CAHE JC Critically Appraised Article Summary

Journal Club Details

Date of submission	August 2008
Journal Club location	Flinders Medical Centre
JC Facilitator	Leah Paine/Emma Gillespie

Clinical Scenario

Is there evidence for the effectiveness of cognitive rehabilitation for aged care patients in terms of improving their functional independence?

Review Question/PICO/PACO

P Aged care patients (>65 y/o) in acute or rehab hospital setting

I Cognitive rehabilitation approaches

C No intervention

O Level of independence in activities of daily living

Article/Paper

Ball K, Berch D, Helmers K, et al. Effects of Cognitive Training Interventions with Older Adults. *JAMA 2002*; 288(18):2271-2281.

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Article Methodology:	Randomised controlled trial
Returned JC on:	25 September 2008
By CAHE staff member:	Lucylynn M. Lizarondo

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			The study asked a clearly focused question. *Population*: Persons aged 65-94 who were living independently in good functional and cognitive status were enrolled in the study. Excluded from participation were those younger than 65; had already experienced substantial cognitive decline; had self-reported diagnosis of Alzheimer's disease; had already experienced substantial functional decline; had medical conditions that would predispose them to functional decline or death; had recent cognitive training; severe losses in vision, hearing or communication ability that would impair performance. *Intervention*: 4 groups Group 1: Memory training – focused on memory tasks; Exercises involved laboratory-like memory tasks as well as memory tasks related to cognitive activities of everyday life. Group 2: Reasoning training – focused on the ability to solve problems that follow a serial pattern; exercises involved abstract reasoning problems related to activities of daily living. Group 3: Speed-of-processing – focused on visual search skills and the ability to identify and locate visual information quickly in a divided attention format; Group 4: No contact control group *Outcomes*: a. Proximal outcomes (cognitive abilities) – memory assessment, reasoning assessment and speed-of-processing assessment b. Primary outcomes (daily function) – performance based (everyday problem solving and everyday speed) and self-reported
2	✓			This study was a randomised controlled trial which was an appropriate study design to address the objectives of the study. Is it worth continuing: YES
3		✓		The study reported that participants were randomised to the four different interventions but no specific method was mentioned. Randomisation is done to eliminate systematic differences among groups in order to be more confident of the results that can be drawn from the study. In this article, it would be difficult to tell whether this was achieved as the authors did not present the baseline characteristics of the 4 different groups.
4	✓		✓	Assessors were blind to the group assignment of the participants. It is, however, impossible to blind the participants and those who facilitated the different exercises.

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Ques No.	Yes	Can't Tell	No	Comments
5	✓			Intention-to-treat analyses were used in order to address the issue of some participants who were excluded due to violation from the treatment protocol.
6	✓			Outcomes were measured and collected in the same way for all participants. Proximal and primary composites were measured at 4 time points for all the groups – baseline, immediate post-test, first annual evaluation and second annual evaluation.
7	✓			The study was sufficiently powered to detect an effect size of 0.20 at 95% power with a sample of 2832.
8				Results were presented in p-values, showing the change from baseline to post-intervention, first annual evaluation and second annual evaluation. • Each training program produced an immediate effect on its corresponding cognitive ability. These effects were significant throughout the 24 months observation period. • Booster training enhanced training gains in speed and reasoning, which were maintained at 2-year follow up. • The net effects on functional outcome composites were generally small and not significant. The participants, however, remained functionally independent over the 2-year observation period. *Bottom line result*: The ACTIVE interventions were effective in improving targeted cognitive abilities, both short term and long term (up to 2 years).
9				Differences between baseline and post-implementation measures were determined based on p-value computation. Results from this study can therefore be considered precise.
10	✓			One of the strengths of this study was inclusion of a large, diverse sample which increases the generalisability of the results. The study also examined the most important outcomes – cognitive abilities and daily functioning in older, independent living individuals. Hence, the overall applicability of these ACTIVE interventions is good. However, the extent to which the results can be applied to the local setting is a decision that is best made by those dealing with each individual setting.

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