

CAHE JC Critically Appraised Article Summary

Journal Club Details

Date of submission	April 2009
Journal Club location	Southern Therapy Service
JC Facilitator	Bronwyn Keller
JC Discipline/s	Multi-disciplinary

Clinical Scenario

What is the effectiveness of hip protectors in preventing hip fractures in older people living in nursing homes?

Review Question/PICO/PACO

- P** Elderly people in nursing homes
- I** Hip protectors
- C** No hip protectors
- O** Occurrence of hip fracture

Article/Paper

Koike T, Orito Y, Toyoda H, et al. External hip protectors are effective for the elderly with higher than average risk factors for hip fractures. *Osteoporosis International* 2009; [Epub ahead of print]

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Article Methodology:	Cluster randomised controlled trial
Returned JC on:	16 April 2009
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Ques No.	Yes	Can't Tell	No	Comments
1	✓			The study asked a clearly focused question. <i>Participants:</i> older women at higher-than-average risk for falls and hip fracture <i>Intervention:</i> Hip protectors <i>Outcomes:</i> Primary outcome of interest was fracture of the proximal femur; secondary outcomes were pelvic fractures, falls, compliance with wearing hip protectors (intervention group)
2	✓			In most clinical trials (examining effectiveness of a particular intervention), participants are randomised as individuals to different treatments. However, there are instances when individual allocation is not possible or desirable and groups of individuals are randomized instead. This is what has been done in the present study – cluster randomization. The authors deemed it necessary to use cluster randomization as the intervention relied on changes to nursing techniques, which are specific per nursing home. Is it worth continuing? YES
3			✓	Randomisation was generated from a table of random numbers. Whilst this seemed to be an appropriate technique, there were still significant differences between groups in some of the most important variables at baseline.
4		✓		Data were collected by trained clinical research nurse and researchers who made monthly regular visits to all intervention and control homes. Information was crosschecked against local hospital records and roentgenograms. Whilst they may be aware of the participants' allocation to groups, it would have not have been possible to produce observer bias.
5	✓			An intention-to-treat analysis was carried out in all principal analyses.
6	✓			Outcomes were measured and collected in the same way for all patients in both groups.
7	✓			Power calculation was carried out so that the sample size used in the study can be considered adequate.
8				Results were presented using means, SDs, hazard ratio, p-values and confidence intervals. <i>Bottom line result:</i> Risk of hip fracture can be reduced by hip protectors among elderly women with fall history and low body mass index.
9	✓			P-values and confidence intervals were computed, so that results can be considered precise.
10		✓		The most important patient outcomes were considered. Whilst there are inherent limitations associated with cluster randomisation, the evidence obtained in this study <i>may be considered</i> appropriate in the local clinical setting. The authors have provided a good discussion of results and explicit arguments to substantiate their findings. It may be worthwhile to consider the use of hip protectors, especially if it is cost-effective. Hip protectors do not always prevent hip fracture after a fall, but the percentage of non-fallers increased. The authors reported that the lower incidence of fracture could be secondary to <i>lessened fear of falling and improved fall self-efficacy</i> .