American Physical Therapy Association Combined Sections Meeting 2009

Can Participation in a Multimedia Fall Prevention Program Prevent Falls?

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Purpose: The Multimedia Fall Prevention (MFP) system utilizes daily fall diaries, fall history interviews with personalized workbooks and interactive multimedia training sessions to provide fall prevention interventions to Seniors who have fallen or regularly lose their balance. We examined the influence of these approaches on prospectively reported falls.

Background: Participants in previous studies who had Multimedia fall prevention sessions recognized significantly more fall-threats in 10 novel scenes (p=.001). In order to prevent falls an individual must perceive fall 'threats'. If increased recognition of fall threats results in improved awareness, there should be a reduction in falls.

Subjects: Volunteers were randomly assigned to Usual (n=80) or Multimedia (n=132) fall prevention (152 females, range 60-96, mean=79, sd=6.9). A separate group (Control) consisted of 65 volunteers (range 65-94, mean=78, sd=6.3) who enrolled in a mobility study and were trained to keep daily fall diaries. All participants signed informed consent and were followed for up to 56 weeks.

Methods: In a randomized, double-blind trial, participants completed Usual (UFP, interview + diary training + follow-up interview + test) or Multimedia treatment (MFP, Usual + 1-2 multimedia sessions). Sessions included interactively viewing 10 multimedia vignettes (20-30s. each).

Analyses: A series of Cox regression survival analyses were performed on the Time to record a second fall. Predictors were Gender and Age. All main effects of the predictor variables, plus all the two-way interactions possible were run in a sequential Cox regression. None of the variables were appreciably disproportionate, showed significant violation of proportionality of hazards and no evidence of multicolinearity was seen, and age was not appreciably skewed.

Results: Among all subjects who participated at least 12 weeks (n=171), those who had Multimedia sessions (n=111) were significantly less likely to experience 2 falls during the follow-up period than subjects who received Usual fall prevention treatment (chi square=5.76, p=.0164, Hazard ratio=.42). After controlling for age and gender, the 65 Controls (who only kept fall diaries) had a significantly shorter time to fall than those in either Experimental group (MFP or UFP; p<.001).

Conclusions: Multimedia Fall Prevention sessions provide a highly effective means to help Seniors discover aspects of their actions or environment that could cause a fall. Addition of Multimedia sessions to a Standard fall prevention program results in a significant reduction in falls. Compared to a self-managed fall prevention program including fall diaries, the MFP system results in a highly significant reduction in falls and this outcome is observed in as little as 12 weeks.

MFP provides objective documentation of the patient's ability to perceive fall threats in familiar and novel settings. The clinician can introduce the patient to environments or functional tasks in a safe non-threatening manner. Inclusion of the specific fall risk behaviors identified through MFP sessions allow for an individualized evidence-based treatment plan of care.

Funding Source: NIH, National Institute on Aging (AG 02188, V. Panzer, Principal Investigator)