
There is fair evidence to suggest that clients with traumatic brain injury observe fewer everyday memory failures (scoring 22.5 points less on the Everyday Memory Questionnaire) after 9 weeks of notebook training

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Clinical question: Is the use of memory aids effective in improving the recall in clients with brain injury post discharge compared to any other/no treatment?

Clinical bottom line: There is fair evidence (level 2b) to suggest that notebook training decreases self-reported memory failures of clients with traumatic brain injury after 9 weeks of training.

Citation: Schmitter-Edgecombe, M., Fahy, J. F., Whelan, J. P., & Long, C. J. (1995). Memory remediation after severe closed head injury: Notebook training versus supportive therapy. *Journal of Clinical and Consulting Psychology*, 63(3), 484-489.

Search strategy: CINAHL, MEDLINE, Pubmed, PsycArticles, PsychInfo, OT seeker. Search terms used included:

1. (Traumatic brain injury) or (brain injury) or (head injury).
2. (Memory) or (memory retraining) or (memory aid) or (diary) or (notebook) or (cognitive retraining).

Search was then combined. Search was limited to randomised control trials, journals in English and human subjects.

Study summary:

Randomised control trial with no blinding.

There were 8 participants in the study, the subjects were matched and then randomly assigned to a notebook training group or supportive therapy group. Authors of study stated that assessors were blinded pre-test but do not state if the assessors were blinded at post test and follow up, authors do not state if blinding of subjects occurred.

Thirty individuals volunteered for this study, twelve met the inclusion criteria. Eight of the twelve consented to randomisation into either group. Participants were then randomly assigned to a group, although authors do not state how random assignment was achieved. No drop outs occurred during the study. One subject from the supportive therapy group did miss six out of the sixteen sessions. All participants completed pre, post and follow up evaluation.

Treatment group:

The treatment group of 4 participants received two sixty minute sessions per week over 8 weeks. The participants were also given a wristwatch to cue them to use the notebook regularly. The authors did not state how often the participants were cued via the alarm on the wristwatch.

Comparison group:

The supportive therapy group of 4 participants were encouraged to discuss their problems of daily living. An emphasis was placed on not discussing memory compensation strategies. Both groups were run by the same two therapists, two students in a group setting. The authors do not state if the supportive therapy group met for the same duration or for as many sessions as the notebook group. The two groups were comparable in demographic and inclusion criteria.

Outcome measures:

This study's main outcome measures included measures for what the authors call 'laboratory based recall' and every day memory failures. For the laboratory based recall and laboratory based everyday memory they used the Wechsler memory scale-revised and the Rivermead behavioural memory test respectively. For everyday memory failures (EMF) the authors used the Everyday memory questionnaire (EMQ), with both the participant and a relative or friend completing the questionnaire. Using the questionnaire the authors measured retrospective everyday memory failures and observed memory failures.

Validity:

- Biases for this study included measurement biases and sample selection biases. All these biases favoured the treatment group.
- Sample selection biases: Volunteer bias and attention bias.
- Measurement biases: different therapists, recall bias, lack of masked evaluation.
- Small sample size decreases the power of the study
- Main outcome measure (EMQ) for which the authors report a statistically significant change is a subjective measure with no published reliability or validity.
- Outcome measures were not used correctly, the RBMT was modified to allow subjects to take notes while one person's outcome measures for the questionnaires was not valid as the subject had no family members or friends who could complete the form as well.
- One participant missed six out of sixteen sessions in the control group, the authors do not state how this may have affected their data analysis or if they included this data in their analysis.

Results: The study found a statistical significant difference ($p < 0.05$) between groups on the EMQ at post treatment. No other statistically significant results were

found by the authors of this study. The authors of this study did not calculate confidence intervals, nor discuss minimal clinically important change.

	Mean Difference Between Groups	95% Confidence Interval
Everyday memory failures reported at post-treatment	20.12	32.4 to 72.7
Everyday memory failures reported at follow-up	14	44.8 to 61.8

Calculation of 95% confidence interval of everyday memory failures (EMF) displayed a wide confidence interval- Everyday Memory Questionnaire is scored from 0-140.

Applicability:

- The study reports no statistically significant difference between the notebook training and supportive therapy group at 6-months follow up, however study may have lacked power given small sample size and wide confidence intervals.
- The study possesses many biases:
- Sample selection biases: Volunteer bias and attention bias.
- Measurement biases: different therapists, recall bias, lack of masked evaluation.
- The client population of this study has some similarity with clients occupational therapists are likely to encounter in therapy, however therapists are cautioned to note the mean time since injury for the study participants: 77.7 months and 86.8 months for notebook group and supportive therapy group respectively.
- The authors claim that the study involves people with severe TBI, but closer inspection reveals the participants to have mild TBI.

Kill or update by: 5th May 2005