

There is fair (2b) level evidence that living skills training is effective at improving independence in food preparation, money management, personal possessions, and efficacy, in adults with persistent schizophrenia

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CLINICAL SCENARIO:

Skills training is a commonly used occupational therapy intervention for people with schizophrenia. Essentially, it involves training patients in basic conversation skills, recreation for leisure, medication management, and symptoms management. What is the effectiveness of this intervention for improving independent living skills, and is it more effective than other psychosocial occupational therapy interventions?

FOCUSSED CLINICAL QUESTION:

What is the evidence that skills training is more effective than other psychosocial occupational therapy interventions, for increasing independence in living skills, in adults with schizophrenia?

SUMMARY of Search, 'Best' Evidence' appraised, and Key Findings:

One randomised controlled trial (RCT) was located that met all of the inclusion/exclusion criteria, and answered the focused clinical question. This RCT (Lieberman, Wallace, Blackwell, Kopelowicz, Vaccaro, & Mintz, 1998) found that skills training led to a statistically significant improvement in the living skills of; personal possessions, food preparation, money management, and life distress adaptation (efficacy), in adults with persistent schizophrenia. These results are of clinical importance to occupational therapists because skills training is an intervention commonly used by occupational therapists.

CLINICAL BOTTOM LINE:

Skills training has been found to have a statistically significant effect on improving independence, over a two year period, in the living skills of; personal possessions ($p=0.03$), food preparation ($p=0.05$), money management ($p=0.03$), and life distress adaptation (efficacy, $p=0.02$), in adults with persistent schizophrenia, compared to psychosocial occupational therapy, with fair (2b) level of evidence. However, this study did not consider clinical significance or clinical importance, which limits the value of this RCT

Limitation of this CAT: This CAT was reviewed by a lecturer as part of a university assignment, but was not externally peer reviewed.

SEARCH STRATEGY:

Terms used to guide Search Strategy:

- **P**atient/Client: mental health, adults OR over 18 years old, schizophrenia
- **I**ntervention: skills training, occupational therapy
- **C**omparison: psychosocial occupational therapy
- **O**utcome(s): increased independence OR increased function

Methodology

Using the levels of evidence as defined by the Oxford Center for Evidence-based Medicine (Phillips, Ball, Sackett, Badenoch, Straus, Haynes, & Dawes, 1998), the search strategy aimed to locate the following study designs:

- Level 1a: Systematic reviews and meta-analyses of randomised controlled trials;
- Level 2a: Systematic reviews and meta-analyses of randomised and non randomised controlled trials;
- Level 1b: Randomised controlled trials;
- Level 2b: Controlled trials, Cohort;
- Level 3b: Case-control studies
- Level 4: Case series; or
- Level 5: Expert opinion including literature/narrative reviews, consensus statements, descriptive studies and individual case studies.

Clinical guidelines were also searched for evidence according to these guidelines.

Data bases and sites searched	Search Terms	Limits used
<ul style="list-style-type: none"> • NZ Guidelines Group • Scottish Intercollegiate Guideline network (SIGN) • National Guideline Clearinghouse • National Health and Medical Research Council (NHMRC) • Cochrane Library • McMaster Occupational Therapy Group site • Medline; CINAHL; OT Seeker; PubMed 	mental health OR schizophren* AND skills training AND occupational therapy	English Humans 1994-2004

INCLUSION and EXCLUSION CRITERIA

- *Inclusion:*
 - *Studies including increased independence in living skills, or community functioning related outcomes for people with schizophrenia. Eg. Money management skills.
 - *Studies investigating the effectiveness of skills training techniques for adults with schizophrenia.
 - *Studies published within the last ten years (i.e. After 1994).
- *Exclusion:*
 - *Studies investigating the use of psychosocial interventions other than skills training. For example, cognitive behaviour therapy, or medication.
 - *Studies involving people with mental health diagnosis other than schizophrenia, such as depression, and Alzheimer's disease.
 - *Studies involving children or adolescents (i.e. Excluded ages 0-18 years).
 - *Studies published prior to 1994.
 - *Conference and meeting abstracts, and letters were excluded.

RESULTS OF SEARCH

One relevant study was located and categorized as shown in Table 1 (based on Level of Evidence, Oxford Centre for Evidence Based Medicine, 1998).

Table 1: Summary of Study Designs of Articles retrieved

Level of Evidence	Study Design/ Methodology of Articles Retrieved	Number Located	Source(s)
	Clinical Guidelines	0	N/A
Level 1a or 2a	Systematic reviews	0	N/A
Level 1b or 2b	Randomised controlled trials	1 (level 2b)	Medline, Cochrane Library, PubMed
Level 3	Case-control studies	0	N/A
Level 4	Case series	0	N/A
Level 5	Expert opinion	0	N/A

BEST EVIDENCE

- The article by Liberman and colleagues (1998) was identified as the 'best' evidence and selected for critical appraisal because it was the only article that met all inclusion/exclusion criteria, and addressed the focused clinical question. Therefore, it was considered the best evidence and was consequently appraised.

SUMMARY OF BEST EVIDENCE

Table 2: Description and appraisal of RCT by Liberman and colleagues (1998).

Aim of the study

To compare the relative impact of psychosocial occupational therapy and skills training on persons with persistent and long-term schizophrenia.

Intervention Investigated

A randomised controlled trial, involving 84 participants, who were randomly allocated in groups of 10-12 people, into either a treatment group that received skills training or a control group, that received psychosocial occupational therapy. Both groups received intervention for three hours per day, four days per week, for six months.

Inclusion criteria consisted of persistent or unremitting forms of schizophrenia, and one or more psychotic symptoms on the extended BPR. All participants were reported to be statistically similar at baseline in variables such as age (mean=37.1), education level (mean=12.3 years), and duration of illness (mean=14.8 years). All participants were males.

Participants in the treatment group received training in the UCLA social and independent living skills program, including basic conversation, recreation for leisure, medication management, and symptom management. This intervention was provided by one occupational therapist and three paraprofessionals.

Participants in the control group received psychosocial occupational therapy from three occupational therapists focusing on expressive, artistic, and recreational activities that mediated supportive therapy.

Outcome Measures (Primary and Secondary)

The primary outcome measure used was the Independent Living Skills Survey. This measured how often participants used the skills learnt during the training, in everyday life. More specifically, it measured living skills areas such as; public transport, money management, job seeking, and social relations.

There were seven secondary measures. These were;

Social Activities Scale

The Profile of Adaptation to Life

Global Assessment Scale (GAS)

The Expanded Brief Psychiatric Rating Scale

Brief Symptom Inventory

Rosenberg Self-Esteem Scale

Lehman Quality of Life Scale

All outcome measures were administered at baseline, at six months, twelve months, eighteen months, and twenty-four months. Therefore all measurements were taken five times in total.

Results

Assessment/ Outcome measure	Occupational therapy mean scores	Social skills training mean scores	Mean difference *	P values
Independent Living Skills Survey				
a) Personal hygiene	-1.96	-2.97	1.01	0.76
b) Personal appearance	-1.56	1.96	3.52	0.02
c) Personal possessions	2.97	11.54	8.57	0.03
d) Food preparation	4.71	9.89	5.18	0.05
e) Health maintenance	7.48	8.51	1.03	0.13
f) Money management	3.30	11.78	8.48	0.03
g) Transportation	3.86	7.20	3.34	0.38
h) Leisure and recreation	-0.12	2.62	2.5	0.49
i) Job-seeking skills	6.98	18.11	11.13	0.10
j) Job maintenance	20.76	26.17	5.41	0.50
Total of scores	2.70	7.22	4.52	0.03
Rosenberg Self-Esteem Scale	-0.84	-1.44	0.6	0.41
Brief Symptom Inventory	-6.37	-14.74	8.37	0.10
The Profile of Adaptation to Life				
a) Distress	0.17	-0.20	0.37	0.02
b) Efficacy	0.32	0.29	0.03	0.86
Social Activities Scale	-1.09	-0.66	0.43	0.64
Lehman Quality of Life Scale	0.29	0.38	0.09	0.60
Global Assessment Scale (GAS)	1.62	0.53	1.09	0.48

*NB Insufficient data provided to calculate 95% CI

The authors reported that the cohort receiving skills training showed significantly greater improvement averaged across the 2-year follow-up period for total scores on the Independent Living Skills Survey ($p=0.03$). Several of the subscales of the Independent Living Skills Survey also showed a statistically significant advantage for the skills training group. These subscales were; personal possessions ($p=0.03$), Food preparation ($p=0.05$), and money management ($p=0.03$). Another statistically significant result in favour of the skills training group was found in the Profile of Adaptation to Life, section 1 efficacy ($p=0.02$). No other measures showed a statistically significant difference.

Original Authors' Conclusions

Skills training can be effectively conducted by paraprofessionals, with durability and generalisation of the skills greater than that achieved by occupational therapists who provided their patients with psychosocial occupational therapy.

Critical Appraisal:

Validity (*Methodology, rigour, selection, bias*)

Sampling:

Participants were assigned to the treatment or control group using random allocation.

It was not reported if participants volunteered or were referred to the study.

The authors provided reasons for why blinding of the participants and the treating case managers was not possible for this study.

Only 70 out of the 84 participants completed the entire two-year study (83%). This may affect the internal validity, because the final group may not be representative of the original sample.

All participants were reported to be matched on background data such as age, level of education, average duration of illness, and all participants rated as either moderate or higher on the Expanded Brief Psychiatric Rating Scale (BPRS). However no raw figures were provided regarding this baseline data.

No power calculations were provided, therefore no comment can be made regarding the adequacy of the sample size.

Measurement:

Multiple outcome measures were used (a total of eight). This may lead to a type 1 error, which could favour the control group because the large number of statistical calculations reduces the ability to find a significant difference between the treatment and control groups.

The primary outcome measure (Independent Living Skills Survey) does not measure what was taught in the social skills training program.

No baseline measurements were provided, nor were the total possible scores for each outcome measure, therefore clinical significance cannot be calculated.

The faithfulness and consistency of the module leaders to the procedures in the trainers' manuals were rated weekly by their supervisor through the use of an observational checklist, and feedback was given to maintain high levels of trustworthiness.

Intervention:

The intervention and site of treatment was not discussed in detail (i.e. exactly what the therapists did during each of the interventions) and is therefore difficult to replicate.

The case managers were more experienced in the psychosocial occupational therapy intervention (the control group), than the social skills training (treatment group), thus possibly favouring the control group.

The authors provided reasoning for why they had the same case managers for both groups.

Results (*Favourable or unfavourable, specific outcomes of interest, size of treatment effect, statistical and clinical significance; minimal clinically important difference*)

Between groups differences were calculated, within groups were not.

Only 70 out of the 84 participants completed the entire two-year study (83%). This can affect the internal validity, because the final group may not be representative of the original sample.

Baseline results were not provided, therefore it cannot be guaranteed that participants were similar at baseline, thus affecting the validity of the results.

No confidence intervals or standard deviations were provided for the estimation of the treatment effect between the treatment group (social skills training) and the control group (psychosocial occupational therapy).

The total possible scores that could be achieved on each of the outcome measures were not provided. Therefore clinical significance cannot be calculated.

IMPLICATIONS FOR PRACTICE/ APPLICABILITY

Skills training appears to provide some potential benefit for improving independence in living skills for male adults with persistent schizophrenia. In particular, it showed a statistically significant benefit in the areas of personal possessions, food preparation, money management, and adaptation to life (efficacy).

However, it is not recommended that a clinician alter their therapy solely on the results of this study, due to the limitations of its methodology and rigour. The study did not provide enough detail on the interventions undertaken, or the sampling and randomisation procedures, therefore making it difficult to replicate the study. Furthermore, the primary outcome measure (Independent Living Skills Survey) did not measure the specific areas of training, thus it cannot be determined if the positive changes were a result of the skills training.

Finally, a discussion of clinical significance was not provided, nor could it be calculated due to insufficient data. Therefore, the usefulness of skills training in the clinical setting cannot be guaranteed. Further research is needed to establish whether skills training is the most effective occupational therapy intervention, for adults with persistent schizophrenia.

REFERENCES

Article critically appraised:

1. Liberman, R.P., Wallace, C.J., Blackwell, G., Kopelowicz, A., Vaccaro, J.V., & Mintz, J. (1998). Skills training versus psychosocial occupational therapy for persons with persistent schizophrenia. *American Journal of Psychiatry*, 155(8), p. 1097-1091.

Further references

Phillips, R., Ball, C., Sackett, D.L., Badenoch, D., Straus, S., Haynes, B., & Dawes, M. (1998). *Levels of evidence and grades of recommendations*. Oxford: Centre for Evidence-Based Medicine.

Related Articles (not individually appraised)

Levels 1, 2, 3, 4 and 5 Evidence: N/A
