

CAHE JC Critically Appraised Article Summary

Journal Club Details

Date of submission	August 2008
Journal Club location	Southern Therapy Service
JC Facilitator	Jessica Atkinson & Bronwyn Keller

Clinical Scenario

What is the effectiveness of Mental Imagery in promoting relearning for people after stroke?

Review Question/PICO/PACO

- P Stroke patients
- I Mental Imagery
- C Usual care
- O Improved function

Article/Paper

Liu KP, Chan CC, Lee TM et al. Mental Imagery for Promoting Relearning for People after Stroke: A Randomised Controlled Trial. Arch Phys Med Rehabil 2004; 85:1403-1408.

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Article Methodology:	Randomised Controlled Trial
Returned JC on:	25 August 2008
By CAHE staff member:	Lucylynn M. Lizarondo

Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>The study has a clearly focused question:</p> <p>Population: Patients who satisfied the following criteria were included: first unilateral cerebral infarction as confirmed by a computed tomography scan; age 60 or older; independent in performing daily activities before admission; able to communicate effectively.</p> <p>Intervention: Two groups were formed, one received the mental imagery program and the other group was given functional retraining program. Both groups received training for a total of 3 weeks with five one-hour sessions in each week. During these 3 weeks, patients were trained to perform three sets of daily tasks. Patients in both groups also received one-hour physiotherapy sessions for training in walking and general muscle strengthening 5 days a week during the study.</p> <p>In the mental imagery program, patients were trained in the technique of mental imagery to practice specific tasks. In the first week, focus was on task analysis enhancement, second week was on problem identification and the last week emphasis was on practicing rectified task performance using mental imagery and actual practice. In the functional retraining program, on the other hand, the demonstration-then-practice method was used. Patients were required to practice the same tasks following a sequence and training schedule similar to that of the mental imagery program. However, with this intervention, the problems encountered by patients were rectified with the help of therapists. The therapists considered these problems and designed an adapted task performance. Each step involved in the adapted performance was demonstrated to patients. This was repeated until patients gained confidence to practice them. Patients then practiced the task with supervision by therapists.</p> <p>Outcomes: Performance of trained and untrained tasks; Fugl Meyer Assessment (FMA) and Color Trails test (CTT).</p>
2	✓			<p>This study was a randomised controlled trial which is just appropriate to address the research question.</p> <p>Is it worth continuing? YES</p>
3	✓			<p>Patients were randomised by means of drawing lots to either the mental imagery group or the functional retraining group. This was carried out by a therapist who was not involved in any part of the study.</p> <p>At baseline, patients from both groups were well-matched in terms of age, gender, duration of stroke onset, and FIM motor and cognitive subscales. There were also no significant differences in the baseline measures of performance in the first task set and the Fugl Meyer Assessment.</p>



Ques No.	Yes	Can't Tell	No	Comments
4	✓		✓	All assessments were performed by occupational therapists who were blind to the study. It would be impossible though to blind the patients and the therapists who facilitated the different programs.
5		✓		There were three patients who dropped out of the study, 1 from the mental imagery group and 2 from the functional training program. Although the authors did not carry out the intention-to-treat analysis, they reported that potential bias would have been minimal as these subjects' baseline characteristics and performance levels were similar to those who remained in the study.
6	✓			All participants in both groups were followed up and data collected in the same way.
7			✓	No power calculation was carried out. Therefore, it would be difficult to determine if the sample size was adequate.
8				<p>Results were presented using means and standard deviations. P-values were likewise given to show between-group differences.</p> <ul style="list-style-type: none"> • Results have shown that the mental imagery group reached a significantly higher level of performance on the trained tasks than the functional retraining group after completing both weeks 2 and 3 of the training. • There is likewise higher level of performance on the untrained tasks by those who did mental imagery compared to those who were given functional retraining program. • The mental imagery group achieved a significantly higher level of performance on the trained tasks at the 1-month follow-up compared to functional retraining. • There were no significant differences in CTT and FMA subscale scores between the 2 groups. However, mental imagery group showed significantly greater improvement in the CTT subscale scores across time than the functional retraining group. <p>Bottom line result: Mental imagery can be used as a training strategy to promote the relearning of daily tasks for people after an acute stroke.</p>
9				Differences between groups were determined based on p value computation. Results from this study can therefore be considered precise.
10	✓			The small sample size in the study may limit the extent to which the results may be considered generalisable. However, the study has covered the most important outcomes and was clear on the characteristics of patients who benefited from the program, hence, can be considered applicable to the local setting.