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Falls Prevention Using Multimedia in Persons with Dementia

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Background- Falls are often attributed to lack of safety awareness in persons with dementia (PwD). In long-term care (LTC), PwD experience 4.05 falls/year compared to 2.33 for those without dementia. We studied the influence of a multimedia intervention as demonstrated by recognition of circumstances that result in falls (Fall Threats) and the frequency of falls.

Methods- Ten LTC residents (age 77-95, mean (M)=88; MMSE 10-20, M=15; Katz ADL 1-4, M=2) with a history of falls were asked 'What could make someone fall?' for each of 5 pre-test video clips (<30 sec. each). Participants received 3-4 once weekly, 15 minute standardized multimedia falls prevention (MFP) training sessions. The intervention included a total of 3-5 multimedia vignettes (<2 min. each) concerning daily activities and common Fall Threats. In post-tests 3-5 weeks AFTER the last training session, participants were asked about Fall Threats in 5 novel video clips that did NOT include situations featured in pre-test clips OR training vignettes. Nurses who were not involved in any study procedures recorded falls per state regulations. Repeated-measures ANOVA were used to compare pre and post-test recognition of Fall Threats. Falls were measured for 8-week periods Before, During (including 3-5 weeks after the intervention and before post-testing) and After the intervention. A 3-level repeated-measures ANOVA was performed to determine if falls decreased from Before to During, followed by an increase from During to After. One-tailed hypothesis testing was used because a specific quadratic change was specified.

Results- Fall Threat recognition in 5 novel video clips improved dramatically ($p<.0001$, pre-test $M=2.3$ ($SD=2$); post-test $M=11.1$ ($SD=4$)). There were 25 falls over 6 months, 9 Before, 5 During (2 related to a Resident's serious infection requiring hospitalization and delaying participation) and 11 After post-testing was completed. The hypothesized quadratic trend was observed ($p<.10$, Before $M=0.9$ (1.4); During ($M=0.5$ (0.7) or $M=0.3$ (0.5) excluding infection-related falls); After ($M=1.1$ (1.4)); but the trend did not reach significance in this limited sample.

Conclusions- Individuals with moderate to severe cognitive decline can significantly improve their ability to identify circumstances that could cause a fall in video clips of common activities after 3-4 brief multimedia training sessions. Falls tended to decrease during the intervention period, returning to prior levels afterwards.

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