

Prevention of Medication Misuse in Older Adults



OLDER AMERICANS
Substance Abuse & Mental Health
Technical Assistance Center



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TAC MISSION

The mission of the *Older Americans Substance Abuse and Mental Health Technical Assistance Center* is to enhance the quality of life of older adults by providing training and technical assistance to health care agencies and providers regarding health issues common in late life. TAC priorities include the prevention and early intervention of substance abuse, medication misuse and abuse, mental health disorders, and co-occurring disorders.

For more information on this topic or other topics offered in our *Professional Reference Series* please contact the Older Americans Substance Abuse and Mental Health Technical Assistance Center at:

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Prevention of Medication Misuse in Older Adults

Medication misuse is an important arena for prevention and early intervention among older adults. In contrast to drug abuse in young adults who often abuse illicit or illegally obtained prescription drugs, drug abuse problems among older adults more typically occur from misuse or abuse of prescription and/or over-the-counter (OTC) medications, as well as herbal remedies. Relative to younger individuals, older adults use a high number of prescription and OTC medications, increasing their risk for inappropriate use of medications.

Studies report that older persons regularly consume on average between two and six prescription medications and between one to three OTC medications per day. Late-life medication misuse includes the overuse, underuse, and irregular use of both prescribed and OTC medications.

Medication misuse that involves particular types of medications or patterns of use may develop into drug abuse. For example, a subset of older adults is at risk for developing problems with physical dependence when prescribed narcotics, barbiturates, or benzodiazepines are taken over long periods of time. Typically, abuse of psychoactive substances among older adults does not involve the use of these substances specifically to “get high” nor are they usually obtained illegally. Instead, unsafe combinations or amounts of medications may be obtained by seeking prescriptions from multiple physicians (“doctor shopping”), by obtaining medications from family members or peers, or by stockpiling medications over time.

Of particular concern is the combined use of specific prescription medications or OTC medications with alcohol. For example, concurrent use of alcohol with benzodiazepines or barbiturates can result in sedation, confusion, falls, delirium, and withdrawal seizures.

Health Education

Several programs have addressed medication misuse through the use of computer technology. Neafsey and colleagues have conducted two studies evaluating the use of touch-screen notebook computers that employ an interactive multimedia software program designed for the learning styles and psychomotor skills of older adults, called the Personal Education Program (PEP). A randomized clinical trial found that older adults (age 60 and older) using the PEP software increased knowledge regarding

the potential drug interactions that can result from self-medication with OTC medications and alcohol, compared to controls and those receiving an information booklet. PEP users also reported fewer adverse self-medication behaviors over time.

Another study involving PEP consisted of a randomized pilot study with more limited content (drug interactions with OTC antacids, calcium supplements, and acid reducers). The group using PEP in this study also demonstrated increased gains in knowledge and self-efficacy compared to controls. These programs did not assess long-term knowledge retention, so it is unclear whether the immediate knowledge and self-efficacy gains were sustained over time. Alemagno and colleagues also conducted a pretest/posttest pilot evaluation of an interactive computer intervention to reduce risk of medication misuse, showing some promising results at the 2-month followup among older adults recruited from senior centers (mean age 76): 55% of participants used the computer-generated medication reminder checklist, 32% used the checklist to discuss problems with a physician, and 24% reported “real change” in the way they took medications.

Group health education in church settings combined with individual sessions with a pharmacist has been evaluated as an alternative approach to preventing medication misuse. Although this evaluation was not targeted specifically at geriatric populations, the mean age of the volunteer participants was 69.7. In this pretest/posttest evaluation study, Schommer and colleagues found that participants reported taking fewer medications on a daily basis and had fewer medication-related problems six months after the intervention.

Prevention Strategies to Prevent or Minimize Drug-Related Problems in Geriatric Populations

Hanlon and colleagues recently reviewed the evidence from randomized controlled studies to determine whether drug-related problems and associated health outcomes can be modified by providing clinical pharmacy services for older adults in community-based settings. They found 14 randomized controlled studies assessing drug-related problems and health outcomes in individuals age 65 and older after pharmacist interventions in various settings, including home health settings (five studies), hospitals prior to discharge with home-based followup (three studies), clinics (three studies), a community pharmacy (one study), and long-term care facilities (two studies). The authors concluded that there was considerable evidence that clinical pharmacy interventions reduced the occurrence of drug-related problems but showed limited evidence that the interventions reduced morbidity, mortality, or health care costs.

Hospital Discharge-based Programs

Several studies have explored strategies to improve medication compliance and reduce medication misuse among older adults upon hospital discharge. Al-Rashed and colleagues found that patient knowledge and compliance to a medication regimen was significantly better among patients (age 65 and older) receiving a 30-minute consultation with a pharmacist prior to hospital discharge compared to those receiving standard discharge procedures. Those patients receiving the pharmacist consultation also had significantly fewer unplanned trips to

the doctor and hospital admissions, and personally altered their medications less than controls.

Pereles and colleagues evaluated the Self-Medication Program (SMP), a three-stage program in which geriatric patients (mean age 80) were given increasing responsibility for administering their own medications while still in the hospital. Compared to controls, the SMP patients had fewer medication errors, showed significant improvement in compliance, and had fewer serious medication errors at approximately one month after hospital discharge.

A study by Lowe and colleagues found comparable results in a study in which older patients (age range 57-96) that completed a three-stage self-medication program before discharge had significantly higher compliance scores and a greater knowledge of the purpose of medications 10 days after discharge compared to a control group receiving standard care.

Rich and colleagues found that patients (age 70 and older) who received a multidisciplinary intervention prior to discharge had significantly higher medication adherence compared to controls receiving standard care. The intervention included comprehensive patient education, dietary and social service consultations, medication review with a cardiologist, and intensive post-discharge followup. Esposito evaluated the effects of four different types of medication education prior to discharge for patients aged 65 and older. Although those results should be interpreted cautiously due to small sample size, the groups with medication dosage schedules had decreased incidence of medication errors compared to groups without schedules.

Home and Nursing Home Settings

A number of studies have examined the effectiveness of home-based medication review as an early intervention strategy to prevent medication misuse among older adults. The HOMER program was a large British clinical trial in which a pharmacist reviewed medications, provided education, and addressed barriers to compliance (such as inability to open pill bottle tops) with adults age 80 and older in their homes two and eight weeks after hospital discharge. Surprisingly, the intervention group had significantly more emergency hospital readmissions and physician home visits than controls.

In a randomized clinical trial involving a series of three home visits by pharmacists for all study participants, Lowe and colleagues demonstrated increased compliance and understanding of the purpose of medications among the group (aged 65 and older) that received additional pharmacist services during the first two home visits (an assessment of ability to use medications and appropriateness of prescribed medications during Visit One; discussion and reminder chart during Visit Two). In a different three-arm clinical trial, a group (aged 60 and older) that received a home visit that included a 20-minute teaching session, provision of pill cassettes, and a followup telephone call 1-2 weeks after the home visit indicated significantly greater improvement in medication-taking behaviors than the group without the followup telephone call. Both groups receiving the home visit teaching sessions had significantly higher medication-taking behavior scores compared to controls. In a study of older adults aged 65 and older receiving community nursing visits, Griffiths and colleagues demonstrated knowledge increases after a home-based

medication review and individualized consultation by a nurse among a group identified with deficits in medication knowledge and/or self-management ability.

In a small study in an inner-city setting, two general practitioners made one comprehensive visit each to four randomly selected nursing homes to review the prescribing record of each patient and alter prescriptions if needed. Among the 107 patients (aged 57-99, mean age 82.1) with “repeat” prescriptions reviewed, 65% had their prescriptions altered. Of this group, 51% had at least one item stopped, 26% had at least one item changed, and 7% had a new medication prescribed. One person had the medication dose increased. Benzodiazepines, antipsychotic drugs, antidepressant drugs, non-opioid analgesics, and laxatives were the medications most often stopped after review. Although the study is not generalizable, the authors concluded a single visit to a nursing home and a comprehensive review of prescriptions can greatly reduce the consumption of inappropriate medications.

Conclusions

Medication misuse is a serious and growing problem among older adults. Older adults can be particularly vulnerable to dangerous medication interactions and other problems related to medication misuse given age-related physical changes, cognitive changes, health problems with related numerous medications, and social isolation. Older adults with limited English language skills or low literacy skills can be at particular risk for not comprehending complex medication regimes and failure to recognize risky medication-taking behaviors.

Recommendations to Prevent Medication Misuse in Older Adults

A variety of guidelines and recommendations have been developed to assist providers and consumers in taking steps to minimize risks associated with medication misuse. A set of basic recommendations aimed at prevention of medication misuse is provided by an interdisciplinary panel assembled by the nonprofit Alliance for Aging Research. This group issued recommendations for researchers, health care organizations, and public policymakers to address the issue of geriatric medication misuse in its 1998 publication, "When Medicine Hurts Instead of Helps: Preventing Medication Problems in Older Persons." The recommendations were as follows:

- Compile and disseminate a list of medications considered potentially inappropriate for use in older persons and mandate that the list be used as a screening tool.
- Provide geriatrics-relevant labeling information for over-the-counter medications.
- Fund and encourage research on medication-related problems in older persons to determine which medications are most troublesome and which patients are most at risk.
- Provide incentives to pharmaceutical manufacturers to better study medication effects in the frail elderly and oldest old in pre- and post-marketing clinical trials.
- Establish mechanisms for data collection, monitoring, and analysis of medication-related problems by age group.
- Encourage health care professionals' competency in geriatric pharmacotherapy.
- Direct Medicare Graduate Medical Education dollars to training in geriatric pharmacotherapy.
- Fund and provide education and resources for caregivers providing medication assistance to older people.

To obtain a copy of “When Medicine Hurts Instead of Helps: Preventing Medication Problems in Older Persons,” please contact:

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The *Professional Reference Series* is adapted from the SAMHSA Older Americans Substance Abuse and Mental Health Technical Assistance Center's "Evidence-Based Practices for Preventing Substance Abuse and Mental Health Problems in Older Adults."

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