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Remote Delivery of an Evidence-Based Falls Prevention Intervention by a Family Caregiver to a Person with Alzheimer's Disease or a Related Dementia

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Background- Falls are a common reason that persons with Alzheimer's disease or related dementias (PwADRD) cannot remain at home. Many Family Caregivers (FCG) lack access to falls prevention interventions; especially those in rural locations. FallsTalk is a one-month evidence-based falls prevention (FP) behavioral intervention shown to encourage new FP behaviors and decrease falls. FallsTalk was adapted for FCG administration to a PwADRD with a recent history of falls and delivered to thirty-four Dyads (FCG+PwADRD).

Methods- FCGs were trained to conduct brief daily FP discussions together and randomly assigned to receive either standardized paper (FallsTalk,n=14) or computer-tailored (FallsTalkCaregiver,n=20) artificial intelligence-driven discussion suggestions based on FCG concerns. All Dyads had in-person FallsTalk training, daily discussions together and received weekly check-in calls.
FCGs reported weekly on the number of falls and new falls prevention behaviors (#newFPBs); as well as changes in the PwADRD's health, care or living arrangements during the intervention period and until medical (significant health status change) or residential (no longer living at home permanently) endpoint was reached, or 52 weeks were completed. Poisson regression models compared the #newFPBs and weekly fall rate (annualized for comparison with published residential care fall rates) between groups.

Results- Dyads receiving FallsTalk-Caregiver (computer-tailored discussion suggestions) reported **significantly more #newFPBs** (MeanPaper=5.34 (SEM=0.68, CI=3.48-5.93), MeanComputer=8.46 (SEM=0.76, CI=7.48-10.40); **p=.004**) during the intervention month. FallsTalk-Caregiver PwADRDs experienced a **significantly lower fall rate** (MeanPaper=0.073/week (SEM=.015, CI=0.049-0.109), MeanComputer=0.040/week (SEM=.008,CI=0.027-0.060); **p=.047**). Average annualized fall rates (Falls/year for Dyads with >=12 weeks follow-up) were: (MeanPaper=3.64/year, n=13; MeanComputer=2.08/year, n=19). FallsTalkCaregiver Average Technology Usability Survey scores (1-poor to 5-excellent) ranged from 4.32-4.55.

Conclusions- The computer-tailored FallsTalk-Caregiver was highly effective in encouraging new falls prevention behaviors and reducing falls in PwADRD living at home. Both versions bettered published average annual fall rates, compared to residential care professional CGs (4.05, ADRD diagnosis; 2.33, no diagnosis). We found that FCGs were either computer savvy, competent or naïve; so in-person training was valuable. To improve health equity and expand access, enabling FCGs with limited computer skills to deliver FallsTalk-Caregiver in rural locations, we created a remotely delivered step-by-step FCG training program and further simplified the user-interface to enhance usability.

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