



Program: Evidence-Based Disease Prevention:
Falls Prevention

Organization: North Central Area Agency on Aging, Hartford, CT
Project Title: Evidence-Based Fall Prevention in Senior Centers
Project Period: September 30, 2003 TO September 29, 2006
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Evidence Base

North Central Connecticut AAA bases its intervention on the *Yale Frailty and Injuries: Cooperative Studies of Intervention Trials (FICSIT)* and other random controlled trials. Because evidence suggests that modifying known risk factors can reduce the risk of falling, this project follows the design of the original research by using a fall risk assessment followed by specific interventions to change behavior and ultimately reduce the number of falls an individual experiences.

NCAAA will adapt protocols from the Connecticut Collaboration for Fall Prevention (CCFP) for use in senior centers. The Connecticut Collaboration for Fall Prevention is a collaboration of hospitals, outpatient rehabilitation facilities, home care agencies and primary care providers serving greater Hartford. The goal of CCFP is to imbed fall risk assessment and management into the health care of seniors by enhancing the knowledge, skills, and fall-related practices of relevant clinicians. CCFP is funded by the Donaghue Foundation and is directed by investigators at Yale University.

Original Research Evidence

The original FICSIT research done by Tinetti *et al* in 1994 studied 301 men and women at least 70 years of age who had at least one of the following risk factors for falling:

- Postural hypotension;
- Sedative use;
- Use of four prescription medications or more;

- Impaired strength or range of motion in the arms or legs;
- Impaired gait, balance or ability to move safely from the bed to a chair, the bathtub or the toilet.

The study's objective was to modify these risks through interventions that included adjusting medication, changing behavior and exercise. All participants received a home visit from a nurse practitioner who performed a baseline falls assessment, and a physical therapist who assessed risk factors related to muscle strength, joint impairment, as well as transfer and balance skills within the home setting.

Subjects in the intervention group received additional home visits from a physical therapist, who gave instructions on the exercise program and taught balance and transfer skills.

Control group subjects received home visits from social work students and were referred to the usual health care providers based on their initial assessments.

Results showed the intervention group subjects fell 35% of the time, while control group subjects fell 47% of the time. Additionally, "a smaller percentage of those in the intervention group than those in the control group still had the [identified] risk factor at the time of reassessment."

Adaptation of Model

Whereas the original research was primarily conducted in home settings, this project focuses on the community setting. It will adapt the original model by implementing the risk factor screening, assessment and intervention in the participating senior centers. With the help of professionals from the CCFP, the program will be adaptable for implementation directly by senior center staff and volunteers, consultants, community organizations, or health care providers who are part of the CCFP network. Project coordinators also plan to make the intervention adaptable in other community settings such as senior housing and adult day centers.

Project's Overall Design

The goal is to embed a sustainable evidence-based fall prevention program within greater Hartford senior centers by enhancing fall prevention-related knowledge and behavior, while also building or enhancing relationships between senior centers and relevant community and health care organizations.

Objectives are to develop, implement, evaluate, and disseminate a fall prevention program that is based on research targeting the following risk factors:

- Balance, gait, and vision impairments
- Postural hypotension
- Multiple medication use

- Home hazards

The proposed intervention will include an initial falls assessment in which participants will report the number of falls in the past year. Those with fewer than 2 falls can participate in a balance maintenance program at the center. Those with 2 or more falls will have a risk factor assessment and possibly participate in management strategies related to their identified risk factor at the senior centers. Some examples of these strategies include:

- Gait and/or balance training (maintenance or progressive)
- Medication grid, regular review, or reduction
- Appropriate footwear
- Environmental intervention/home safety evaluation
- Adequate fluid intake

Target Population

The target population is older persons living in the area serviced by the North Central Connecticut AAA. Senior centers were chosen to capture a socio-economically, ethnically, and functionally diverse population. During the first year, 3 senior centers will be targeted with culturally tailored fall prevention programs (660 seniors served). During the second and third years, 8 additional centers will be included (4,000 seniors exposed). An additional 5,500 will be reached through an additional 30 senior centers. At-risk seniors who do not usually participate in senior services will also be targeted.

Anticipated Outcomes

- Reduced falls in senior center clients
- Increased fall prevention knowledge and behaviors in center staff and clients
- A sustainable evidence-based fall prevention strategy embedded in three senior centers in the first year, and in eight more centers during years 2 and 3
- Development and/or enhancement of relationships between senior centers and relevant community and health care organizations

Evaluation Design

The Impact Evaluation will help determine the intervention's effect on participating seniors and center personnel. It will include developing interview-based questionnaires for use with participants and staff, continuous recruiting and interviewing of staff and seniors, as well as matching and randomizing participating centers beginning in year 2 or 3. Additionally, databases will be developed on all collected data to allow for statistical analyses.

Primary outcomes for seniors will be measured as self-reported falls. Primary outcomes for professional staff and volunteers will be measured as change in fall prevention-related knowledge and behaviors in staff. Secondary outcomes for seniors will be measured as change in fall prevention-related knowledge and

behaviors, change in confidence in performing activities without falling, and self-reported fall injuries.

The Process Evaluation will allow ongoing monitoring of program activity and determine where increased efforts might be needed. The evaluation will include summarizing the number of center personnel and seniors participating in the fall prevention program. It also will generate tables and graphs to illustrate both trends in fall prevention program participation and gender, ethnic and racial information to illustrate the diversity of participating seniors. Summary tables also will be developed each year documenting the specific number of fall prevention activities and educational materials at each center.

Partnerships

- North Central Connecticut Area Agency on Aging (AAA) will provide an Ex Officio member of the project's core group who will bring expertise regarding the regional network of senior services and will ensure collaborations are made with existing community-based senior service programs and services.
- Professionals from the Connecticut Collaboration for Fall Prevention (CCFP) will provide training and oversight to senior center staff, volunteers and consultants by professionals from CCFP (Drs. Baker and Tinetti and Ms. Gottschalk)
- Connecticut Hospital Association/Connecticut Association for Home Care will help tie together health care-based efforts with community-based efforts. This work will build on and be integrated into the Connecticut Collaboration for Fall Prevention (CCFP) described below.
- Hartford Area Senior Centers are the Community Aging Service Providers (CASP) and consist of 41 centers serving a combined membership of 62,506 seniors. The Centers will provide the setting and the participants for the program. They will help identify existing programs and relationships, as well as methods to incorporate evidence-based fall prevention assessments and interventions.
- The Center on Aging at the University of Connecticut Health Center will act as the research organization for the project and will be responsible for collecting and analyzing data, as well as evaluating the program.