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RESEARCH

Impact of a medication therapy management intervention targeting medications associated with falling: Results of a pilot study

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ABSTRACT

Background: The use of fall risk–increasing drugs (FRIDs) by older adults is one factor associated with falling, and FRID use is common among older adults. A targeted medication therapy management intervention focused on FRID use that included prescription and over-the-counter (OTC) medications, along with follow-up telephone calls was designed.
Objective: The purpose of this pilot study was to examine preliminary effects of a medication therapy management (MTM) intervention focused on FRIDs provided by a community pharmacist to older adults.
Design: Randomized, controlled trial.
Setting: One community pharmacy.
Participants: Eighty older adults who completed a fall prevention workshop.
Main outcome measures: The main outcome measures were the rate of discontinuing FRIDs, the proportion of older adults falling, and the number of falls. A secondary outcome was the acceptance rate of medication recommendations by patients and prescribers.
Results: Thirty-eight older adults received the targeted MTM intervention. Of the 31 older adults using a FRID, a larger proportion in the intervention group had FRID use modified relative to controls (77% and 28%, respectively; $P < 0.05$). There were no significant changes between the study groups in the risk and rate of falling. Medication recommendations in the intervention group had a 75% acceptance rate by patients and prescribers.
Conclusion: A targeted MTM intervention provided by a community pharmacist and focused on FRID use among older adults was effective in modifying FRID use. This result supports the preliminary conclusion that community pharmacists can play an important role in modifying FRID use among older adults.

For older adults, falls are common and costly, and they are caused by several factors, including elements in their internal living environment (e.g., throw rugs), elements in their external environment (e.g., ice on sidewalks), poor vision, and their physical status (e.g., leg strength and balance issues).[1,2] Another factor contributing to falling is the use of medications associated with falling.[2-6] Modifying older adults' use of medications associated with falling likely improves the safety of medications used by older adults and is an important component in preventing falling by older adults. Effective fall prevention has the potential to reduce serious fall-related injuries, emergency department visits, hospitalizations, nursing home placements, and functional decline.[7]

Several therapeutic categories of drugs are classified as fall risk–increasing drugs (FRIDs)[8] because their use is associated with falling.[3-6] In an observational study to assess fall

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Key Points

Background

- The use of falls risk—increasing drugs (FRIDs) by older adults is one factor associated with falling.
- Modifying FRID use among older adults via pharmacist-provided medication therapy management (MTM) could be an important component of effective falls prevention.
- Evidence is limited about strategies to modify FRID use among older adults and the impact of FRID modification on falling.
- To address these gaps, we designed and implemented a pilot study of an MTM intervention provided by a community pharmacist that focused on FRIDs, including OTC medications.

Findings

- The preliminary results of our pilot study show that the MTM intervention was effective in modifying FRID use by older adults.
- Medication recommendations made to patients and/or prescribers had a high acceptance rate.
- Even though significantly more patients in the intervention group stopped using FRID, there was no difference between groups in the number of falls.

incidence after dose reduction or discontinuation of FRIDs, older fallers used an average of 2.34 FRIDS on a regular basis.[8] Current falls prevention guidelines suggest a multifactorial fall risk assessment include a medication review.[7] Community pharmacists are in a unique position to assess and modify FRIDs used by older adults, via medication therapy management (MTM), to improve medication use and possibly prevent falling.

The concept of providing comprehensive medication reviews for older adults to modify FRID use has been explored using randomized controlled trials with varying results.[9,10] In one study, medication reviews were provided by trained general practitioners in Australia, and benzodiazepine use was not significantly modified relative to controls after 12 months.[9] In the other study, community pharmacists provided medication consults and significantly more subjects had FRID use modified relative to controls (14.0% versus 5.4%) after 12 months.[10] In addition, three randomized controlled trials assessed the effects of modifying FRIDs on falling among older adults.[9-11] The study involving community pharmacists showed no impact of modifying FRID use on the risk and rate of falling, relative to controls.[10]

A limitation of the previous randomized controlled trial examining the impact of community pharmacists providing medication consults related to FRIDs was that the study did not include over-the-counter (OTC) medications, which can contain FRIDs, especially medications used for sleeping.[12] In addition, the acceptance rate of pharmacists' recommendations to modify FRID use was low (24.4%).[13] To address these gaps, we designed and implemented a pilot study of a targeted MTM intervention provided by a community pharmacist that focused on FRIDs, including OTC medications. In addition, to facilitate the acceptance of medication recommendations made by the community pharmacist, the intervention involved training the community pharmacist in the fundamentals of motivational interviewing. A detailed description of this training and the intervention was published previously.[14]

Objectives

The purpose of this study was to examine preliminary effects of the targeted MTM intervention focused on FRIDs provided by a community pharmacist to older adults. The primary effects studied were the rate of discontinuing FRIDs and the risk and rate of falling. Secondary effects of the MTM intervention were characteristics of the recommendations made related to FRIDs, such as the medication that was the subject of a recommendation, to whom and how a recommendation was communicated, and acceptance rate.

Methods

Study design

Details of the planning and implementation process for this study were published previously.[14] A randomized, cluster, controlled experimental design was used with a 6-month follow-up period. The unit of randomization was a fall prevention program workshop coordinated by a community-based resource center. The intervention group received a face-to-face MTM intervention and direct feedback regarding their medication use from one trained community pharmacist in a private consultation room at one independently owned, retail community pharmacy.[14] The control group received a mailed pamphlet describing medication use and falls. English-speaking participants, age 65 years and older, who had fallen in the past 12 months or had a fear of falling, who participated in the workshop, and were capable of providing their own consent were eligible for the study. There was no screening for FRID use before study enrollment. The study was approved by the Health Sciences Institutional Review Board at the University of Wisconsin.

As this was a pilot study to examine feasibility of recruiting older adults and implementing the MTM intervention, the goal was to enroll 80 subjects, 40 in each study group, who completed the falls prevention workshop. The pilot study was not powered to detect statistically significant differences between study groups in outcomes, such as the proportion of subjects who discontinued medications or the number of falls.

Subject recruitment

Enrollment by older adults in the fall prevention workshops was voluntary and was not influenced in any way by the researchers. At the last meeting of each workshop, two trained study recruiters met with workshop participants to introduce the study and answer questions. Approximately 4 to 5 days after the last meeting of each workshop, a trained study recruiter telephoned prospective study subjects who had not enrolled in the study. After study enrollment, trained student pharmacist interviewers telephoned each study subject to