

Does virtual reality training improve balance and risk of falls in the elderly population compared to a general physical activity programme?

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Clinical Bottom Line: VR was shown to improve balance in the elderly population, however not to a greater extent than conventional exercise. There was no evidence of reducing falls risks. Therefore, as both treatments had similar effects the use of VR may not be cost-effective.

PICO COMPONENTS

P: elderly OR frail elderly OR older adults OR over 65's OR aged 80 and over

I: virtual reality OR virtual reality training OR virtual reality exposure therapy OR VR OR simulation training OR video simulation OR computer simulation

C: physical activity programme OR exercise OR exercise therapy

O: balance OR postural balance OR stability OR risk of falls OR falls risk OR accidental falls OR falls prevention

INCLUSION/EXCLUSION CRITERIA

- No studies before 2016
- Systematic review or randomised controlled trial studies ONLY
- Study participants ages 65+ ONLY
- Physical activity programme incorporated as a comparator

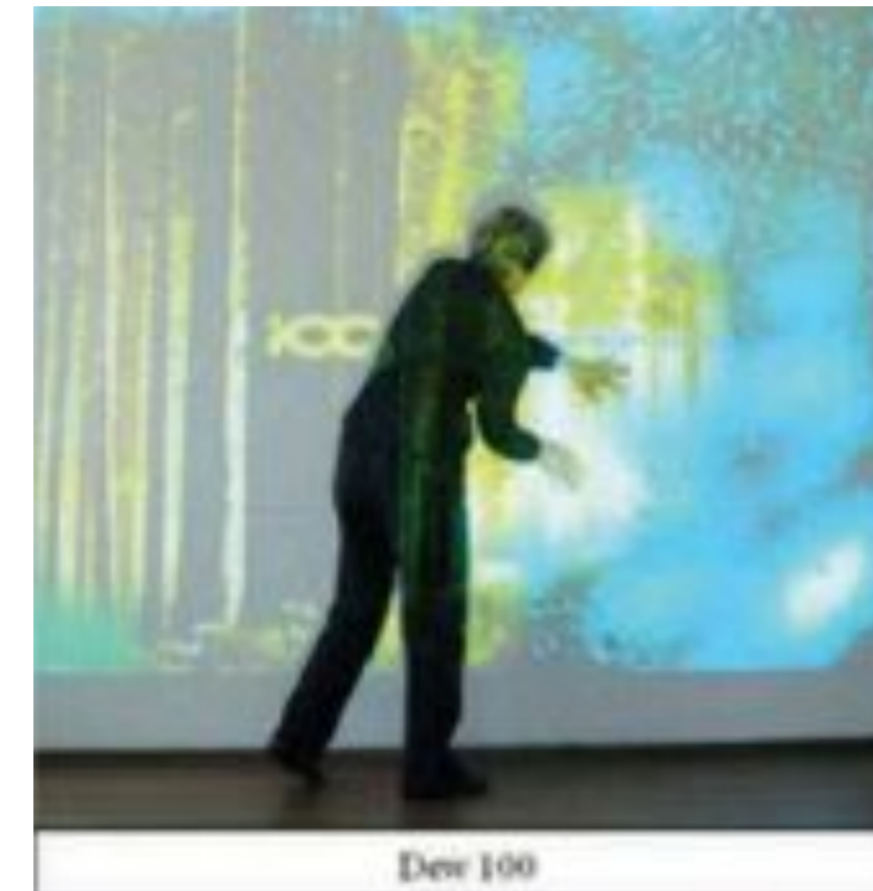
SEARCH STRATEGY

MEDLINE- PICO search using MeSH 2021 : 15 studies.

Cochrane Library - PICO search found no results, however an advanced search of the clinical questions found 19 studies.

PEDro Database: simple search results produced 14 studies.

We have selected one study, which was a result on the MEDLINE and Cochrane database. It was the only study we found that included both balance and risk of falls as outcome measures, as well as physical activity being used as the comparator.



Dev 100



Tap the mole



Hearts

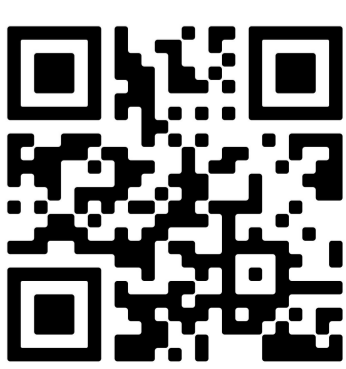
SELECTED ARTICLE: A randomised controlled trial

Comparison of the effects of virtual reality-based balance exercises and conventional exercises on balance and fall risk in older adults living in nursing homes in Turkey.

Yesilaprak, S.S., Yildirim, M.S., Tomruk, M., Ertekin, O., Algun, Z.C. (2016) Comparison of the effects of virtual reality-based balance exercises and conventional exercises on balance and fall risk in older adults living in nursing homes in Turkey. *Physiotherapy Theory and Practice*. 32(3), 191-201.

SUMMARY OF CRITICAL APPRAISAL

- **Aim:** to look at the effectiveness of VR based balance exercises to reduce falls risk compared to conventional balance exercises, as well as to help provide guidance to health care professionals for falls prevention in older adults living in Nursing Homes
- Randomisation of participants to VR and conventional exercise groups using computer generated random numbers. No significant difference in group demographics.
- 18 participants- small sample size.
- Blinding not carried out due to the nature of intervention
- P-values reported for all outcome measures. Seems to be a lack of sufficient statistical power for some of the measures. Confidence intervals not reported.
- Significant difference in results of Berg Balance Scale, eyes closed left leg stand and tandem stance in both groups, but not between the groups. No significant difference for the FES-I.



To read the article,
scan here!