized controlled trial, Social science & medicine (1982), 72, 54â□□62, 2011	Population not relevant
Katsumi, A., Hoshino, H., Fujimoto, S., Yabe, H., Ikebuchi, E., Nakagome, K., Niwa, S. I., Effects of cognitive remediation on cognitive and social functions in individuals with schizophrenia, Neuropsychological rehabilitation, 1â□□13, 2017	Study conducted in Japan
Katz, N., Keren, N., Effectiveness of occupational goal intervention for clients with schizophrenia, The american journal of occupational therapy : official publication of the american occupational therapy association, 65, 287â□□296, 2011	Study conducted in Israel

Study	Reason for Exclusion
Keefe, Richard S., Vinogradov, Sophia, Medalia, Alice, Buckley, Peter F., Caroff, Stanley N., d'Souza, Deepak C., Harvey, Phillip D., Graham, Karen A., Hamer, Robert M., Marder, Stephen M., Miller, Del D., Olson, Stephen J., Patel, Jayendra K., Velligan, Dawn, Walker, Trina M., Haim, Adam J., Stroup, T., Feasibility and pilot efficacy results from the multisite Cognitive Remediation in the Schizophrenia Trials Network (CRSTN) randomized controlled trial, The Journal of Clinical Psychiatry, 73, 1016-1022, 2012	Unclear whether in rehabilitation setting
Kelly, E., Duan, L., Cohen, H., Kiger, H., Pancake, L., Brekke, J., Integrating behavioral healthcare for individuals with serious mental illness: a randomized controlled trial of a peer health navigator intervention, Schizophrenia Research, 182, 135â□□141, 2017	Population not relevant
Kern, R. S., Liberman, R. P., Becker, D. R., Drake, R. E., Sugar, C. A., Green, M. F., Errorless learning for training individuals with schizophrenia at a community mental health setting providing work experience, Schizophrenia Bulletin, 35, 807-15, 2009	Unclear whether rehabilitation setting or complex psychosis or related severe mental illness. Outcomes not relevant.
Kern, R., Green, M. F., Kopelowicz, A., Mitchell, S. S., Herrera, A. L., Kogler, K., Doran, D., Liberman, R. P., An innovative compensatory intervention for rehabilitation in schizophrenia: the effects of errorless learning on work training outcome, Schizophrenia Research, 60, 172, 2003	Not a relevant intervention
Kidd, S. A., Herman, Y., Barbic, S., Ganguli, R., George, T. P., Hassan, S., McKenzie, K., Maples, N., Velligan, D., Testing a modification of cognitive adaptation training: streamlining the model for broader implementation, Schizophrenia research, 156, 46â□□50, 2014	Not an RCT
Kidd, Sean A., Kaur, Jaswant, Virdee, Gursharan, George, Tony P., McKenzie, Kwame, Herman, Yarissa, Cognitive remediation for individuals with psychosis in a supported education setting: A randomized controlled trial, Schizophrenia research, 157, 90-98, 2014	Unclear whether in rehabilitation setting (not complex psychosis)
Kilbourne, A. M., Almirall, D., Goodrich, D. E., Lai, Z., Abraham, K. M., Nord, K. M., Bowersox, N. W., Enhancing outreach for persons with serious mental illness: 12-month results from a cluster randomized trial of an adaptive implementation strategy, Implementation Science, 9, 163, 2014	Intervention not relevant
Kilbourne, A. M., Goodrich, D. E., Lai, Z., Almirall, D., Nord, K. M., Bowersox, N. W., Abraham, K. M., Reengaging veterans with serious mental illness into care: preliminary results from a national randomized trial, Psychiatric services (washington, D.C.), 66, 90â□□93, 2015	Intervention not relevant
Kilian, R., Lauber, C., Kalkan, R., Dorn, W., Rössler, W., Wiersma, D., van Buschbach, J. T., Fioritti, A., Tomov, T., Catty, J., et al.,, The relationships between employment, clinical status, and psychiatric hospitalisation in patients with schizophrenia receiving either IPS or a conventional vocational rehabilitation programme, Social psychiatry and psychiatric epidemiology, 47, 1381â□□1389, 2012	Unclear whether in rehabilitation setting

Study	Reason for Exclusion
Killackey, E., Individual placement and support in early psychosis: evidence of benefit and future directions, Early intervention in psychiatry., 4, 6, 2010	Population not relevant
Killaspy, H., King, M., Holloway, F., Craig, T. J., Cook, S., Mundy, T., Leavey, G., McCrone, P., Koeser, L., Omar, R., Marston, L., Arbuthnott, M., Green, N., Harrison, I., Lean, M., Gee, M., Bhanbhro, S., NIHR Journals Library. Programme Grants for Applied Research, 03, 03, 2017	Follow-up of Killaspy 2015 study, checked for relevant data.
Kinoshita, Y., Furukawa, T. A., Kinoshita, K., Honyashiki, M., Omori, I. M., Marshall, M., Bond, G. R., Huxley, P., Amano, N., Kingdon, D., Supported employment for adults with severe mental illness, Cochrane Database of Systematic ReviewsCochrane Database Syst Rev, CD008297, 2013	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Kirk, I., Leiknes, K. A., Laru, L., Hammerstrom, K. T., Bramness, J. G., Grawe, R. W., Haugerud, H., Helseth, V., Landheim, A., Lossius, K., Waal, H., Knowledge Centre for the Health Services at The Norwegian Institute of Public Health (NIPH), NIPH Systematic Reviews, Executive Summaries, 2008	Population: Severe Mental Illness and Substance Use Disorder.
Klingberg, S., Wittorf, A., Fischer, A., Jakob-Deters, K., Buchkremer, G., Wiedemann, G., Evaluation of a cognitive behaviourally oriented service for relapse prevention in schizophrenia, Acta psychiatrica scandinavica, 121, 340â□□350, 2010	Not complex psychosis or related severe mental illness
Klingberg, S., Wolwer, W., Engel, C., Wittorf, A., Herrlich, J., Meisner, C., Buchkremer, G., Wiedemann, G., Negative symptoms of schizophrenia as primary target of cognitive behavioral therapy: Results of the randomized clinical TONES study, Schizophrenia bulletin, 37, S98-S110, 2011	Not rehabilitation setting
Knapp, M., Beecham, J., Koutsogeorgopoulou, V., Hallam, A., Fenyo, A., Marks, I. M., Connolly, J., Audini, B., Muijen, M., Service use and costs of home-based versus hospital-based care for people with serious mental illness, British Journal of Psychiatry, 165, 195â□□203, 1994	Population not relevant
Kopelowicz, A., Wallace, C. J., Zarate, R., Teaching psychiatric inpatients to re-enter the community: a brief method of improving the continuity of care, Psychiatric services (washington, D.C.), 49, 1313â□□1316, 1998	Not relevant outcomes
Kotynia-English, R., McGowan, H., Almeida, O. P., A randomized trial of early psychiatric intervention in residential care: Impact on health outcomes, International Psychogeriatrics, 17, 475-485, 2005	Population not relevant (screening)
Kroon, H., Boevink, W., Van Vugt, M., Delespaul, P., Van Os, J., TREE: a Dutch multi-centre (cluster) randomized trial of a recovery program of/for persons with severe mental illness, Psychiatrische praxis, 38, 2011	Conference abstract
Kuipers, E., Holloway, F., Rabe-Hesketh, S., Tennakoon, L., An RCT of early intervention in psychosis: croydon Outreach and Assertive Support Team (COAST), Social psychiatry and psychiatric epidemiology, 39, 358â□□363, 2004	Service level intervention - more relevant for RQ 2.1 and 2.2

Study	Reason for Exclusion
Kukla, M., Bond, G. R., The Working Alliance and Employment Outcomes for People With Severe Mental Illness Enrolled in Vocational Programs, Rehabilitation Psychology, 54, 157-163, 2009	Unclear whether in rehabilitation setting.
Kukla, M., Bond, G. R., Xie, H., A prospective investigation of work and nonvocational outcomes in adults with severe mental illness, Journal of nervous and mental disease, 200, 214â□□222, 2012	Unclear whether in rehabilitation setting
Kukla, M., Davis, L. W., Lysaker, P. H., Cognitive behavioral therapy and work outcomes: correlates of treatment engagement and full and partial success in schizophrenia, Behavioural and cognitive psychotherapy, 42, 577â□□592, 2014	Not complex psychosis or related severe mental illness
Kurtz, M. M., Neurocognitive rehabilitation for schizophrenia, Current Psychiatry Reports, 5, 303-310, 2003	Expert review
Kurtz, M. M., Mueser, K. T., A Meta-Analysis of Controlled Research on Social Skills Training for Schizophrenia, Journal of consulting and clinical psychology, 76, 491-504, 2008	Earlier version of Kurtz 2015 systematic review
Kurtz, M. M., Nichols, M. C., Cognitive rehabilitation for schizophrenia: A review of recent advances, Current Psychiatry Reviews, 3, 213-221, 2007	Expert review
Lafave, H. G., De Souza, H. R., Gerber, G. J., Assertive community treatment of severe mental illness: A Canadian experience, Psychiatric Services, 47, 757-759, 1996	Intervention not relevant to protocol
Landi, S., Palumbo, D., Margolies, P., Salerno, A. J., Cleek, A., Castaldo, E., Mucci, A., Implementation trial of a wellness self-management program for individuals with severe mental illness in an Italian Day Hospital setting: a pilot study, Journal of psychopathology, 24, 3â□□9, 2018	Not rehabilitation setting
Landolt, K., Brantschen, E., Nordt, C., Bärtsch, B., Kawohl, W., Rössler, W., Association of Supported Employment With Cognitive Functioning and Employment Outcomes, Psychiatric services (Washington, D.C.), 67, 1257â□□1261, 2016	Unclear whether population is relevant
Längle, G., Bayer, W., Köster, M., Salize, H. J., Höhl, W., Machleidt, W., Wiedl, K. H., Buchkremer, G., Do the effects of inpatient vocational therapy and ergotherapy approaches differ in schizophrenic patients? Results of a controlled multicenter study of the german research network on schizophrenia, Psychiatrische praxis, 33, 34â□□41, 2006	German language
Lauder, S., Chester, A., Castle, D., Dodd, S., Gliddon, E., Berk, L., Chamberlain, J., Klein, B., Gilbert, M., Austin, D. W., Berk, M., A randomized head to head trial of MoodSwings.net.au: an Internet based self-help program for bipolar disorder, Journal of Affective Disorders, 171, 13-21, 2015	Not in rehabilitation setting (online intervention)
Lay, B., Blank, C., Lengler, S., Drack, T., Bleiker, M., Rössler, W., Preventing compulsory admission to psychiatric inpatient care using psycho-education and monitoring: feasibility and outcomes after 12 months, European archives of psychiatry and clinical neuroscience, 265, 209â□□217, 2015	Not rehabilitation setting

Study	Reason for Exclusion
Lay, B., Kawohl, W., Rossler, W., Outcomes of a psycho-education and monitoring programme to prevent compulsory admission to psychiatric inpatient care: a randomised controlled trial, Psychological medicine, 48, 849-860, 2018	Not relevant population
Lecomte, T., Cyr, M., Lesage, A. D., Wilde, J., Leclerc, C., Ricard, N., Efficacy of a self-esteem module in the empowerment of individuals with schizophrenia, Journal of nervous and mental disease, 187, 406â□□413, 1999	Outcomes not relevant
Lee, W. K., Effectiveness of computerized cognitive rehabilitation training on symptomatological, neuropsychological and work function in patients with schizophrenia, Asia-pacific psychiatry : official journal of the pacific rim college of psychiatrists, 5, 90â□□100, 2013	Study conducted in Korea
Lehman, A. F., Goldberg, R., Dixon, L. B., McNary, S., Postrado, L., Hackman, A., McDonnell, K., Improving employment outcomes for persons with severe mental illnesses, Archives of general psychiatry, 59, 165â□□172, 2002	Unclear whether in rehabilitation setting (outpatients)
Lehman, A. F., Herron, J. D., Schwartz, R. P., Myers, C. P., Rehabilitation for adults with severe mental illness and substance use disorders. A clinical trial, Journal of Nervous and Mental Disease, 181, 86-90, 1993	Intervention not relevant
Lenior, M. E., Dingemans, P. M., Linszen, D. H., de Haan, L., Schene, A. H., Social functioning and the course of early-onset schizophrenia: five-year follow-up of a psychosocial intervention, British journal of psychiatry, 179, 53â□□58, 2001	Unclear whether in rehabilitation setting
Leurent, B., Killaspy, H., Osborn, D. P., Crawford, M. J., Hoadley, A., Waller, D., King, M., Moderating factors for the effectiveness of group art therapy for schizophrenia: secondary analysis of data from the MATISSE randomised controlled trial, Social Psychiatry & Psychiatric Epidemiology, 49, 1703-10, 2014	Outcomes not relevant
Levitt, A. J., Mueser, K. T., Degenova, J., Lorenzo, J., Bradford-Watt, D., Barbosa, A., Karlin, M., Chernick, M., Randomized controlled trial of illness management and recovery in multiple-unit supportive housing, Psychiatric Services, 60, 1629-36, 2009	Population not relevant (mostly depression)
Li, Z. Q., Chan, S. W. C., Klainin-Yobas, P., Eu, P. W., Ting, S., Examining the effectiveness of a peer-led self-management programme for people with schizophrenia: a randomised controlled trial, Annals of the academy of medicine singapore., 43, S16, 2014	Study conducted in Singapore
Lindenmayer, J. P., McGurk, S. R., Khan, A., Kaushik, S., Thanju, A., Hoffman, L., Valdez, G., Wance, D., Herrmann, E., Improving social cognition in schizophrenia: a pilot intervention combining computerized social cognition training with cognitive remediation, Schizophrenia bulletin, 39, 507â□□517, 2013	Unclear whether in rehabilitation setting
Linszen, D., Dingemans, P., Van der Does, J. W., Nugter, A., Scholte, P., Lenior, R., Goldstein, M. J., Treatment, expressed emotion and relapse in recent onset schizophrenic disorders, Psychological medicine, 26, 333â□□342, 1996	Population not relevant

Study	Reason for Exclusion
Liu, Y., Bo, L., Sampson, S., Roberts, S., Zhang, G., Wu, W., Horticultural therapy for schizophrenia, Cochrane Database of Systematic Reviews, 2014	The only included study from this systematic review is conducted in Hong Kong.
Lucksted, A., Drapalski, A. L., Brown, C. H., Wilson, C., Charlotte, M., Mullane, A., Fang, L. J., Outcomes of a psychoeducational intervention to reduce Internalized Stigma among psychosocial rehabilitation clients, Psychiatric Services, 68, 360-367, 2017	Unclear whether in rehabilitation setting
Lutgens, D., Gariepy, G., Malla, A., Psychological and psychosocial interventions for negative symptoms in psychosis: Systematic review and meta-analysis, British Journal of Psychiatry, 210, 324-332, 2017	Outcome not relevant
Lyman, D. R., Kurtz, M. M., Farkas, M., George, P., Dougherty, R. H., Daniels, A. S., Ghose, S. S., Delphin-Rittmon, M. E., Skill building: assessing the evidence, Psychiatric ServicesPsychiatr Serv, 65, 727-38, 2014	Expert review
Lysaker, P. H., Bond, G., Davis, L. W., Bryson, G. J., Bell, M. D., Enhanced cognitive-behavioral therapy for vocational rehabilitation in schizophrenia: effects on hope and work, Journal of rehabilitation research and development, 42, 673â□□682, 2005	Not in rehabilitation setting
Lysaker, P. H., Davis, L. W., Beattie, N., Effects of cognitive behavioral therapy and vocational rehabilitation on metacognition and coping in schizophrenia, Journal of contemporary psychotherapy, 36, 25â□□30, 2006	Not in rehabilitation setting
Lysaker, P. H., Davis, L. W., Bryson, G. J., Bell, M. D., Effects of cognitive behavioral therapy on work outcomes in vocational rehabilitation for participants with schizophrenia spectrum disorders, Schizophrenia Research, 107, 186â□□191, 2009	Not in rehabilitation setting
Lysaker, Paul H., Davis, Louanne W., Beattie, Nicole, "Effects of cognitive behavioral therapy and vocational rehabilitation on metacognition and coping in schizophrenia": Erratum, Journal of Contemporary Psychotherapy: On the Cutting Edge of Modern Developments in Psychotherapy, 37, 115, 2007	Correction for excluded article
Lystad, J. U., Falkum, E., Haaland, V. T., Bull, H., Evensen, S., McGurk, S. R., Ueland, T., Cognitive remediation and occupational outcome in schizophrenia spectrum disorders: a 2year follow-up study, Schizophrenia research. (no pagination), 2016, Date of Publication: July 26, 2016	Unclear whether in rehabilitation setting
Lytsy, P., Carlsson, L., Anderzén, I., Effectiveness of two vocational rehabilitation programmes in women with long-term sick leave due to pain syndrome or mental illness: 1-year follow-up of a randomized controlled trial, Journal of rehabilitation medicine, 49, 170â□□177, 2017	Population not relevant
Macias, C., Rodican, C. F., Hargreaves, W. A., Jones, D. R., Barreira, P. J., Wang, Q., Supported employment outcomes of a randomized controlled trial of ACT and clubhouse models, Psychiatric services (washington, D.C.), 57, 1406â□□1415, 2006	Unclear whether population relevant (60% had schizophrenia)

Study	Reason for Exclusion
Macpherson, R., Edwards, T. R., Chilvers, R., David, C., Elliott, H. J., Twentyâ□□four hour care for schizophrenia, Cochrane Database of Systematic Reviews, 2009	Intervention not relevant
Madigan, K., Brennan, D., Lawlor, E., Turner, N., Kinsella, A., O'Connor, J. J., Russell, V., Waddington, J. L., O'Callaghan, E., A multi-center, randomized controlled trial of a group psychological intervention for psychosis with comorbid cannabis dependence over the early course of illness, Schizophrenia Research, 143, 138-42, 2013	Intervention not relevant
Malm, U. I., Ivarsson, BÅ, Allebeck, P., Durability of the efficacy of integrated care in schizophrenia: a five-year randomized controlled study, Psychiatric services (Washington, D.C.), 65, 1054â□□1057, 2014	Intervention not relevant
Mari, J. J., Streiner, D. L., An overview of family interventions and relapse on schizophrenia: meta-analysis of research findings, Psychological MedicinePsychol Med, 24, 565-78, 1994	Included trials were published pre-1990
Marks, I. M., Connolly, J., Muijen, M., Audini, B., McNamee, G., Lawrence, R. E., Home-based versus hospital-based care for people with serious mental illness, British Journal of Psychiatry, 165, 179â□□194, 1994	Intervention not relevant
Marono Souto, Y., Vazquez Campo, M., Diaz Llenderrozas, F., Rodriguez Alvarez, M., Mateos, R., Garcia Caballero, A., Randomized Clinical Trial with e-MotionalTraining((R)) 1.0 for Social Cognition Rehabilitation in Schizophrenia, Frontiers in psychiatry, 9, 40, 2018	Unclear whether in rehabilitation setting
Matsuda, Y., Sato, S., Iwata, K., Furukawa, S., Hatsuse, N., Watanabe, Y., Anzai, N., Kishimoto, T., Ikebuchi, E., Effects of risperidone and aripiprazole on neurocognitive rehabilitation for schizophrenia, Psychiatry and clinical neurosciences, 68, 425â□□431, 2014	Intervention not in protocol
Mavreas, V. G., Tomaras, V., Karydi, V., Economou, M., Stefanis, C. N., Expressed Emotion in families of chronic schizophrenics and its association with clinical measures, Social psychiatry and psychiatric epidemiology, 27, 4â□□9, 1992	Not an RCT
McDonell, M. G., Short, R. A., Hazel, N. A., Berry, C. M., Dyck, D. G., Multiple-family group treatment of outpatients with schizophrenia: Impact on service utilization, Family Process, 45, 359-373, 2006	Unclear whether in rehabilitation setting
McFarlane, W. R., Dushay, R. A., Stastny, P., Deakins, S. M., Link, B., A comparison of two levels of family-aided assertive community treatment, Psychiatric services (washington, D.C.), 47, 744â□□750, 1996	Not in rehabilitation setting
McFarlane, W. R., Lukens, E., Link, B., Dushay, R., Deakins, S. A., Newmark, M., Dunne, E. J., Horen, B., Toran, J., Multiple-family groups and psychoeducation in the treatment of schizophrenia, Archives of General PsychiatryArch Gen Psychiatry, 52, 679-87, 1995	Not in rehabilitation setting

Study	Reason for Exclusion
McGrath, J., Hayes, R. L., Cognitive rehabilitation for people with schizophrenia and related conditions, Cochrane Database of Systematic Reviews, 2000	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
McGurk, S. R., Mueser, K. T., DeRosa, T. J., Wolfe, R., Work, recovery, and comorbidity in schizophrenia: a randomized controlled trial of cognitive remediation, Schizophrenia Bulletin, 35, 319â□□335, 2009	Follow-up of McGurk 2005 - checked for relevant data.
McGurk, S. R., Mueser, K. T., Feldman, K., Wolfe, R., Pascaris, A., Cognitive training for supported employment: 2-3 year outcomes of a randomized controlled trial, American journal of psychiatry, 164, 437â□□441, 2007	Unclear whether in rehabilitation setting
McGurk, S. R., Mueser, K. T., Xie, H., Feldman, K., Shaya, Y., Klein, L., Wolfe, R., Cognitive remediation for vocational rehabilitation nonresponders, Schizophrenia research, 175, 48â□□56, 2016	Follow-up of McGurk 2005 - checked for relevant data.
McGurk, S. R., Twamley, E. W., Sitzer, D. I., McHugo, G. J., Mueser, K. T., A meta-analysis of cognitive remediation in schizophrenia, American journal of psychiatry, 164, 1791-1802, 2007	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
McGurk, Susan R., Twamley, Elizabeth W., Sitzer, David I., McHugo, Gregory J., Mueser, Kim T., "A meta-analysis of cognitive remediation in schizophrenia": Correction, The American journal of psychiatry, 165, 540, 2008	Correction for another study
McMain, S. F., Guimond, T., Streiner, D. L., Cardish, R. J., Links, P. S., Dialectical behavior therapy compared with general psychiatric management for borderline personality disorder: clinical outcomes and functioning over a 2-year follow-up, American journal of psychiatry, 169, 650â□□661, 2012	Population not in protocol
Medalia, A., Revheim, N., Casey, M., The remediation of problem-solving skills in schizophrenia, Schizophrenia bulletin, 27, 259â□□267, 2001	Outcomes not relevant
Merinder, L. B., Viuff, A. G., Laugesen, H. D., Clemmensen, K., Misfelt, S., Espensen, B., Patient and relative education in community psychiatry: a randomized controlled trial regarding its effectiveness, Social psychiatry and psychiatric epidemiology, 34, 287â□□294, 1999	Not in rehabilitation setting
Mervis, J. E., Fiszdon, J. M., Lysaker, P. H., Nienow, T. M., Mathews, L., Wardwell, P., Petrik, T., Thime, W., Choi, J., Effects of the Indianapolis Vocational Intervention Program (IVIP) on defeatist beliefs, work motivation, and work outcomes in serious mental illness, Schizophrenia research, 182, 129-134, 2017	Unclear whether in rehabilitation setting.
Metcalfe, C., White, I. R., Weaver, T., Ukoumunne, O. C., Harvey, K., Tattan, T., Thompson, S. G., Intensive case management for severe psychotic illness: is there a general benefit for patients with complex needs? A secondary analysis of the UK700 trial data, Social Psychiatry and Psychiatric Epidemiology, 40, 718â□□724, 2005	Intervention not relevant

Study	Reason for Exclusion
Metcalfe, J. D., Drake, R. E., Bond, G. R., Economic, Labor, and Regulatory Moderators of the Effect of Individual Placement and Support among People with Severe Mental Illness: A Systematic Review and Meta-analysis, Schizophrenia bulletin, 44, 22-31, 2018	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Michon, H., van Busschbach, J. T., Stant, A. D., van Vugt, M. D., van Weeghel, J., Kroon, H., Effectiveness of individual placement and support for people with severe mental illness in The Netherlands: a 30-month randomized controlled trial, Psychiatric rehabilitation journal, 37, 129â□□136, 2014	Unclear whether population is relevant (diagnoses not reported)
Michon, H., Van Busschbach, J., Van Vugt, M., Stant, A., Kroon, H., Wiersma, D., Van Weeghel, J., Effectiveness of the individual placement and support (IPS) model of vocational rehabilitation for people with severe mental illnesses in the Netherlands, Psychiatrische Praxis, 38, 2011	German language
Miklowitz, David J., Otto, Michael W., Frank, Ellen, Reilly-Harrington, Noreen A., Kogan, Jane N., Sachs, Gary S., Thase, Michael E., Calabrese, Joseph R., Marangell, Lauren B., Ostacher, Michael J., Patel, Jayendra, Thomas, Marshall R., Araga, Mako, Gonzalez, Jodi M., Wisniewski, Stephen R., Intensive psychosocial intervention enhances functioning in patients with bipolar depression: Results from a 9-month randomized controlled trial, The American Journal of Psychiatry, 164, 1340-1347, 2007	Unclear whether in rehabilitation setting.
Modini, M., Tan, L., Brinchmann, B., Wang, M. J., Killackey, E., Glozier, N., Mykletun, A., Harvey, S. B., Supported employment for people with severe mental illness: Systematic review and meta-analysis of the international evidence, British journal of psychiatry, 209, 14-22, 2016	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Mohamed, Somaia, Kasckow, John W., Granholm, Eric, Jeste, Dilip V., Community-based treatment of schizophrenia and other severe mental illnesses, 205-222, 2003	Book chapter - expert review
Morin, L., Franck, N., Rehabilitation interventions to promote recovery from schizophrenia: A systematic review, Frontiers in psychiatry, 8 (JUN) (no pagination), 2017	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Morken, G., Grawe, R. W., Widen, J. H., Effects of integrated treatment on antipsychotic medication adherence in a randomized trial in recent-onset schizophrenia, Journal of clinical psychiatry, 68, 566â□□571, 2007	Population not relevant
Morrison, A. P., Pyle, M., Gumley, A., Schwannauer, M., Turkington, D., MacLennan, G., Norrie, J., Hudson, J., Bowe, S. E., French, P., Byrne, R., Syrett, S., Dudley, R., McLeod, H. J., Griffiths, H., Barnes, T. R. E., Davies, L., Kingdon, D., Aydinlar, S., Courtley, J., Douglas-Bailey, M., Graves, E., Holden, N., Hutton, J., Hutton, P., Irving, S., Jackson, C., Lebert, T., Mander, H., McCartney, L., Munro-Clark, T., Murphy, E. K., Spanswick, M., Steele, A., Tip, L., Tully, S., Cognitive behavioural therapy in clozapine-resistant schizophrenia (FOCUS): an assessor-blinded, randomised controlled trial, The lancet psychiatry, 5, 633-643, 2018	More relevant for RQ 3.1 - primary outcomes are related to symptoms

Study	Reason for Exclusion
Mossler, K., Chen, X., Heldal, T. O., Gold, C., Music therapy for people with schizophrenia and schizophrenia-like disorders, Cochrane Database of Systematic Reviews, CD004025, 2011	Early version of Geretsegger 2017 Cochrane review
Mucci, A., Piegari, G., Galderisi, S., Individualization of cognitive training and psychosocial rehabilitation, European psychiatry, 27, 2012	Conference abstract
Mueser, K. T., Aalto, S., Becker, D. R., Ogden, J. S., Wolfe, R. S., Schiavo, D., Wallace, C. J., Xie, H., The effectiveness of skills training for improving outcomes in supported employment, Psychiatric Services, 56, 1254-60, 2005	Unclear whether in rehabilitation setting
Mueser, K. T., Becker, D. R., Wolfe, R., Supported employment, job preferences, job tenure and satisfaction, Journal of mental health (abingdon, england), 10, 411â□□417, 2001	Unclear whether in rehabilitation setting
Mueser, K. T., Bond, G. R., Essock, S. M., Clark, R. E., Carpenter-Song, E., Drake, R. E., Wolfe, R., The effects of supported employment in Latino consumers with severe mental illness, Psychiatric rehabilitation journal, 37, 113â□□122, 2014	Post-hoc analysis of Mueser 2004
Mueser, K. T., Clark, R. E., Haines, M., Drake, R. E., McHugo, G. J., Bond, G. R., Essock, S. M., Becker, D. R., Wolfe, R., Swain, K., The Hartford study of supported employment for persons with severe mental illness, Journal of consulting and clinical psychology, 72, 479â□□490, 2004	Unclear whether in rehabilitation setting
Mueser, K. T., Penn, D. L., Meta-analysis examining the effects of social skills training on schizophrenia, Psychological MedicinePsychol Med, 34, 1365-7, 2004	Comment on another article
Mueser, K. T., Pratt, S. I., Bartels, S. J., Swain, K., Forester, B., Cather, C., Feldman, J., Randomized trial of social rehabilitation and integrated health care for older people with severe mental illness, Journal of Consulting & Clinical PsychologyJ Consult Clin Psychol, 78, 561-73, 2010	Population not in scope
Muijen, M., Cooney, M., Strathdee, G., Bell, R., Hudson, A., Community psychiatric nurse teams: intensive support versus generic care, British Journal of Psychiatry, 165, 211-7, 1994	Not a relevant intervention
Muijen, M., Marks, I., Connolly, J., Audini, B., Home based care and standard hospital care for patients with severe mental illness: a randomised controlled trial, BMJ (clinical research ed.), 304, 749â□□754, 1992	Not a relevant intervention
Mullen, M. G., Thompson, J. L., Murphy, A. A., Malenczak, D., Giacobbe, G., Karyczak, S., Holloway, K. E., Twamley, E. W., Silverstein, S. M., Gill, K. J., Evaluation of a cognitive remediation intervention for college students with psychiatric conditions, Psychiatric rehabilitation journal, 40, 103â□□107, 2017	Population not relevant
Naeem, F., Johal, R., McKenna, C., Rathod, S., Ayub, M., Lecomte, T., Husain, N., Kingdon, D., Farooq, S., Cognitive Behavior Therapy for psychosis based Guided Self-help (CBTp-GSH) delivered by frontline mental health	Outcomes not relevant

Study	Reason for Exclusion
professionals: results of a feasibility study, Schizophrenia Research, 173, 69â□□74, 2016	
Nicol, M. M., Robertson, L., Connaughton, J. A., Life skills programmes for chronic mental illnesses, Cochrane Database of Systematic ReviewsCochrane Database Syst Rev, CD000381, 2000	Early version of Tungounkonw 2012 Cochrane review
Norman, R. M., Malla, A. K., McLean, T. S., McIntosh, E. M., Neufeld, R. W., Voruganti, L. P., Cortese, L., An evaluation of a stress management program for individuals with schizophrenia, Schizophrenia research, 58, 293â□□303, 2002	Unclear whether in rehabilitation setting
Noyes, S., Sokolow, H., Arbesman, M., Evidence for Occupational Therapy Intervention With Employment and Education for Adults With Serious Mental Illness: A Systematic Review, American Journal of Occupational Therapy, 72, 7205190010p1-7205190010p10, 2018	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Nuechterlein, K. H., Subotnik, K. L., Turner, L. R., Ventura, J., Becker, D. R., Drake, R. E., Individual placement and support for individuals with recent-onset schizophrenia: integrating supported education and supported employment, Psychiatric rehabilitation journal, 31, 340â□□349, 2008	Population not relevant
O'Brien, S., McFarland, J., Kealy, B., Pullela, A., Saunders, J., Cullen, W., Meagher, D., A randomized-controlled trial of intensive case management emphasizing the recovery model among patients with severe and enduring mental illness, Irish journal of medical science, 181, 301â□□308, 2012	Intervention not relevant
O'Campo, P., Stergiopoulos, V., Nir, P., Levy, M., Misir, V., Chum, A., Arbach, B., Nisenbaum, R., To, M. J., Hwang, S. W., How did a Housing First intervention improve health and social outcomes among homeless adults with mental illness in Toronto? Two-year outcomes from a randomised trial, BMJ Open, 6, e010581, 2016	Intervention not in scope
O'Connor, M. K., Mueller, L., Kwon, E., Drebing, C. E., O'Connor, A. A., Semiatin, A., Wang, S., Daley, R., Enhanced vocational rehabilitation for Veterans with mild traumatic brain injury and mental illness: pilot study, Journal of rehabilitation research and development, 53, 307â□□320, 2016	People with complex psychosis (n=1) are a small subgroup
Ohlenschlaeger, J., Thorup, A., Petersen, L., Jeppesen, P., Køster, A., Munkner, R., Nordentoft, M., Intensive treatment models and coercion, Nordic Journal of Psychiatry, 61, 369â□□378, 2007	Population not in scope
Ojeda, N., Pena, J., Bengoetxea, E., Segarra, R., Sanchez, P. M., Elizagarate, E., Garcia, J., Eguiluz, J. I., Garcia, A., Clinical and cognitive outcomes in schizophrenia/psychosis after cognitive remediation with REHACOP, European archives of psychiatry and clinical neuroscience., 261, S97, 2011	Outcomes not relevant
Ojeda, N., Peña, J., Sánchez, P., Bengoetxea, E., Elizagárate, E., Ezcurra, J., Gutiérrez Fraile, M., Efficiency of cognitive rehabilitation with REHACOP in chronic treatment resistant Hispanic patients, Neurorehabilitation, 30, 65â□□74, 2012	Outcomes not relevant
Ojeda, N., Sanchez, P., Pena, J., Elizagarate, E., Bengoetxea, E., Ezcurra, J., Gutierrez, M., Improvement in negative	Outcomes not relevant

Study	Reason for Exclusion
symptoms and functional outcome after group cognitive remediation treatment (rehacop program): a randomized controlled trial, Schizophrenia research., 136, S254â□□S255, 2012	
O'Keeffe, J., Conway, R., McGuire, B., A systematic review examining factors predicting favourable outcome in cognitive behavioural interventions for psychosis, Schizophrenia Research, 183, 22-30, 2017	Outcomes not relevant
Okpokoro, Uzuazomaro, Sampson, Stephanie, Brief family intervention for schizophrenia, Schizophrenia BulletinSchizophr Bull, 40, 497-498, 2014	No relevant studies in this systematic review
Omiya, Hidetoshi, Yamashita, Kiyoko, Miyata, Tomoki, Hatakeyama, Yukie, Miyajima, Maki, Yambe, Kenji, Matsumoto, Izuru, Matsui, Mie, Toyomaki, Atsuhito, Denda, Kenzo, Pilot study of the effects of cognitive remediation therapy using the frontal/executive program for treating chronic schizophrenia, The Open Psychology Journal Vol 9 2016, ArtID 121-128, 9, 2016	Country not in protocol - Japan.
Palumbo, D., Mucci, A., Piegari, G., D'Alise, V., Mazza, A., Galderisi, S., SoCIAL - training cognition in schizophrenia: A pilot study, Neuropsychiatric Disease and Treatment, 13, 1947-1956, 2017	Outcomes not relevant
Park, H., Lee, D. H., Ko, S. M., Choi, Y. S., Kim, K. J., W. Choi J, A randomized controlled pilot study of CBSST (cognitive behavioral social skills training) for middle-or older-aged patients with schizophrenia: a pilot study, revisited cognitively, International psychogeriatrics., 25, S159, 2013	Country not in protocol (Korea)
Park, K. M., Ku, J., Choi, S. H., Jang, H. J., Park, J. Y., Kim, S. I., Kim, J. J., A virtual reality application in role-plays of social skills training for schizophrenia: a randomized, controlled trial, Psychiatry research, 189, 166â□□172, 2011	Country not in protocol (Korea)
Parker, A. G., Hetrick, S. E., Jorm, A. F., Yung, A. R., McGorry, P. D., Mackinnon, A., Moller, B., Purcell, R., The effectiveness of simple psychological and exercise interventions for high prevalence mental health problems in young people: a factorial randomised controlled trial, Trials [Electronic Resource], 12, 76, 2011	Study protocol
Patterson, M., Moniruzzaman, A., Palepu, A., Zabkiewicz, D., Frankish, C. J., Krausz, M., Somers, J. M., Housing First improves subjective quality of life among homeless adults with mental illness: 12-month findings from a randomized controlled trial in Vancouver, British Columbia, Social psychiatry and psychiatric epidemiology, 48, 1245-1259, 2013	Intervention not in scope
Patterson, Thomas L., Bucardo, Jesus, McKibbin, Christine L., Mausbach, Brent T., Moore, David, Barrio, Concepcion, Goldman, Sherrill R., Jeste, Dilip V., Development and pilot testing of a new psychosocial intervention for older Latinos with chronic psychosis, Schizophrenia bulletin, 31, 922-930, 2005	Unclear whether in rehabilitation setting

Study	Reason for Exclusion
Pearsall, R., Smith, D. J., Pelosi, A., Geddes, J., Exercise therapy in adults with serious mental illness: a systematic review and meta-analysis, BMC Psychiatry, 14, 117, 2014	Outcomes not in protocol
Pekkala, E., Merinder, L., Psychoeducation for schizophrenia, Cochrane database of systematic reviews (online), CD002831, 2000	Early version of Xia 2013 Cochrane review
Pena, J., Sanchez, P., Elizagarate, E., Ibarretxe-Bilbao, N., Ezcurra, J., Caballero, L., Magarinos, M., Garcia Del Castillo, I., Gutierrez, M., Ojeda, N., Clinical (but not cognitive) recovery in schizophrenia through the experience of fictional cinema, Schizophrenia research: cognition, 2, 189â□□194, 2015	Outcomes not relevant
Penadés, R., Catalán, R., Salamero, M., Boget, T., Puig, O., Guarch, J., Gastó, C., Cognitive remediation therapy for outpatients with chronic schizophrenia: a controlled and randomized study, Schizophrenia research, 87, 323â□□331, 2006	Unclear whether in rehabilitation setting (outpatients)
Phillips, L. J., McGorry, P. D., Yuen, H. P., Ward, J., Donovan, K., Kelly, D., Francey, S. M., Yung, A. R., Medium term follow-up of a randomized controlled trial of interventions for young people at ultra high risk of psychosis, Schizophrenia Research, 96, 25â□□33, 2007	Population not relevant
Pilling, Steven, Bebbington, P., Kuipers, E., Garety, P., Geddes, J., Martindale, B., Orbach, G., Morgan, C., Psychological treatments in schizophrenia: II. Meta-analyses of randomized controlled trials of social skills training and cognitive remediation, Psychological MedicinePsychol Med, 32, 783-791, 2002	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Pioli, R., Vittorielli, M., Gigantesco, A., Rossi, G., Basso, L., Caprioli, C., Buizza, C., Corradi, A., Mirabella, F., Morosini, P., Falloon, I. R. H., Outcome assessment of the VADO approach in psychiatric rehabilitation: A partially randomised multicentric trial, Clinical practice and epidemiology in mental health, 2 (no pagination), 2006	Not an RCT
Pitkänen, A., Välimäki, M., Kuosmanen, L., Katajisto, J., Koivunen, M., Hätönen, H., Patel, A., Knapp, M., Patient education methods to support quality of life and functional ability among patients with schizophrenia: a randomised clinical trial, Quality of life research, 21, 247â□□256, 2012	Unclear whether in rehabilitation setting
Poremski, D., Rabouin, D., Latimer, E., A Randomised Controlled Trial of Evidence Based Supported Employment for People Who have Recently been Homeless and have a Mental Illness, Administration and policy in mental health, 44, 217-224, 2017	Population not relevant
Poremski, D., Stergiopoulos, V., Braithwaite, E., Distasio, J., Nisenbaum, R., Latimer, E., Effects of Housing First on Employment and Income of Homeless Individuals: Results of a Randomized Trial, Psychiatric Services, 67, 603-9, 2016	Intervention not relevant
Quinlivan, R., Hough, R., Crowell, A., Beach, C., Hofstetter, R., Kenworthy, K., Service utilization and costs of care for severely mentally ill clients in an intensive case management program, Psychiatric ServicesPsychiatr Serv, 46, 365-71, 1995	Intervention not relevant

Study	Reason for Exclusion
Rabins, P. V., Black, B. S., Roca, R., German, P., McGuire, M., Robbins, B., Rye, R., Brant, L., Effectiveness of a nurse-based outreach program for identifying and treating psychiatric illness in the elderly, JAMA, 283, 2802â□□2809, 2000	Intervention not relevant
Rabovsky, K., Trombini, M., Allemann, D., Stoppe, G., Efficacy of bifocal diagnosis-independent group psychoeducation in severe psychiatric disorders: results from a randomized controlled trial, European archives of psychiatry and clinical neuroscience, 262, 431â□□440, 2012	Outcomes not relevant
Rakitzi, Stavroula, Georgila, Polyxeni, Efthimiou, Konstantinos, Mueller, Daniel R., Efficacy and feasibility of the Integrated Psychological Therapy for outpatients with schizophrenia in Greece: Final results of a RCT, Psychiatry research, 242, 137-143, 2016	Unclear whether in rehabilitation settings
Rampling, J., Furtado, V., Winsper, C., Marwaha, S., Lucca, G., Livanou, M., Singh, S. P., Non-pharmacological interventions for reducing aggression and violence in serious mental illness: A systematic review and narrative synthesis, European Psychiatry, 34, 17-28, 2016	Outcomes not relevant
Razzano, L. A., Cook, J. A., Burke-Miller, J. K., Mueser, K. T., Pickett-Schenk, S. A., Grey, D. D., Goldberg, R. W., Blyler, C. R., Gold, P. B., Leff, H. S., Lehman, A. F., Shafer, M. S., Blankertz, L. E., McFarlane, W. R., Toprac, M. G., Ann Carey, M., Clinical factors associated with employment among people with severe mental illness: findings from the employment intervention demonstration program, Journal of Nervous & Mental Disease, 193, 705-13, 2005	Not an RCT
Rea, M. M., Tompson, M. C., Miklowitz, D. J., Goldstein, M. J., Hwang, S., Mintz, J., Family-focused treatment versus individual treatment for bipolar disorder: results of a randomized clinical trial, Journal of consulting and clinical psychology, 71, 482â□□492, 2003	Population not relevant (recently hospitalized)
Reeder, C., Newton, E., Frangou, S., Wykes, T., Which executive skills should we target to affect social functioning and symptom change? A study of a cognitive remediation therapy program, Schizophrenia bulletin, 30, 87â□□100, 2004	Post-hoc analysis of Delahunty 1993
Ren, J., Xia, J., Dance therapy for schizophrenia, Cochrane Database of Systematic Reviews, CD006868, 2013	Systematic review (1 study, no relevant outcomes)
Ren, X. F., Yan, S. H., Zhang, X. X., Fu, X. J., Amelioration effect of comprehensive rehabilitation therapy on social function defect in schizophrenic patients, Chinese journal of clinical rehabilitation, 8, 5746â□□5747, 2004	Study from China
Revell, E. R., Neill, J. C., Harte, M., Khan, Z., Drake, R. J., A systematic review and meta-analysis of cognitive remediation in early schizophrenia, Schizophrenia research, 168, 213-222, 2015	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Reynolds, W., Lauder, W., Sharkey, S., Maciver, S., Veitch, T., Cameron, D., The effects of a transitional discharge model for psychiatric patients, Journal of psychiatric and mental health nursing, 11, 82â□□88, 2004	Population unclear

Study	Reason for Exclusion
Rezansoff, S. N., Moniruzzaman, A., Fazel, S., McCandless, L., Procyshyn, R., Somers, J. M., Housing First Improves Adherence to Antipsychotic Medication Among Formerly Homeless Adults With Schizophrenia: results of a Randomized Controlled Trial, Schizophrenia Bulletin, 43, 852â□□861, 2017	Intervention not in protocol
Roberts, David L., Combs, Dennis R., Willoughby, Michael, Mintz, Jim, Gibson, Clare, Rupp, Betty, Penn, David L., A randomized, controlled trial of social cognition and interaction training (SCIT) for outpatients with schizophrenia spectrum disorders, British Journal of Clinical Psychology, 53, 281-298, 2014	Unclear whether in rehabilitation settings
Roder, V., Muller, D. R., Zorn, P., Social skills training in vocational rehabilitation of schizophrenia patients. Advantages of work-related social skills training in comparison to unspecific social skills training, Zeitschrift fur klinische psychologie und psychotherapie, 35, 256â□□266, 2006	German language
Rogers, E. S., Maru, M., Kash-MacDonald, M., Archer-Williams, M., Hashemi, L., Boardman, J., A Randomized Clinical Trial Investigating the Effect of a Healthcare Access Model for Individuals with Severe Psychiatric Disabilities, Community Mental Health Journal, 52, 667â□□674, 2016	Population not relevant
Rogers, E., Anthony, William A., Lyass, Asya, Penk, Walter E., A Randomized Clinical Trial of Vocational Rehabilitation for People With Psychiatric Disabilities, Rehabilitation Counseling Bulletin, 49, 143-156, 2006	Unclear whether in rehabilitation setting (most lived independently)
Roncone, R., Mazza, M., Frangou, I., De Risio, A., Ussorio, D., Tozzini, C., Casacchia, M., Rehabilitation of theory of mind deficit in schizophrenia: A pilot study of metacognitive strategies in group treatment, Neuropsychological rehabilitation, 14, 421-435, 2004	Unable to extract useful outcome data
Rosen, M. I., Ablondi, K., Black, A. C., Mueller, L., Serowik, K. L., Martino, S., Mobo, B. H., Rosenheck, R. A., Work outcomes after benefits counseling among veterans applying for service connection for a psychiatric condition, Psychiatric services (Washington, D.C.), 65, 1426â□□1432, 2014	Population not relevant
Rosenbaum, S., Tiedemann, A., Sherrington, C., Curtis, J., Ward, P. B., Physical activity interventions for people with mental illness: a systematic review and meta-analysis, Journal of Clinical Psychiatry, 75, 964-74, 2014	Outcomes not relevant
Rossler, W., Kawohl, W., Nordt, C., Haker, H., Rusch, N., Hengartner, M. P., "Placement Budgets" for Supported Employment-Impact on Quality of Life in a Multicenter Randomized Controlled Trial, Frontiers in psychiatry, 9, 462, 2018	Population not relevant
Rotondi, A. J., Haas, G., Anderson, C., Mueser, K., Effectiveness of web-based multi-family treatment delivered to the homes of persons with schizophrenia and their supporters, Schizophrenia bulletin., 39, S350, 2013	Outcomes not relevant
Royer, A., Grosselin, A., Bellot, C., Pellet, J., Billard, S., Lang, F., Brouillet, D., Massoubre, C., Is there any impact of	Outcomes not relevant

Study	Reason for Exclusion
cognitive remediation on an ecological test in schizophrenia?, Cognitive neuropsychiatry, 17, 19â□□35, 2012	
Ruddy, R. A., Dent-Brown, K., Drama therapy for schizophrenia or schizophrenia-like illnesses, Cochrane Database of Systematic Reviews, (1) (no pagination), 2007	None of the included studies (n=5) from this systematic review met our inclusion criteria
Ruddy, R., Milnes, D., Art therapy for schizophrenia or schizophreniaâ□□like illnesses, Cochrane Database of Systematic Reviews, 2005	No relevant outcomes reported
Ruiz, J. C., Fuentes, I., Roder, V., Tomas, P., Dasi, C., Soler, M. J., Effectiveness of the cognitive differentiation program of the integrated psychological therapy: Group versus individual treatment, Journal of nervous and mental disease, 199, 978-982, 2011	Comparison not relevant
Ruiz, M. I., Aceituno, D., Rada, G., Art therapy for schizophrenia?, Medwave, 17, e6845, 2017	Expert review
Rus-Calafell, M., Gutiérrez-Maldonado, J., Ortega-Bravo, M., Ribas-Sabaté, J., Caqueo-Urízar, A., A brief cognitive-behavioural social skills training for stabilised outpatients with schizophrenia: a preliminary study, Schizophrenia research, 143, 327â□□336, 2013	Unclear whether in rehabilitation settings
Rush, B. R., Dennis, M. L., Scott, C. K., Castel, S., Funk, R. R., The interaction of co-occurring mental disorders and recovery management checkups on substance abuse treatment participation and recovery, Evaluation Review, 32, 7-38, 2008	Population not relevant
Sachs, G., Winklbaur, B., Jagsch, R., Lasser, I., Kryspin-Exner, I., Frommann, N., Wölwer, W., Training of affect recognition (TAR) in schizophrenia--impact on functional outcome, Schizophrenia research, 138, 262â□□267, 2012	Outcomes not relevant
Sailer, P., Wieber, F., Propster, K., Stoewer, S., Nischk, D., Volk, F., Odenwald, M., A brief intervention to improve exercising in patients with schizophrenia: a controlled pilot study with mental contrasting and implementation intentions (MCII), BMC Psychiatry, 15, 211, 2015	Intervention not relevant
Salkever, D., Domino, M. E., Burns, B. J., Santos, A. B., Deci, P. A., Dias, J., a,, Faldowski, R. A., Paolone, J., Assertive community treatment for people with severe mental illness: the effect on hospital use and costs, Health services research, 34, 577â□□601, 1999	Intervention not in protocol
Salkever, D., Gibbons, B., Ran, X., Do comprehensive, coordinated, recovery-oriented services alter the pattern of use of treatment services? Mental health treatment study impacts on SSDI beneficiaries' use of inpatient, emergency, and crisis services.[Erratum appears in J Behav Health Serv Res. 2014 Oct;41(4):559], Journal of Behavioral Health Services & ResearchJ Behav Health Serv Res, 41, 434-46, 2014	Population unclear (diagnoses not reported)
Salyers, M. P., McGuire, A. B., Kukla, M., Fukui, S., Lysaker, P. H., Mueser, K. T., A randomized controlled trial of illness management and recovery with an active control group, Psychiatric services (Washington, D.C.), 65, 1005â□□1011, 2014	Unclear whether in rehabilitation setting or complex psychosis or related severe mental illness.

Study	Reason for Exclusion
Salyers, M. P., McGuire, A. B., Rollins, A. L., Bond, G. R., Mueser, K. T., Macy, V. R., Integrating assertive community treatment and illness management and recovery for consumers with severe mental illness, Community Mental Health Journal, 46, 319-29, 2010	Intervention not relevant
Salzer, M. S., Rogers, J., Salandra, N., O'Callaghan, C., Fulton, F., Balletta, A. A., Pizziketti, K., Brusilovskiy, E., Effectiveness of peer-delivered Center for Independent Living supports for individuals with psychiatric disabilities: A randomized, controlled trial, Psychiatric Rehabilitation JournalPsychiatr Rehabil J, 39, 239-47, 2016	Unclear whether in rehabilitation setting (outpatients)
Sancassiani, F., Cocco, A., Cossu, G., Lorrai, S., Trincas, G., Floris, F., Mellino, G., Machado, S., Nardi, A. E., Fabrici, E. P., et al.,, "VelaMente?!" - Sailin in a crew to improve self-efficacy in people with psychosocial disabilities: a randomized controlled trial, Clinical practice and epidemiology in mental health, 13, 200â□□212, 2017	Population not relevant
Sancassiani, F., Lorrai, S., Cossu, G., Cocco, A., Trincas, G., Floris, F., Mellino, G., Machado, S., Nardi, A. E., Fabrici, E. P., et al.,, The effects of "velaMente?!" Project on social functioning of people with severe psychosocial disabilities, Clinical practice and epidemiology in mental health, 13, 220â□□232, 2017	Population not relevant
Sanches, S. A., Van Busschbach, J. T., Michon, H. W. C., Van Weeghel, J., Swildens, W. E., The role of working alliance in attainment of personal goals and improvement in quality of life during psychiatric rehabilitation, Psychiatric Services, 69, 903-909, 2018	The diagnosis of included population is unclear
Sánchez, P., Peña, J., Bengoetxea, E., Ojeda, N., Elizagárate, E., Ezcurra, J., Gutiérrez, M., Improvements in negative symptoms and functional outcome after a new generation cognitive remediation program: a randomized controlled trial, Schizophrenia bulletin, 40, 707â□□715, 2014	Outcomes not relevant
Sanchez-Moreno, J., Bonnin, C., Gonzalez-Pinto, A., Amann, B. L., Sole, B., Balanza-Martinez, V., Arango, C., Jimenez, E., Tabares-Seisdedos, R., Garcia-Portilla, M. P., Ibanez, A., Crespo, J. M., Ayuso-Mateos, J. L., Vieta, E., Martinez-Aran, A., Torrent, C., Cibersam Functional Remediation Group, Do patients with bipolar disorder and subsyndromal symptoms benefit from functional remediation? A 12-month follow-up study, European neuropsychopharmacology, 27, 350-359, 2017	Unclear whether in rehabilitation setting
Sauve, G., Lepage, M., Corbiere, M., Impacts of vocational programs integrating cognitive remediation on job tenure in schizophrenia: A meta-analysis, Annales Medico Psychologiques., 2018	French language
Scheewe, T. W., Backx, F. J., Takken, T., Jorg, F., van Strater, A. C., Kroes, A. G., Kahn, R. S., Cahn, W., Exercise therapy improves mental and physical health in schizophrenia: a randomised controlled trial, Acta Psychiatrica Scandinavica, 127, 464-73, 2013	Outcomes not relevant

Study	Reason for Exclusion
Schonebaum, A. D., Boyd, J. K., Dudek, K. J., A comparison of employment outcomes for the clubhouse and PACT models, Psychiatric services (washington, D.C.), 57, 1416â□□1420, 2006	Population unclear (diagnoses not reported)
Schonebaum, A., Boyd, J., Work-ordered day as a catalyst of employment success, Psychiatric Rehabilitation Journal, 35, 391-395, 2012	Population unclear (diagnoses not reported)
Scott, J., Garland, A., Moorhead, S., A pilot study of cognitive therapy in bipolar disorders, Psychological medicine, 31, 459â□□467, 2001	Unclear whether in rehabilitation setting
Segal, S. P., Silverman, C. J., Temkin, T. L., Self-help and community mental health agency outcomes: a recovery-focused randomized controlled trial, Psychiatric services (Washington, D.C.), 61, 905â□□910, 2010	Population not relevant
Sellwood, W., Barrowclough, C., Tarrier, N., Quinn, J., Mainwaring, J., Lewis, S., Needs-based cognitive-behavioural family intervention for carers of patients suffering from schizophrenia: 12-Month follow-up, Acta Psychiatrica Scandinavica, 104, 346-355, 2001	Unclear whether population is relevant.
Sellwood, W., Thomas, C. S., Tarrier, N., Jones, S., Clewes, J., James, A., Welford, M., Palmer, J., McCarthy, E., A randomised controlled trial of home-based rehabilitation versus outpatient-based rehabilitation for patients suffering from chronic schizophrenia, Social Psychiatry & Psychiatric EpidemiologySoc Psychiatry Psychiatr Epidemiol, 34, 250-3, 1999	Not a relevant comparison
Sellwood, W., Wittkowski, A., Tarrier, N., Barrowclough, C., Needs-based cognitive-behavioural family intervention for patients suffering from schizophrenia: 5-year follow-up of a randomized controlled effectiveness trial, Acta psychiatrica scandinavica, 116, 447â□□452, 2007	See Sellwood 2001. Unclear whether relevant population
Sergi, M. J., Kern, R. S., Mintz, J., Green, M. F., Learning potential and the prediction of work skill acquisition in schizophrenia, Schizophrenia Bulletin, 31, 67-72, 2005	Not a relevant intervention
Sharifi, V., Tehranidoost, M., Yunesian, M., Amini, H., Mohammadi, M., Jalali Roudsari, M., Effectiveness of a low-intensity home-based aftercare for patients with severe mental disorders: a 12-month randomized controlled study, Community Mental Health Journal, 48, 766-770, 2012	Study conducted in Iran
Shern, D. L., Tsemberis, S., Anthony, W., Lovell, A. M., Richmond, L., Felton, C. J., Winarski, J., Cohen, M., Serving street-dwelling individuals with psychiatric disabilities: outcomes of a psychiatric rehabilitation clinical trial, American Journal of Public Health, 90, 1873â□□1878, 2000	Population not relevant
Simpson, C. J., Seager, C. P., Robertson, J. A., Home-based care and standard hospital care for patients with severe mental illness: a randomised controlled trial, British journal of psychiatry, 162, 239â□□243, 1993	Intervention not relevant
Skrinar,G.S., Huxley,N.A., Hutchinson,D.S., Menninger,E., Glew,P., The role of a fitness intervention on people with	Population not clear

Study	Reason for Exclusion
serious psychiatric disabilities, Psychiatric rehabilitation journal, 29, 122-127, 2005	
Smelson, D., Kalman, D., Losonczy, M. F., Kline, A., Sambamoorthi, U., Hill, L. S., Castles-Fonseca, K., Ziedonis, D., A brief treatment engagement intervention for individuals with co-occurring mental illness and substance use disorders: results of a randomized clinical trial, Community Mental Health Journal, 48, 127-132, 2012	Not a rehabilitation setting
Smith, D. J., Griffiths, E., Poole, R., di Florio, A., Barnes, E., Kelly, M. J., Craddock, N., Hood, K., Simpson, S., Beating Bipolar: exploratory trial of a novel Internet-based psychoeducational treatment for bipolar disorder, Bipolar disorders, 13, 571â□□577, 2011	Unclear whether in rehabilitation settings
Smith, M. J., Fleming, M. F., Wright, M. A., Jordan, N., Humm, L. B., Olsen, D., Bell, M. D., Job Offers to Individuals With Severe Mental Illness After Participation in Virtual Reality Job Interview Training, Psychiatric services (washington, D.C.), 66, 1173â□□1179, 2015	Unclear whether in rehabilitation setting
Smith, M. J., Fleming, M. F., Wright, M. A., Roberts, A. G., Humm, L. B., Olsen, D., Bell, M. D., Virtual reality job interview training and 6-month employment outcomes for individuals with schizophrenia seeking employment, Schizophrenia Research, 166, 86-91, 2015	Unclear whether rehabilitation setting
Smith, T. E., Hull, J. W., Romanelli, S., Fertuck, E., Weiss, K. A., Symptoms and neurocognition as rate limiters in skills training for psychotic patients, American Journal of Psychiatry, 156, 1817â□□1818, 1999	Outcomes not relevant
Somers, J. M., Moniruzzaman, A., Palepu, A., Changes in daily substance use among people experiencing homelessness and mental illness: 24-month outcomes following randomization to Housing First or usual care, Addiction (Abingdon, England), 110, 1605â□□1614, 2015	Not a relevant population
Somers, J. M., Patterson, M. L., Moniruzzaman, A., Currie, L., Rezansoff, S. N., Palepu, A., Fryer, K., Vancouver At Home: pragmatic randomized trials investigating Housing First for homeless and mentally ill adults, Trials, 14, 2013	Not a relevant intervention
Soundy, A., Roskell, C., Stubbs, B., Probst, M., Vancampfort, D., Investigating the benefits of sport participation for individuals with schizophrenia: a systematic review, Psychiatria DanubinaPsychiatr, 27, 2-13, 2015	Not relevant outcomes
Sousa, S. A., Corriveau, D., Lee, A. F., Bianco, L. G., Sousa, G. M., The LORS-enabled dialogue: a collaborative intervention to promote recovery from psychotic disorders, Psychiatric services (Washington, D.C.), 64, 58â□□64, 2013	Unclear whether rehabilitation setting.
Souto, Y. M., Campo, M. V., Llenderrozas, F. D., Alvarez, M. R., Mateos, R., Caballero, A. G., Randomized clinical trial with e-Motional Training 1.0 for social cognition rehabilitation in Schizophrenia, Frontiers in psychiatry, 9, 2018	Unclear whether rehabilitation setting.
Stanton, R., Happell, B., A systematic review of the aerobic exercise program variables for people with schizophrenia, Current Sports Medicine Reports, 13, 260-6, 2014	Outcomes not relevant

Study	Reason for Exclusion
Stefancic, A., Tsemberis, S., Housing First for long-term shelter dwellers with psychiatric disabilities in a suburban county: a four-year study of housing access and retention, Journal of primary prevention, 28, 265â□□279, 2007	Not a relevant intervention
Stergiopoulos, V., Hwang, S. W., Gozdzik, A., Nisenbaum, R., Latimer, E., Rabouin, D., Adair, C. E., Bourque, J., Connelly, J., Frankish, J., et al.,, Effect of scattered-site housing using rent supplements and intensive case management on housing stability among homeless adults with mental illness: a randomized trial, JAMA, 313, 905â□□915, 2015	Not a relevant intervention
Stiekema, A. P. M., Looijmans, A., van der Meer, L., Bruggeman, R., Schoevers, R. A., Corpeleijn, E., Jorg, F., Effects of a lifestyle intervention on psychosocial well-being of severe mentally ill residential patients: ELIPS, a cluster randomized controlled pragmatic trial, Schizophrenia Research, 199, 407-413, 2018	Population unclear
Stubbs, B., Rosenbaum, S., Ward, P. B., Barreto Schuch, F., Vancampfort, D., No evidence of a control group response in exercise randomised controlled trials in people with schizophrenia: A systematic review and meta-analysis, Psychiatry Research, 229, 840-3, 2015	Does not include relevant outcomes
Suijkerbuijk, Y. B., Schaafsma, F. G., van Mechelen, J. C., Ojajarvi, A., Corbiere, M., Anema, J. R., Interventions for obtaining and maintaining employment in adults with severe mental illness, a network meta-analysis, Cochrane Database of Systematic Reviews, 2017 (9) (no pagination), 2017	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Sungur, M. Z., Guner, P., Ustun, B., Cetin, I., Soygur, H., Optimal treatment project for schizophrenia: results from a randomized, controlled, longitudinal study, Seishin shinkeigaku zasshi, 105, 1175â□□1180, 2003	Full text not available in English
Swildens, W., van Busschbach, J. T., Michon, H., Kroon, H., Koeter, M. W., Wiersma, D., van Os, J., Effectively working on rehabilitation goals: 24-month outcome of a randomized controlled trial of the Boston psychiatric rehabilitation approach, Canadian journal of psychiatry. Revue canadienne de psychiatrie, 56, 751â□□760, 2011	Population not relevant
Sytema, S., Wunderink, L., Bloemers, W., Roorda, L., Wiersma, D., Assertive community treatment in the Netherlands: a randomized controlled trial, Acta Psychiatrica Scandinavica, 116, 105â□□112, 2007	Intervention not in protocol
Talwar, N., Crawford, M. J., Maratos, A., Nur, U., McDermott, O., Procter, S., Music therapy for in-patients with schizophrenia: exploratory randomised controlled trial, British journal of psychiatry, 189, 405-9, 2006	Outcomes not relevant
Tan, B. L., King, R., The effects of cognitive remediation on functional outcomes among people with schizophrenia: A randomised controlled study, Australian and New Zealand Journal of Psychiatry, 47, 1068-1080, 2013	Study conducted in Singapore
Tao, J., Zeng, Q., Liang, J., Zhou, A., Yin, X., Xu, A., Effects of cognitive rehabilitation training on schizophrenia: 2 years of	Study conducted in China

Study	Reason for Exclusion
follow-up, African journal of psychiatry (south africa), 18, 1â□□4, 2015	
Tarrier, N., Beckett, R., Harwood, S., Baker, A., Yusupoff, L., Ugarteburu, I., A trial of two cognitive-behavioural methods of treating drug-resistant residual psychotic symptoms in schizophrenic patients: i. Outcome, British Journal of Psychiatry, 162, 524â□□532, 1993	Outcomes not relevant
Tatsumi, E., Yotsumoto, K., Nakamae, T., Hashimoto, T., Effects of occupational therapy on hospitalized chronic schizophrenia patients with severe negative symptoms, The kobe journal of medical sciences, 57, E145â□□54, 2012	Study conducted in Japan
Terzian, E., Tognoni, G., Bracco, R., De Ruggieri, E., Ficociello, R. A., Mezzina, R., Pillo, G., Social network intervention in patients with schizophrenia and marked social withdrawal: a randomized controlled study, Canadian journal of psychiatry. Revue canadienne de psychiatrie, 58, 622â□□631, 2013	Unclear whether in rehabilitation setting.
Theodoridou, A., Hengartner, M. P., Gairing, S. K., Jäger, M., Ketteler, D., Kawohl, W., Lauber, C., Rössler, W., Evaluation of a new person-centered integrated care model in psychiatry, Psychiatric Quarterly, 86, 153â□□168, 2015	Not a relevant population
Thomas, E. C., Despeaux Katie, E., Drapalski, A. L., Bennett, M., Person-oriented recovery of individuals with serious mental illnesses: A review and meta-Analysis of longitudinal findings, Psychiatric Services, 69, 259-267, 2018	Outcomes not relevant
Thomas, M. L., Bismark, A. W., Joshi, Y. B., Tarasenko, M., Treichler, E. B. H., Hochberger, W. C., Zhang, W., Nungaray, J., Sprock, J., Cardoso, L., et al.,, Targeted cognitive training improves auditory and verbal outcomes among treatment refractory schizophrenia patients mandated to residential care, Schizophrenia research, (no pagination), 2018	Not relevant outcomes
Todd, N. J., Jones, S. H., Hart, A., Lobban, F. A., A web-based self-management intervention for Bipolar Disorder 'living with bipolar': a feasibility randomised controlled trial, Journal of Affective Disorders, 169, 21-9, 2014	Population unclear - self reported bipolar disorder. Online trial (researchers did not meet participants).
Torrent, C., Bonnin Cdel, M., Martínez-Arán, A., Valle, J., Amann, B. L., González-Pinto, A., Crespo, J. M., Ibáñez, Á, Garcia-Portilla, M. P., Tabarés-Seisdedos, R., et al.,, Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study, American journal of psychiatry, 170, 852â□□859, 2013	Unclear whether in rehabilitation setting.
Tsang, H. W., Chan, A., Wong, A., Liberman, R. P., Vocational outcomes of an integrated supported employment program for individuals with persistent and severe mental illness, Journal of behavior therapy and experimental psychiatry, 40, 292â□□305, 2009	Study conducted in Hong Kong
Tsang, M. M., Man, D. W., A virtual reality-based vocational training system (VRVTS) for people with schizophrenia in vocational rehabilitation, Schizophrenia research, 144, 51â□□62, 2013	Study conducted in Hong Kong

Study	Reason for Exclusion
Tungpunkom, P., Maayan, N., Soaresâ□□Weiser, K., Life skills programmes for chronic mental illnesses, Cochrane Database of Systematic Reviews, 2012	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Tungpunkom, P., Nicol, M., Life skills programmes for chronic mental illnesses, Cochrane Database of Systematic Reviews, (2) (no pagination), 2008	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Turkington, D., Kingdon, D., Weiden, P. J., Cognitive behavior therapy for schizophrenia, American journal of psychiatry, 163, 365-73, 2006	Not a systematic review
Turner, D. T., McGlanaghy, E., Cuijpers, P., van der Gaag, M., Karyotaki, E., MacBeth, A., A Meta-Analysis of Social Skills Training and Related Interventions for Psychosis, Schizophrenia bulletin, 44, 475-491, 2018	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Twamley, E. W., Jeste, D. V., Bellack, A. S., A review of cognitive training in schizophrenia, Schizophrenia bulletin, 29, 359-382, 2003	Expert review
Twamley, E. W., Jeste, D. V., Lehman, A. F., Vocational rehabilitation in schizophrenia and other psychotic disorders: A literature review and meta-analysis of randomized controlled trials, Journal of nervous and mental disease, 191, 515-523, 2003	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Twamley, E. W., Narvaez, J. M., Becker, D. R., Bartels, S. J., Jeste, D. V., Supported employment for middle-aged and older people with schizophrenia, American Journal of Psychiatric Rehabilitation, 11, 76-89, 2008	Unclear whether in rehabilitation setting
Twamley, E. W., Vella, L., Burton, C. Z., Becker, D. R., Bell, M. D., Jeste, D. V., The efficacy of supported employment for middle-aged and older people with schizophrenia, Schizophrenia Research, 135, 100â□□104, 2012	Unclear whether in rehabilitation setting
Twamley, E. W., Vella, L., Burton, C. Z., Heaton, R. K., Jeste, D. V., Compensatory cognitive training for psychosis: effects in a randomized controlled trial, Journal of clinical psychiatry, 73, 1212-9, 2012	Unclear how many participants were receiving rehabilitation.
Ulrich, G., Houtmans, T., Gold, C., The additional therapeutic effect of group music therapy for schizophrenic patients: a randomized study, Acta psychiatrica scandinavica, 116, 362â□□370, 2007	Unclear whether in rehabilitation setting or complex psychosis.
Valencia, M., Fresan, A., Juárez, F., Escamilla, R., Saracco, R., The beneficial effects of combining pharmacological and psychosocial treatment on remission and functional outcome in outpatients with schizophrenia, Journal of psychiatric research, 47, 1886â□□1892, 2013	Study conducted in Mexico
Valencia, M., Rascon, M. L., Juarez, F., Escamilla, R., Saracco, R., Liberman, R. P., Application in Mexico of psychosocial rehabilitation with schizophrenia patients, Psychiatry, 73, 248â□□263, 2010	Study conducted in Mexico
van der Gaag, M., Kern, R. S., van den Bosch, R. J., Liberman, R. P., A controlled trial of cognitive remediation in schizophrenia, Schizophrenia bulletin, 28, 167â□□176, 2002	Not relevant outcomes

Study	Reason for Exclusion
van der Gaag, M., Stant, A. D., Wolters, K. J., Buskens, E., Wiersma, D., Cognitive-behavioural therapy for persistent and recurrent psychosis in people with schizophrenia-spectrum disorder: cost-effectiveness analysis, British Journal of Psychiatry, 198, 59-65, sup 1, 2011	Outcomes not relevant (social functioning not reported separately)
van Gestel-Timmermans, H., Brouwers, E. P., van Assen, M. A., van Nieuwenhuizen, C., Effects of a peer-run course on recovery from serious mental illness: a randomized controlled trial, Psychiatric services (Washington, D.C.), 63, 54â□□60, 2012	Population does not include >67% with complex psychosis or related severe mental illness
Vancampfort, D., Probst, M., Helvik Skjaerven, L., Catalan-Matamoros, D., Lundvik-Gyllensten, A., Gomez-Conesa, A., Ijntema, R., De Hert, M., Systematic review of the benefits of physical therapy within a multidisciplinary care approach for people with schizophrenia, Physical TherapyPhys Ther, 92, 11-23, 2012	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Vaughan, K., Doyle, M., McConaghy, N., Blaszczynski, A., Fox, A., Tarrier, N., The Sydney intervention trial: a controlled trial of relatives' counselling to reduce schizophrenic relapse, Social psychiatry and psychiatric epidemiology, 27, 16â□□21, 1992	Population not relevant. Newly diagnosed cases not in rehabilitation settings.
Velligan, D. I., Diamond, P. M., Maples, N. J., Mintz, J., Li, X., Glahn, D. C., Miller, A. L., Comparing the efficacy of interventions that use environmental supports to improve outcomes in patients with schizophrenia, Schizophrenia research, 102, 312-9, 2008	Intervention not based in rehabilitation settings
Velligan, D. I., Diamond, P., Mueller, J., Li, X., Maples, N., Wang, M., Miller, A. L., The short-term impact of generic versus individualized environmental supports on functional outcomes and target behaviors in schizophrenia, Psychiatry research, 168, 94-101, 2009	Intervention not based in rehabilitation settings
Velligan, D. I., Prihoda, T. J., Ritch, J. L., Maples, N., Bow-Thomas, C. C., Dassori, A., A randomized single-blind pilot study of compensatory strategies in schizophrenia outpatients, Schizophrenia bulletin, 28, 283â□□292, 2002	Intervention not based in rehabilitation settings
Velligan, D. I., Roberts, D., Mintz, J., Maples, N., Li, X., Medellin, E., Brown, M., A randomized pilot study of MOtiVation and Enhancement (MOVE) Training for negative symptoms in schizophrenia, Schizophrenia Research, 165, 175-80, 2015	Outcomes not relevant
Velligan, Dawn I., Diamond, Pamela M., Mintz, Jim, Maples, Natalie, Li, Xueying, Zeber, John, Ereshefsky, Larry, Lam, Yui-Wing F., Castillo, Desiree, Miller, Alexander L., The use of individually tailored environmental supports to improve medication adherence and outcomes in schizophrenia, Schizophrenia bulletin, 34, 483-493, 2008	Intervention not based in rehabilitation settings
Velligan, Dawn I., Mueller, Janet, Wang, Mei, Dicocco, Margaret, Diamond, Pamela M., Maples, Natalie J., Davis, Barbara, Use of environmental supports among patients with schizophrenia, Psychiatric Services, 57, 219-224, 2006	Intervention not based in rehabilitation settings

Study	Reason for Exclusion
Veltro, F., Mazza, M., Vendittelli, N., Alberti, M., Casacchia, M., Roncone, R., A comparison of the effectiveness of problem solving training and of Cognitive-Emotional Rehabilitation on neurocognition, social cognition and social functioning in people with schizophrenia, Clinical practice and epidemiology in mental health, 7, 123â□□132, 2011	Intervention not based in rehabilitation settings
Vera-Garcia, E., Mayoral-Cleries, F., Vancampfort, D., Stubbs, B., Cuesta-Vargas, A. I., A systematic review of the benefits of physical therapy within a multidisciplinary care approach for people with schizophrenia: An update, Psychiatry Research, 229, 828-39, 2015	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Vittorielli, M., Pioli, R., Brambilla, L., Archiati, L., Rossi, G., Sleijpen, C., Magliano, L., Veltro, F., Morosini, P., Efficacy of the "VADO" approach in psychiatric rehabilitation: a controlled study, Epidemiologia e psichiatria sociale, 12, 43â□□52, 2003	Article in Italian
Vittorielli, M., Pioli, R., Brambilla, L., Archiati, L., Rossi, G., Sleijpen, C., Magliano, L., Veltro, F., Morosini, P., Parmeggiani, M., et al.,, VADO approach efficacy in psychiatric rehabilitation: a controlled study, Epidemiologia e psichiatria sociale, 12, 43â□□52, 2003	Conference abstract
Waghorn, G., Dias, S., Gladman, B., Harris, M., Saha, S., A multi-site randomised controlled trial of evidence-based supported employment for adults with severe and persistent mental illness, Australian occupational therapy journal, 61, 424â□□436, 2014	Population diagnosis is unclear
Wang, L., Zhou, J., Yu, X., Qiu, J., Wang, B., Psychosocial rehabilitation training in the treatment of schizophrenia outpatients: a randomized, psychosocial rehabilitation training- and monomedication-controlled study, Pakistan journal of medical sciences, 29, 2013	Study conducted in China
Webber, M., Fendt-Newlin, M., A review of social participation interventions for people with mental health problems, Social Psychiatry & Psychiatric Epidemiology, 52, 369-380, 2017	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Wenze, Susan J., Gaudiano, Brandon A., Weinstock, Lauren M., Tezanos, Katherine M., Miller, Ivan W., Adjunctive psychosocial intervention following hospital discharge for patients with bipolar disorder and comorbid substance use: A pilot randomized controlled trial, Psychiatry Research, 228, 516-525, 2015	Not relevant outcomes
Wiersma, D., Kluiter, H., Nienhuis, F. J., Rüphan, M., Giel, R., Costs and benefits of day treatment with community care for schizophrenic patients, Schizophrenia bulletin, 17, 411â□□419, 1991	Not a relevant intervention
Wolwer, W., Frommann, N., Social-cognitive remediation in schizophrenia: generalization of effects of the training of affect recognition (TAR), Schizophrenia bulletin, 37, S63â□□S70, 2011	Unclear whether population and setting is relevant.
Wood, Lisa, Byrne, Rory, Varese, Filippo, Morrison, Anthony P., Psychosocial interventions for internalised stigma in people with a schizophrenia-spectrum diagnosis: A systematic	Not all studies of the review are relevant. Review scanned for potential studies reporting functional outcomes.

Study	Reason for Exclusion
narrative synthesis and meta-analysis, Schizophrenia ResearchSchizophr Res, 176, 291-303, 2016	
Wykes, T., Huddy, V., Cellard, C., McGurk, S. R., Czobor, P., A meta-analysis of cognitive remediation for schizophrenia: Methodology and effect sizes, American journal of psychiatry, 168, 472-485, 2011	Outcomes not relevant
Wykes, Til, Reeder, Clare, Williams, Clare, Corner, Julia, Rice, Christopher, Everitt, Brian, Are the effects of cognitive remediation therapy(CRT) durable? Results from an exploratory trial in schizophrenia, Schizophrenia Research, 61, 163-174, 2003	Overlap with Wykes 2007
Xia, J., Grant, T. J., Dance therapy for schizophrenia, Cochrane Database of Systematic Reviews, CD006868, 2009	Early version of Ren 2013 Cochrane review
Xia, J., Merinder, L. B., Belgamwar, M. R., Psychoeducation for schizophrenia, Cochrane Database of Systematic ReviewsCochrane Database Syst Rev, CD002831, 2011	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.
Zhao, S., Sampson, S., Xia, J., Jayaram, M. B., Psychoeducation (brief) for people with serious mental illness, Cochrane Database of Systematic Reviews, 2015 (4) (no pagination), 2015	Systematic review, inclusion criteria do not match our protocol but checked for relevant studies.

Economic studies

A global economic literature search was undertaken for this guideline, covering all 18 review questions. The table below is a list of excluded studies across the entire guideline and studies listed were not necessarily identified for this review question.

Table 25: Excluded studies from the economic component of the review

Study	Reason for Exclusion
Aitchison, K J, Kerwin, R W, Cost-effectiveness of clozapine: a UK clinic-based study (Structured abstract), British Journal of PsychiatryBr J Psychiatry, 171, 125-130, 1997	Available as abstract only.
Barnes, T. R., Leeson, V. C., Paton, C., Costelloe, C., Simon, J., Kiss, N., Osborn, D., Killaspy, H., Craig, T. K., Lewis, S., Keown, P., Ismail, S., Crawford, M., Baldwin, D., Lewis, G., Geddes, J., Kumar, M., Pathak, R., Taylor, S., Antidepressant Controlled Trial For Negative Symptoms In Schizophrenia (ACTIONS): a double-blind, placebo-controlled, randomised clinical trial, Health Technology Assessment (Winchester, England)Health Technol Assess, 20, 1-46, 2016	Does not match any review questions considered in the guideline.
Barton, Gr, Hodgekins, J, Mugford, M, Jones, Pb, Croudace, T, Fowler, D, Cognitive behaviour therapy for improving social recovery in psychosis: cost-effectiveness analysis	Available as abstract only.

Study	Reason for Exclusion
(Structured abstract), Schizophrenia ResearchSchizophr Res, 112, 158-163, 2009	
Becker, T., Kilian, R., Psychiatric services for people with severe mental illness across western Europe: what can be generalized from current knowledge about differences in provision, costs and outcomes of mental health care?, Acta Psychiatrica Scandinavica, SupplementumActa Psychiatr Scand Suppl, 9-16, 2006	Not an economic evaluation.
Beecham, J, Knapp, M, McGilloway, S, Kavanagh, S, Fenyo, A, Donnelly, M, Mays, N, Leaving hospital II: the cost-effectiveness of community care for former long-stay psychiatric hospital patients (Structured abstract), Journal of Mental HealthJ Ment Health, 5, 379-94, 1996	Available as abstract only.
Beecham, J., Knapp, M., Fenyo, A., Costs, needs, and outcomes, Schizophrenia BulletinSchizophr Bull, 17, 427-39, 1991	Costing analysis prior to year 2000
Burns, T., Raftery, J., Cost of schizophrenia in a randomized trial of home-based treatment, Schizophrenia BulletinSchizophr Bull, 17, 407-10, 1991	Not an economic evaluation. Date is prior to 2000
Bush, P. W., Drake, R. E., Xie, H., McHugo, G. J., Haslett, W. R., The long-term impact of employment on mental health service use and costs for persons with severe mental illness, Psychiatric ServicesPsychiatr Serv, 60, 1024-31, 2009	A United States costing analysis. Outcomes which relate to the Welfare system differs in substantial ways to a UK context.
Chalamat, M., Mihalopoulos, C., Carter, R., Vos, T., Assessing cost-effectiveness in mental health: vocational rehabilitation for schizophrenia and related conditions, Australian & New Zealand Journal of PsychiatryAust N Z J Psychiatry, 39, 693-700, 2005	Australian cost-benefit analysis - welfare system differs from UK context.
Chan, S., Mackenzie, A., Jacobs, P., Cost-effectiveness analysis of case management versus a routine community care organization for patients with chronic schizophrenia, Archives of Psychiatric NursingArch Psychiatr Nurs, 14, 98-104, 2000	Study conducted in Hong Kong. A costing analysis.
Clark, R. E., Teague, G. B., Ricketts, S. K., Bush, P. W., Xie, H., McGuire, T. G., Drake, R. E., McHugo, G. J., Keller, A. M., Zubkoff, M., Cost-effectiveness of assertive community treatment versus standard case management for persons with co-occurring severe mental illness and substance use disorders, Health Services ResearchHealth Serv Res, 33, 1285-308, 1998	Not cost-utility analysis. Cost-effectiveness analysis but does not consider UK setting. Date of study is prior to year 2000.
Crawford, M. J., Killaspy, H., Barnes, T. R., Barrett, B., Byford, S., Clayton, K., Dinsmore, J., Floyd, S., Hoadley, A., Johnson, T., Kalaitzaki,	Study not an economic evaluation.

Study	Reason for Exclusion
E., King, M., Leurent, B., Maratos, A., O'Neill, F. A., Osborn, D., Patterson, S., Soteriou, T., Tyrer, P., Waller, D., Matisse project team, Group art therapy as an adjunctive treatment for people with schizophrenia: a randomised controlled trial (MATISSE), Health Technology Assessment (Winchester, England)Health Technol Assess, 16, iii-iv, 1-76, 2012	
Dauwalder, J. P., Ciompi, L., Cost-effectiveness over 10 years. A study of community-based social psychiatric care in the 1980s, Social Psychiatry & Psychiatric EpidemiologySoc Psychiatry Psychiatr Epidemiol, 30, 171-84, 1995	Practice has changed somewhat since 1980s - not a cost effectiveness study.
Garrido, G., Penades, R., Barrios, M., Aragay, N., Ramos, I., Valles, V., Faixa, C., Vendrell, J. M., Computer-assisted cognitive remediation therapy in schizophrenia: Durability of the effects and cost-utility analysis, Psychiatry ResearchPsychiatry Res, 254, 198-204, 2017	Cost effectiveness study, but population of interest is not focussed on rehabilitation for people with complex psychosis.
Hallam, A., Beecham, J., Knapp, M., Fenyo, A., The costs of accommodation and care. Community provision for former long-stay psychiatric hospital patients, European Archives of Psychiatry & Clinical NeuroscienceEur Arch Psychiatry Clin Neurosci, 243, 304-10, 1994	Economic evaluation predates 2000. Organisation and provision of care may have changed by some degree.
Hu, T. W., Jerrell, J., Cost-effectiveness of alternative approaches in treating severely mentally ill in California, Schizophrenia BulletinSchizophr Bull, 17, 461-8, 1991	A United States costing analysis. Outcomes which relate to the Welfare system differs in substantial ways to a UK context.
Jaeger, J., Berns, S., Douglas, E., Creech, B., Glick, B., Kane, J., Community-based vocational rehabilitation: effectiveness and cost impact of a proposed program model.[Erratum appears in Aust N Z J Psychiatry. 2006 Jun-Jul;40(6-7):611], Australian & New Zealand Journal of PsychiatryAust N Z J Psychiatry, 40, 452-61, 2006	Study is a New Zealand based costing analysis of limited applicability to the UK.
Jonsson, D., Walinder, J., Cost-effectiveness of clozapine treatment in therapy-refractory schizophrenia, Acta Psychiatrica ScandinavicaActa Psychiatr Scand, 92, 199-201, 1995	Costing analysis which predates year 2000.
Knapp, M, Patel, A, Curran, C, Latimer, E, Catty, J, Becker, T, Drake, Re, Fioritti, A, Kilian, R, Lauber, C, Rossler, W, Tomov, T, Busschbach, J, Comas-Herrera, A, White, S, Wiersma, D, Burns, T, Supported employment: cost-effectiveness across six European sites (Structured abstract), World Psychiatry, 12, 60-68, 2013	Available as abstract only.

Study	Reason for Exclusion
Lazar, S. G., The cost-effectiveness of psychotherapy for the major psychiatric diagnoses, Psychodynamic psychiatry, 42, 2014	Review of clinical and cost studies on psychotherapy. Studies cited do not match population for relevant review question.
Leff, J, Sharpley, M, Chisholm, D, Bell, R, Gamble, C, Training community psychiatric nurses in schizophrenia family work: a study of clinical and economic outcomes for patients and relatives (Structured abstract), Journal of Mental HealthJ Ment Health, 10, 189-197, 2001	Structured abstract. Not a cost effectiveness study.
Liffick, E., Mehdiyoun, N. F., Vohs, J. L., Francis, M. M., Breier, A., Utilization and Cost of Health Care Services During the First Episode of Psychosis, Psychiatric ServicesPsychiatr Serv, 68, 131-136, 2017	A United States costing analysis. Outcomes which relate to the Welfare system differs in substantial ways to a UK context.
Mihalopoulos, C., Harris, M., Henry, L., Harrigan, S., McGorry, P., Is early intervention in psychosis cost-effective over the long term?, Schizophrenia BulletinSchizophr Bull, 35, 909-18, 2009	Not a cost utility analysis. Australian costing analysis.
Perlis, R H, Ganz, D A, Avorn, J, Schneeweiss, S, Glynn, R J, Smoller, J W, Wang, P S, Pharmacogenetic testing in the clinical management of schizophrenia: a decision-analytic model (Structured abstract), Journal of Clinical Psychopharmacology, 25, 427-434, 2005	Structured abstract. Does not match any review question considered in this guideline.
Quinlivan, R., Hough, R., Crowell, A., Beach, C., Hofstetter, R., Kenworthy, K., Service utilization and costs of care for severely mentally ill clients in an intensive case management program, Psychiatric ServicesPsychiatr Serv, 46, 365-71, 1995	A United States costing analysis. Outcomes which relate to the Welfare system differs in substantial ways to a UK context.
Roine, E., Roine, R. P., Rasanen, P., Vuori, I., Sintonen, H., Saarto, T., Cost-effectiveness of interventions based on physical exercise in the treatment of various diseases: a systematic literature review, International Journal of Technology Assessment in Health CareInt J Technol Assess Health Care, 25, 427-54, 2009	Literature review on cost effectiveness studies based on physical exercise for various diseases and population groups - none of which are for complex psychosis.
Rosenheck, R A, Evaluating the cost-effectiveness of reduced tardive dyskinesia with second-generation antipsychotics (Structured abstract), British Journal of PsychiatryBr J Psychiatry, 191, 238-245, 2007	Structured abstract. Does not match any review question considered in this guideline.
Rund, B. R., Moe, L., Sollien, T., Fjell, A., Borchgrevink, T., Hallert, M., Naess, P. O., The Psychosis Project: outcome and cost-effectiveness of a psychoeducational treatment programme for schizophrenic adolescents, Acta Psychiatrica ScandinavicaActa Psychiatr Scand, 89, 211-8, 1994	Not an economic evaluation. Cost effectiveness discussed in narrative only, with a few short sentences.

Study	Reason for Exclusion
Sacristan, J A, Gomez, J C, Salvador-Carulla, L, Cost effectiveness analysis of olanzapine versus haloperidol in the treatment of schizophrenia in Spain (Structured abstract), Actas Luso-espanolas de Neurologia, Psiquiatria y Ciencias Afines, 25, 225-234, 1997	Available as abstract only.
Torres-Carbajo, A, Olivares, J M, Merino, H, Vazquez, H, Diaz, A, Cruz, E, Efficacy and effectiveness of an exercise program as community support for schizophrenic patients (Structured abstract), American Journal of Recreation Therapy, 4, 41-47, 2005	Available as abstract only
Wang, P S, Ganz, D A, Benner, J S, Glynn, R J, Avorn, J, Should clozapine continue to be restricted to third-line status for schizophrenia: a decision-analytic model (Structured abstract), Journal of Mental Health Policy and Economics, 7, 77-85, 2004	Available as abstract only.
Yang, Y K, Tarn, Y H, Wang, T Y, Liu, C Y, Laio, Y C, Chou, Y H, Lee, S M, Chen, C C, Pharmacoeconomic evaluation of schizophrenia in Taiwan: model comparison of long-acting risperidone versus olanzapine versus depot haloperidol based on estimated costs (Structured abstract), Psychiatry and Clinical Neurosciences, 59, 385-394, 2005	Taiwan is not an OECD country.
Zhu, B., Ascher-Svanum, H., Faries, D. E., Peng, X., Salkever, D., Slade, E. P., Costs of treating patients with schizophrenia who have illness-related crisis events, BMC Psychiatry, 8, 2008	USA costing analysis. The structure of the US health system means that costs do not translate well into a UK context.

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Appendix L – Research recommendations

Research recommendations for review question 5.3: What interventions specific to rehabilitation are effective for people with complex psychosis and related severe mental health conditions to improve their engagement in community activities (for example, leisure, education and work)?:

Research question

How can peer-support interventions be used most effectively to support people with complex psychosis and related severe mental health conditions using rehabilitation services?

Why this is important

Peer support is support or services provided to people with mental health problems by other people who have experienced these problems themselves. It has been advocated as a way to improve recovery irrespective of diagnosis and so fits within the 'recovery-orientated framework' advocated by specialist rehabilitation services. However, it is not clear how best to adapt and deliver peer support to people with complex psychosis who have multiple disabilities including difficulties forming and maintaining personal relationships thought to be a vital aspect of peer support.

Table 26: Research recommendation rationale

Research question	How can peer-support interventions be used most effectively to support people with complex psychosis and related severe mental health conditions using rehabilitation services?
Why is this needed	
Importance to 'patients' or the population	Peer support is helpful in promoting many of the core disabilities experienced by patients in rehabilitation services. This includes promoting self-efficacy and hope through modelling recovery and coping. There is an advantage to having a companion who has 'been through it' themselves. The potential for recipients to provide reciprocal support is also extremely valuable.
Relevance to NICE guidance	Although widely supported in the literature and valued by the committee, there was no directly relevant research to guide the development of peer support in complex psychosis and rehabilitation services.
Relevance to the NHS	Peer support is provided by many Mental Health Trusts with a variety of models and target patient populations.
National priorities	Widely supported as part of broader principles of increasing user involvement in service delivery.
Current evidence base	Clinical trials testing a range different models exist but none specific to the population in question. Other evidence is descriptive and observational.
Equality	All people with complex psychosis in hospital and supported living.

Research question	How can peer-support interventions be used most effectively to support people with complex psychosis and related severe mental health conditions using rehabilitation services?
Feasibility	Peer support schemes are being provided by many mental health trusts but will need adapting to the particular patient population of this guidance.
Other comments	None

NHS: national health service

Table 27: Research recommendation modified PICO table

Criterion	Explanation
Population	Adults 18+ with complex psychosis or related severe mental health conditions in inpatient or community rehabilitation
Intervention	Peer support
Comparator	Other types of peer support intervention
Outcomes	Critical outcomes • Engagement with community activities • Quality of life • Social inclusion Important outcomes • Social skills, social and occupational functioning • Readmission/relapse • Sustaining tenancy (of accommodation)
Study design	Randomised controlled trial
Timeframe	3 years
Additional information	None

PICO: population intervention comparator outcomes

Research question

What staff training interventions are effective at facilitating personal recovery for people with complex psychosis and related severe mental health conditions?

Why this is important

Personal recovery in activities of daily living, interpersonal functioning, and engagement in community activities are essential goals of rehabilitation services. Interventions to achieve these goals could be mediated through staff training, but studies of staff training interventions were not identified.

Table 28: Research recommendation rationale

Research question	What staff training interventions are effective at facilitating personal recovery for people with complex psychosis and related severe mental health conditions?
Why is this needed	
Importance to 'patients' or the population	Personal recovery in activities of daily living, interpersonal functioning, and engagement in community activities are key goals for people using rehabilitation services.
Relevance to NICE guidance	There was no directly relevant research identified related to staff training interventions to improve personal recovery in rehabilitation, but if effective could help people transition through the rehabilitation pathway.
Relevance to the NHS	People transitioning through the rehabilitation pathway would improve clinical outcomes and reduce costs to the NHS.
National priorities	People's recovery is widely supported.
Current evidence base	There were no randomised controlled trials identified directly relevant to staff training interventions to improve personal recovery for people using rehabilitation services.
Equality	All staff working in rehabilitation services.
Feasibility	A study of a staff training intervention is feasible.
Other comments	None

NHS: national health service

Table 29: Research recommendation modified PICO table

Criterion	Explanation
Population	Staff working with adults 18+ with complex psychosis or related severe mental health conditions in inpatient or community rehabilitation
Intervention	Staff training interventions
Comparator	No staff training intervention, or other types of staff training intervention
Outcomes	Critical outcomes • Activities of daily living • Interpersonal functioning (social skills) • Engagement with community activities • Readmission/Relapse Important outcomes • Quality of life

Criterion	Explanation
	• Challenging behaviour
Study design	Randomised controlled trial
Timeframe	1 year
Additional information	None

1 *PICO: population intervention comparator outcomes*