

**Based on the articles reviewed there is insufficient evidence for using life skills training programmes to integrate clients back into the community**

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**CLINICAL SCENARIO:** The reason this topic was chosen was to explore brain injury interventions to compare whether life skills based intervention is more effective than social skills based interventions in the outcome of community integration. Within rehabilitation units and residential settings it is often difficult to see what occupational therapy interventions are the most effective for intervention, within the residential setting there are a variety of social group opportunities for clients to be involved in and most of these involve socialisation as well as activity based interventions. In clinical experience the life skills interventions usually work better at integrating clients with brain injury back into the community because it is a functional task that establishes the skills that they are being assisted with. I have observed that groups like life skills training groups i.e. cooking groups within residential settings, enables clients to explore ways to do things and use their initiative promoting better functional outcomes in other areas of their rehabilitation. So the reason for this focused clinical question is to determine what evidence there is to establish whether life skills based intervention is superior or they equally have the same outcome.

Life skills based interventions refer to skills which can be taught and acquired through experience of a particular activity such as cooking, self cares, budgeting, meal preparation and planning.

Socially based interventions refer to groups which explore assertive behaviour and anger management in order to build skills that can be used to socially integrate into a community.

<p><b>FOCUSSED CLINICAL QUESTION:</b> Are life skills based interventions more effective in achieving community integration when compared to socially based interventions following brain injury for males and females over 18 years of age?</p>
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**SUMMARY OF SEARCH, 'BEST EVIDENCE' APPRAISED, AND KEY FINDINGS:**

4 studies were located and two were used for critique, the two studies did not provide sufficient enough evidence in order to answer the clinical question fully. Many of the articles located were not appropriate for use

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within this as they lacked appropriateness to the question posed. The articles that were used for critique had a level 1 for best evidence and the other article was determined as a level 3.

Reistetter & Abreu, 2005 systematically reviewed the literature available on community integration and brain injury, focusing on four key questions to determine the best measurement for integration. There was mixed evidence and some evidence to support certain measurements used.

Wheeler, et al., 2007 used a pilot study to determine the effectiveness of life skills training in community integration following traumatic brain injury. It was found that it was positive in increasing independence for community integration in productive functional activities. There was no evidence to support social integration as being positive in community integration.

#### **CLINICAL BOTTOM LINE:**

Based on the articles reviewed there is insufficient evidence for using life skills training programmes to integrate clients back into the community, at present socially based interventions have no clinical significance for promoting community integration either.

**LIMITATION OF THIS CAT:** *This critically appraised topic has been peer-reviewed by a lecturer as part of an assignment.*

#### **SEARCH STRATEGY:**

The sites that were used to search for literature included Google scholar, CINAHL and Cochrane. From Google scholar the articles which were most appropriate and within a specified journal were then used to undertake a search through the library catalogue. The key words which were used were community integration, brain injury, social skills, life satisfaction and functional activities.

#### **INCLUSION and EXCLUSION CRITERIA**

- Inclusion:
    - Studies that had brain injury
    - Males 18 years and over
    - Were published between 2005-2008
    - Community Integration
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- Exclusion:  
Females and males under 18 years  
Alcohol and drug related issues/ dual diagnoses.  
Severity of brain injury.  
Research that was used within the systematic review.

## RESULTS OF SEARCH

Study Design/ Methodology of Articles Retrieved	Level	Author (Year)
Systematic Review	1	Reistetter & Abreu, 2005
Non randomized control trial	3	Cicerone, et al., 2004.
Cohort	3	Dahlberg, et al., 2006
Pilot (Equivalent to a non randomized control trial)	3	Wheeler, et al., 2007

## BEST EVIDENCE

The following study/papers was identified as the 'best' evidence and selected for critical appraisal. Reasons for selecting these studies were:

- Systematic review- (Reistetter & Abreu, 2005) this was given to review and is considered best evidence because they aim to summarise all relevant and available research on a particular topic and evaluates the quality of the research (Taylor, 2007).
- Pilot Study- (Wheeler, et al., 2007) This study was included because of its relevance to the clinical question and has a reasonable amount of level of evidence provided; it has the equivalence to a non randomised control trial as it has a treatment group and a control group.

## SUMMARY OF BEST EVIDENCE

Reistetter & Abreu, 2005

**Aim/Objective of the Study/Systematic Review:** To appraise the evidence on Community Integration (CI) measures for adults who have sustained a brain injury.

**Study Design:** Systematic Review

**Search Strategy:** Key words and headings included: Community integration, community reintegration, community re-entry, participation, Community Integration Questionnaire (CIQ), Craig Handicap Assessment Rating Techniques (CHART), Community Integration Measure (CIM), Brain injuries.

**Methods:** Literature was retrieved through electronic searches of Pubmed, CINAHL, Cochrane Library and Sociological Abstracts.

**Selection Criteria:**

Publication from 1990-2003 and manual searches from rehabilitation journals for 2003-2004.

**Exclusion Criteria:**

Studies for paediatrics  
 Studies not translated to English.

**Inclusion criteria included:**

Adults who were 19 years and over  
 Traumatic brain injury studies, stroke, and other brain injuries  
 Community integration as an outcome measure  
 Studies that had community integration as its main theme  
 Theoretical articles by experts opinions.

In order to abstract data a coding sheet was designed to obtain information for review. There was blending of both qualitative and quantitative articles in order to achieve outcome questions.

There was a scale which was used in order to include studies within the review, these included: complete citation, study selection criteria, study quality description, sampling, measurement analysis, validity and trustworthiness.

Articles were then scored on quality points, grade of evidence and level of evidence.

**Main Findings from the literature:**

*What is the best method for measuring community integration after brain injury?*

-Identifies the CIQ (Community Integration Questionnaire) as the best measure of CI, considering validity, reliability, and frequency of use.

*Can we predict CI after rehabilitation?*

- There is inconsistency in the research about whether a prediction can be made for CI after rehabilitation.

*Does social and activity performance affect community integration?*

-There is minimal evidence that basic activities of daily living measured in isolation are connected to higher CI scores.

-There is mixed evidence to suggest that FIM (Functional Independence Measure) and FAM (Functional Assessment Measure) are sufficient for short term indications of CI.

-Individuals working part time had fewer unmet needs and better social and home integration due to employment.

*Does community integration affect quality of life and life satisfaction?*

- There is mixed evidence between the link of quality of life and CI and there is strong evidence that supports life satisfaction, CI, and social integration.

- There is evidence to suggest that life satisfaction and CI does not materialise until two or more years following injury which can have consequences for long term outcomes.

- At present social integration is most positively connected to life satisfaction, there is also evidence that connects productive integration an employment as well.

**Original Authors' Conclusions**

"The review has provided good evidence for the designation of Community Integration as the main goal of rehabilitation and for the use of CIQ and RTW (Return to Work) as outcome measures for evaluating CI; moderate evidence for using the CHART to evaluate the effectiveness of CI, and little evidence to support the use of CIM, SPRS or the RNL (Reintegration to Normal Living Scale)" (Reistetter & Abreu, 2005, p 208).

It provides good evidence for occupational therapists predictions on integrating clients back into the community after using measures such as CT (Computerised Tomography), GCS (Glasgow Coma Scale), and PTA (Post Traumatic Amnesia). It is suggested that OT's continue to design support programmes following brain injury. It concludes that further research be carried out in relation to occupation and health after a brain injury and the positive correlation between CI and occupational therapy need to be explored.

## Critical Appraisal:

### Validity

- The review has a clear focus: To appraise the evidence on Community Integration (CI) measures for adults who have sustained a brain injury.
- The published literature was extensively searched with the results being put into a graph format, this was identified but not discussed, in terms of how many quantitative and how many qualitative studies were located.
- There was establishment of inclusion and exclusion criteria for the studies, a number of inclusion criteria were used and were appropriate for the aim of the review and related to the overall findings.
- A range of research forms were used (RCTs, cohort, cross sectional, case control).
- There is scoring criteria for the use of quantitative articles being researched: This is based on the Oxford Centre of Evidence Based Medicine with a five point grading system. These levels have a numbering system of 'best evidence' through to 'poor evidence.'
- The results have been placed into four different visual figures denoting different aspects, there is no clear explanation about what these figures mean and what relevance they have to the research question or aim.
- Within the appendix there are summary tables which identify studies that examine the variables associated with CI and brain injury. There is also a summary table of terms and abbreviations as part of the appendix which is helpful for reference to within the systematic review. There is no indication that this can be found at the end of the review so there are a number of abbreviations that are unidentifiable until the end.

### Interpretation of Results

- There are limited recommendations for clinical practice or further research to be completed. It is unclear to determine where to go after the systematic review to fill any research gaps that may be necessary.
- A lot of the evidence which was reviewed was mixed and difficult to draw conclusions from.
- It was unclear where the general conclusion following each review or exploration of a question was within the four questions they were answering.
- In the 'scoring of evidence' section it was difficult to determine what studies were then placed into the categories of percentages, within the review the percentages were not mentioned later on or had relevance to the overall data abstraction, it was left for the reader to assume that they had been placed into the category of '1a' or '2b' for example.

### Summary/Conclusion:

Overall the systematic review was comprehensive, answering the questions in which it posed at the beginning and giving clear rationale for why the review was taking place. It had a range of studies that it included and provided general conclusions after analysis was completed. The systematic review aimed to explore the community integration factors and did so clearly with reference to the articles in the conclusion. Some aspects of the data extraction and grading system were difficult to understand and further clarification was needed around this. The information that was retrieved was up to date and explored many different quantitative studies. The outcome measures could have been explored in more detail to establish the key aspects for community integration.

## SUMMARY OF BEST EVIDENCE

Wheeler, et al., 2007

**Aim/Objective of the Study/Systematic Review:** The aim of the study was to examine the effect of a community based life skills training programme had on community participation and self reported life satisfaction for individuals with moderate to severe brain injury.

**Study Design:** Pilot Study- Equivalent to a non randomised control trial.

**Setting:** Community

**Participants:** The number of participants= 36

Participants had to be:

- Between the ages of 18-55 years old
- Have a moderate to severe TBI as determined by a coma of 1 hour or longer.
- Be able to understand the study and the process of consent
- Able to voluntarily consent to release measurement data, for the use of outcomes in the study.
- Have the ability to complete baseline and follow up evaluation measures independently.
- No history of severe neurological or psychiatric illnesses.
- After receiving informed consent retrospective chart reviews were completed to obtain demographic information related to age, gender, educational level, time since injury and information on CI and life satisfaction at baseline and the 90 day follow up evaluations.

### Intervention Investigated

*Control:* Recruited from different sources using flyers and presentations to small groups. Matched control subjects were used to enhance the study's external validity by controlling for subject maturation. There was no treatment offered and subjects were permitted to engage in any therapies they wanted, they served as a means of a comparison not a true control.

*Experimental:* The treatment condition involved participation in an intensive community based life skills training programme. It was intensive one-on-one training provided by trained life skills trainers. Occupational therapists were involved with all aspects of the training programmes. There were also speech therapists and physical therapists involved with the programmes on an as needed basis. Each subject received six hours of direct community based instruction per day for 6 weeks. The treatment generally included elements of self care, budgeting, meal preparation, home management, social behaviour, and specific vocational or educational preparation. There was also transition into the individual's home from a residential setting in the community.

### Outcome Measures

The CIQ (Community Integration Questionnaire) was used as a measure to determine statistical significance. It looked at three areas of functioning: home environment, social support network, and productive use of time. It is a 15 item scale. The range for the total score is 0-29.

The Satisfaction with Life Scale (SWLS) was used to measure life satisfaction. It is a self reported measure with 5 items and uses a 7 point response format. Total score ranges from 5-35, 20 represents a neutral point of satisfaction.

### Main Findings:

The mean change in CIQ score for treatment subjects was statistically significant  $p=.01$  and the control group did not meet statistical significance for CI  $p=.24$ .

There was statistical significance at follow up for productivity CIQ subscales for the treatment group  $p=.02$  and no significance for control subjects  $p=.56$ . Z values are mentioned which have negative numbers associated with them. Neither group showed significant changes in social integration between baseline and follow up evaluations.

### **Original Authors' Conclusions**

"People in the treatment group showed statistically significant increases in productivity and home integration CIQ scores but not in social integration at the follow up evaluation"  
This social integration aspect is noted that it needs further analysis.

### **Critical Appraisal:**

#### **Validity**

Ethical considerations were accounted for and were appropriate before any research was undertaken.

There was good use of clear tables that compared the treatment group with the control group from baseline and follow up, p values and standard deviations were used to highlight this.

The selection criterion was appropriate as it established the subjects to be used.

The literature review is appropriate and follows a range of studies which have been carried out and relates directly to the aim outlined.

There was no discussion about who administered or explained what the questionnaires were to the participants.

It was non-randomised which means it has the potential to have variables which are not similar (e.g. demographic baseline data) if randomisation had taken place there is more of a likelihood of similar baseline data.

The selection criteria is biased to the "Radical Rehab solutions" researchers as they selected the participants to be involved, this can alter outcome measures because the research being undertaken needs a positive result for the hypothesis.

The self reported questionnaire is difficult to gain true results from because it is very subjective, the patient could skew the data because they see themselves neither negatively or positively.

There was no mention of whether the health workers and researchers were blind to the treatment. This has the potential for data abstraction being biased towards a positive result.

#### **Interpretation of Results**

There is reference to the clinical significance of the results and it shows a positive outcome for the life skills training intervention and no change for the social aspect of treatment. The control group exhibited no change in outcomes overall.

There is no explanation of what Z values are and what relevance they have, so there is uncertainty about what they mean to the overall results.

There is a limitation for the follow up period of only being 90 days, this may have impacted on whether social integration is a progressive outcome rather than unchangeable.

There is a small sample size which could have an impact on statistical significance.

Baseline differences between the groups limited strength of the outcomes because the comparisons were unavailable.

**Summary/Conclusion:** Overall this study provided some appropriate results for clinical use in working with clients with brain injury. The selection criteria were justified due to the funding constraints of the researchers. The participants were informed of the study prior to being involved which took into account ethical procedures. The small sample size and

the fact that blinding and randomization did not occur are limitations of the study. There were also the potential biases which occurred through the data collection and this may have impacted the outcome measures.

## **IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE**

### **RESEARCH**

Life skills training would be an ideal tool to use in community integration in order to prepare clients for the real world and give them perspective on every day tasks that need to be completed. However because of the lack of appropriate research and validation within this area it would be insufficient to use the pilot study to justify the practical use of it in occupational therapy practice. In terms of the present literature reviewed in the systematic review there is insufficient evidence for the use of these types of activities in effective community integration within this population. It is also important for occupational therapists to be aware of the approach that they take with the life skills training and further exploration into the definition and content to be used with clients needs to occur. The life skills training approach is a good framework for doing functional activities and should not be disregarded based on the present evidence either because it does essentially meet the requirements for interventions within brain injury rehabilitation. If more studies are done to establish the robustness and effectiveness of this training programme within occupational therapy it will give therapists an appropriate tool for future use.

Education on the use of the life skills training would need to be necessary if effective intervention was to occur with clients on a clinical level. This education could include seminars or three day training sessions to learn the principals and delivery techniques of using this in practice.

Further research needs to be completed in order to validate the findings of the systematic review and pilot study in order to answer the clinical question posed. This could include taking a larger sample size randomizing the participants, and double blinding the data gatherers and researchers in order to get more accurate outcomes and conclusions. There is also limited exploration of why social integration had no statistical significance and this could be further researched with emphasis on social skills in people with brain injury with a control group of having social contact but no skills applied to their treatment. A longer follow up period such as one year for the study outcomes will also be necessary in order to establish whether the programme is effective or not over a greater period of time.

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